Mothering in Context:
Ecological Determinants of Parent Behavior

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How characteristics of parents, children, and the family context relate to mothers' parenting were explored in a sample of 73 mothers and their 5- to 7-year-old children. Maternal authoritativeness was significantly correlated with retrospective attachment security, social support, marital satisfaction, prospect c ild behavior, and socioeconomic status. Although these constructs were interrelated, concurrently-assessed parent, child, and contextual-level variables also had unique and significant relations with parenting. Mothers who experienced many stressors stemming from their personal adjustment, social relationships, and children's behaviors were more likely to demonstrate insensitivity during parent–child interactions than participants reporting fewer stressors. Mediated pathways among these theorized predictors of parenting were explored, and findings were generally consistent with Belsky's (1984) process model of parenting.

As parenting behaviors have been shown to affect children's social, emotional, and cognitive development, a critical question that has emerged for both researchers and clinicians is, "What determines how parents behave toward their children?" Relatively separate bodies of research have examined how parents' developmental histories, psychological well-being, sources of stress and support, and child characteristics independently shape child caregiving behavior.

One theoretical framework that succinctly organizes the effects of multiple psychosocial variables on parenting is Belsky's (1984) ecological model. Belsky emphasized that child caregiving behaviors are determined by parent characteristics (i.e., parents' psychological functioning and developmental histories), child characteristics, and aspects of the broader social context (e.g., marital relations, social support, and occu-

pational experiences). Furthermore, he asserted that: (a) the influence of parents' developmental histories on child caregiving is mediated by their personalities and psychological functioning; (b) parents' psychological functioning has both a direct effect on parenting as well as an indirect effect through its impact on the broader context in which parent–child relationships are embedded; and (c) parents' social context has both a direct effect on child caregiving as well as an indirect effect that is mediated by parents' psychological functioning.

Belsky has used this model as an organizing framework in several literature reviews and in empirical investigations that predict paternal involvement (Volling & Belsky, 1991; Woodworth, Belsky, & Crnic, 1996) and child attachment (Belsky, 1996). The current study further assesses the validity of Belsky's theoretical model and extends previous research on parenting processes by examining the combined effects of parents' developmental histories and multiple contextual variables in the prediction of parent–child interaction. Using a community-based sample of 73 mothers and their 5- to 7-year-old children, this investigation empirically explores the ways in which selected characteristics of parents, children, and the family context relate to mothers' parenting behavior. Predictors include mothers' retrospective attachment security, depressive symptoms, marital satisfaction, perceived social support, and perceptions of child temperament. In the following sections the literature is summarized regarding the relation between parenting behavior and these five predictor variables.

Parent Predictor I: Retrospective Attachment Security

A small number of investigators have explicitly examined the association between retrospective attachment and child caregiving. Crowell and Feldman (1988), for example, reported that securely attached mothers, as categorized by the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985), were more supportive, helpful, and warm toward their children compared to insecurely attached mothers. Similarly, Grossmann, Fremmer-Bombik, Rudolph, and Grossmann (1988) reported that mothers who were categorized as securely attached using the Regensburg scoring method tended to accept the individuality of their infants at age 12 months, showed greater developmental sensitivity toward their toddlers at age 24 months, and displayed greater adaptability in their interactions. Similar results also have been reported using an open-ended questionnaire version of the AAI to categorize retrospective attachment security. Crandell, Fitzgerald, and Whipple (1997) found that mothers who were classified as securely attached based on their written

responses to the AAI protocol were more responsive to their preschoolers, encouraged greater autonomy, and displayed higher levels of synchrony during observed interactions.

Finally, retrospective attachment security has been related to parents' ability to set limits. Cohn, Cowan, Cowan, and Pearson (1992) found that retrospective maternal attachment was unrelated to maternal warmth, but insecurely attached mothers provided significantly less structure for their preschool-aged children than did securely attached mothers. Similarly, Crandell et al. (1997) reported that securely attached mothers demonstrated greater levels of control during parent-directed and cleanup tasks.

Parent Predictor II: Maternal Depression and Depressive Symptoms

Numerous studies have documented a relation between maternal depression and impaired child caregiving. Mothers who are depressed generally appear more irritable, less emotionally available, and express less warmth when interacting with their children compared to nondepressed mothers (Downey & Coyne, 1990). They have been found to exhibit relatively higher levels of negative affect, vocalize less often, and respond in a slower manner in parent–child interactions (Hops et al., 1987; Radke-Yarrow, Nottelman, Belmont, & Welsh, 1993). Moreover, they are more likely to ignore their young children, become mentally disengaged, and be less aware of their children's cues during play (e.g., Cox, Puckering, Pound, & Mills, 1987).

Depressed mothers' negative affect also may be manifested through frequent child criticism. Clinically depressed mothers have been found to be more likely to yell, tease, or threaten their 3- and 4-year-olds than are nondepressed mothers (Lovejoy, 1991). Like vise, women with depression experience greater difficulty in effectively controlling their children's behavior. For instance, clinically depressed mothers are less likely to set limits with their children and frequently surrender at ing parent–child conflicts (Kochanska, Kuczynski, Radke-Yarrow, & Welsh, 1987).

Fewer studies have explored the relation between depressive symptomatology and parenting using community samples. For instance, Nelson, Donenberg, and Weisz (1993) found that mothers with elevated depression scale scores on the Brief Symptom Inventory were more likely to ignore, protest, or verbally attack their children during problem-solving tasks. In addition, subclinical depression was negatively related to mothers' communication of nurturance and trust toward their children. Similarly, Stoneman, Brody, and Burke (1989) found that depressive symptoms were associated with the endorsement of authoritarian

and anxiety-induction control strategies rather than "rational discipline strategies" for mothers in a nonclinical sample.

Context Predictor I: Perceived Social Support

Another salient determinant of parenting behavior is social support. A meta-analysis of studies examining the relation between social support and maternal behavior revealed that perceived emotional and material support and maternal sensitivity are significantly correlated (Andreson & Telleen, 1992). Previous research has also conceptualized social support as a buffer that insulates mothers against the influence of stressors that may threaten optimal parenting. Simons and his colleagues reported that social support not only had a direct effect on supportive parenting, but also an indirect effect through its influence on levels of parental depression; inadequate social support was associated with higher rates of depression and hostility, which in turn was related to mothers' use of ineffective parenting practices (Simons, Lorenz, Wu, & Conger, 1993). Crockenberg (1987) found that social support was not significantly correlated with maternal anger and punitive control, but support instead moderated the relation between mothers' perceptions of their childhood relationship with their parents and their interactions with their infants. When mothers experienced both rejection during childhood and low current support from their partners, they were more likely to demonstrate a pattern of angry and punitive parenting.

Context Predictor II: Marital Satisfaction

Although most empirical data on the relation between marital functioning and parenting behavior originate from studies on the effects of divorce (e.g., Hetherington, 1993), a smaller number of investigations have been assessments of intact families. This literature, however, is difficult to interpret due to inconsistent findings. Statistically significant, positive relations have been documented between marital quality and parents' behavior toward infants and young children in several studies. Cox, Owen, Lewis, and Henderson (1989) reported that mothers who described their relationship with their husbands as close and open also displayed sensitivity and warmth toward their infants during play interactions. Similarly, Jouriles, Pfiffner, and O'Leary (1988) reported that mothers' level of marital discord was positively correlated with their use of disapproval statements directed toward their young sons (aged 18–30 months) and inattentiveness to their young daughters' disruptive behavior.

However, other studies of marital satisfaction and maternal behavior have failed to find statistically significant relations or have reported sig-

nificant, negative correlations between marital satisfaction and maternal sensitivity. Such investigators have hypothesized that mothers who are involved in unsatisfying relationships with their husbands tend to become more involved with their young children to compensate for a less-than-satisfactory marriage. For example, Brody, Pillegrini, and Sigel (1986) reported that maritally distressed mothers were generally more engaged with their school-aged children during teaching interactions than were mothers who reported relatively higher levels of marital satisfaction.

Child Predictor: Perceived Child Temperament

Child temperament, especially the "difficult temperament" profile, has received extensive attention as one child attribute that influences parenting behavior. Temperamentally easy children have been characterized by regularity, the tendency to approach novel stimuli, high adaptability, and a generally positive, mild mood; children who have been described as temperamentally difficult tend to be irregular in terms of their biological functions, frequently withdraw in response to new stimuli, are slow to adapt to change, and often express intense, negative mood (Thomas & Chess, 1977). Thomas and C' ess emphasized that child temperament affects parents' confidence, ʳ ₐnagement styles, and level of involvement.

Numerous studies have documented relatiᵒns between temperamental ease and parental behavior toward infa.ₜs, toddlerₛ ₐnd children. Maccoby, Snow, and Jacklin (1984) found that materₙₐl a ᵗessments of child temperament at age 12 months were related to their involvement with their children at age 18 months. Other longitudinal studies have linked perceptions of child temperament to parental control strategies. Lee and Bates (1985) related mothers' ratings of child temperament at age 6 months to aspects of observed mother–child interaction at age 2 years, and found that mothers of temperamentally easy children were less likely to experience discipline problems with their toddlers.

Although most published reports have documented significant correlations between child temperament and maternal behavior, several investigations have failed to find such associations. Nelson and Simmerer (1984) reported no significant correlation between child temperament and self-reported parental involvement, limit setting, responsiveness, or intimacy. Similarly, Koniak-Griffin and Verzemnieks (1993) found that mothers interacted in a similar manner with their young children, regardless of child temperament classification.
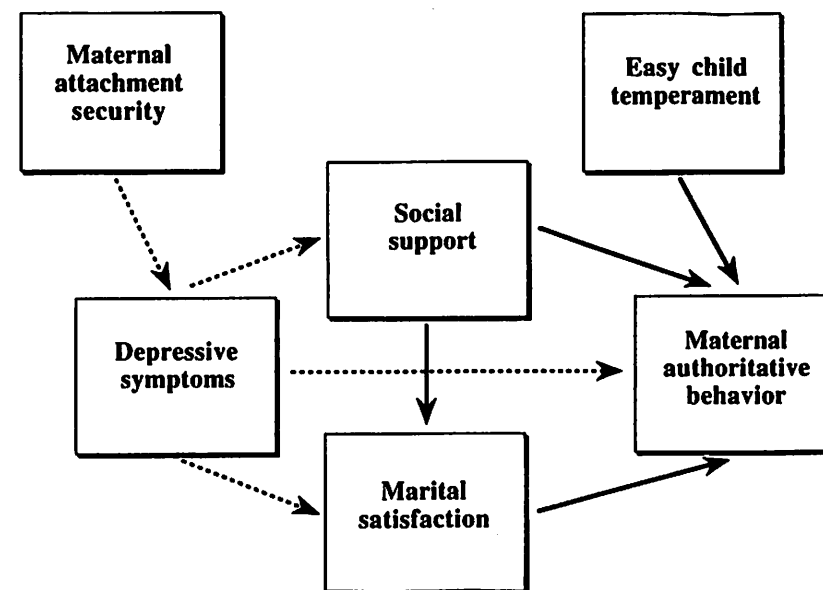
Figure 1. Proposed path model predicting ﹔ₙaternal authoritativeness.

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This investigation is an empirical exploration of the ways in which characteristics of parents, children, and the family context relate to mothers' authoritative parenting (i.e., a style of child caregiving that is characterized by high levels of warmth and control; Baumrind, 1973). Two analytic strategies were used to examine systematically these relations using cross-sectional data (cf. Luster & Okagaki, 1993).

1. Mediated pathways among the predictors of parenting were evaluated by testing a path model that operationalized Belsky's (1984) conceptual framework (see Figure 1). One to two variables were chosen to measure each of the three antecedent domains (i.e., parents' developmental histories and psychological resources, contextual sources of stress and support, and child characteristics) that Belsky posited in his process model of the determinants of parenting. Because one aim of this investigation was to integrate past research regarding the correlates and predictors of parenting styles, each selected variable had been the focus of many previous bivariate studies. The importance of each variable included in this investigation also had been underscored in literature

reviews addressing the cumulative effects of parent, child, and contextual factors on parental behaviors (e.g., Webster-Stratton, 1990). Moreover, the present analysis of Belsky's mediated model represents a significant advance for research in this area because it included the first detailed assessment of parents' developmental histories in conjunction with the measurement of multiple contextual variables that have been theorized to be predictors of parenting.

This path model, however, differed in three ways from Belsky's theoretical model. First, mothers' work experiences were not examined because approximately one third of the participants were homemakers. Second, a direct relation between social support and marital quality was postulated in the path model. This association is congruent, nevertheless, with Belsky's framework because both constructs have been theorized to share parental personality as a common determinant (J. Belsky, personal communication, 28 April 1997). Finally, a recursive model was used to facilitate estimation and interpretation of effects rather than allowing for reciprocal influences among variables. This research is not an exhaustive validation study of Belsky's model. Instead, the present investigation relied upon Belsky's ecological framework to integrate and extend past research findings on the determinants of parenting using cross-sectional data.

2. In addition to delineating the mediated model just described, Belsky (1984) hypothesized that characteristics of parents, children, and the social context each uniquely affect parenting processes. Because parenting is multiply determined, the impact of risk in each of these three domains may be buffered or exacerbated by functioning in the remaining areas. Thus, additional analyses explored the likely complexity of these relations. First, the contribution of parent, child, and contextual-level variables to parenting was examined when other factors were controlled. Guided by past research, several moderated relations also were evaluated to determine whether the impact of one theorized determinant of parenting was contingent upon the influence of another predictor.

Second, the combined association of parent, child, and contextual variables was used to predict statistically which parents were at an elevated risk for providing relatively insensitive child caregiving. This analysis is important because previous research has found that the number (rather than the kind) of environmental risk factors is strongly associated with parenting and child outcome (Hannan & Luster, 1991; Sameroff, Seifer, Baldwin, & Baldwin, 1993). Furthermore, these analyses broadened Belsky's original framework and included two additional predictor measures that have been highlighted in past research: socioeconomic status (SES) and an index of observer child behavior.

METHOD

Participants

Mothers ($n = 73$) and their 5- to 7-year-old children ($n = 73$) comprised the sample for this study. All participants were from intact families. Of the children, 45 were girls, 28 were boys; all were between the ages of 62 and 92 months ($M = 74.93$ months, $SD = 8.51$). Mothers ranged in age from 25 to 48 years ($M = 35.32$ years, $SD = 4.55$) and in education from partial high school to graduate school ($M = 16.03$ years, $SD = 2.72$). Of mothers, 95% were European American. The number of children in each family ranged from 2 to 8 ($M = 2.74$, $SD = 1.04$).

Participants were recruited through an advertisement distributed to children enrolled in the kindergarten and first grade classes of several school districts located in the metropolitan area of a medium-sized midwestern city. The advertisement briefly explained the goals of the study and requested that interested mothers of children eligible for the study to contact the investigator (the mothers were required to be presently married to the fathers of the eligible children). Participants were mailed a packet of questionnaires, a consent form, and a postage-paid return envelope. Of the 131 mothers who requested questionnaire packets, 73 completed all the necessary information, yielding a response rate of 56%. After returning the questionnaires, participants were contacted by a research assistant who scheduled a time in which mothers would be videotaped interacting with their children at home. As compensation for participation, mothers were offered either $15 or admission to a single-session parent education workshop conducted by the investigator.

Procedures

Mothers and their children were videotaped while playing in their homes. A standard set of age-appropriate toys was supplied by the investigator. The first 15 min of the videotaped session were unstructured; undergraduate research assistants asked the mothers to "play and interact as you typically do when your work is done and you have some uninterrupted free time to spend with your child." During the remaining 15 min, research assistants asked mothers to direct their children to do three tasks: put all of the toys away, have the children take off their shoes and socks and put them back on again, and assemble an 18-piece jigsaw puzzle.

Instruments

Demographic information. Mothers provided information regarding their age, education, marital status, nature of employment, and racial

and ethnic background for themselves and their spouses. Mothers also indicated the age, sex, and birth order of the focal children. Socioeconomic status was calculated using the 1980 Nam-Powers score, which combines education, income, and occupation in a multi-item index (Miller, 1991). Because 33% of the women in this sample were homemakers, mothers' Nam-Powers scores created a highly skewed index of overall family SES. This percentage is consistent with 1990 national employment data for mothers of children under the age of 6 years (Census Population and Housing, 1992). As such, fathers' scores were used as the indicator for family SES in the present investigation. Participants were generally categorized as middle class, but there was considerable variability within the sample.

Adult Attachment Interview Questionnaire (AAIQ). Retrospective maternal attachment security was assessed through the evaluation of mothers' written responses to the open-ended questions contained in the Adult Attachment Interview (George et al., 1985). The Adult Attachment Interview Questionnaire (Crandell et al., 1997) asks respondents to describe their childhood relationships with their parents and to provide specific examples. In addition, respondents are questioned about how they were comforted during childhood, separations from their parents, feelings of rejection, and threats of abandonment. The AAIQ also asks respondents to comment on the impact of these early experiences on their adult personality and on current relationships with their parents and their children.

The AAIQ was scored using the Regensburg method of analyzing the Adult Attachment Interview (Grossmann et al., 1988). Although used less frequently than the adult attachment classification system developed by Main and her associates (Main & Goldwyn, 1989), the Regensburg scoring system is particularly well suited for the analysis of written protocols due to its focus on evaluating individual sentences according to specified criteria. Four main dimensions were used to assess the respondent's internal working model of attachment: (a) portrayal of each parent as supportive, (b) focus on the topic of attachment and the richness of attachment information, (c) reflections on early attachment experiences, and (d) defensiveness or hostility in the written protocol. Secure versus insecure retrospective attachment was computed on the basis of selected combinations of these four dimensions (see Grossmann et al., 1988 for the detailed classification decision tree). Forty-one mothers (56%) clearly described in retrospect a supportive relationship with one or both of their parents, included numerous stories and evaluations of their childhood relationships, and easily recalled their early memories. They were labeled securely attached. In contrast, 32 mothers (44%) clearly de-

scribed both of their parents as insensitive caregivers, tended to distort their childhood memories defensively (i.e., narratives contained numerous evasive statements, blocked memories, and/or idealizations of parents), and avoided reflecting upon their early experiences (i.e., relatively few evaluations, explanations, and detailed stories about their childhood relationships). They were labeled insecurely attached. This relative distribution of securely versus insecurely attached participants is identical to that found by Crandell and her colleagues (56% securely attached) using the AAIQ and is virtually the same as the distribution reported by Grossmann and her associates for their Regensburg sample (57% securely attached).

Regensburg method classifications of retrospective attachment security display predictive validity, as demonstrated by the statistically significant concordance of maternal attachment categorizations with infant attachment classifications (Van IJzendoorn, 1992). Grossmann et al. (1988) found that mothers' retrospective attachment classification corresponded with infant attachment patterns that were assessed using the Strange Situation procedure 4 years later (i.e., secure retrospective maternal attachment corresponded with secure infant attachment whereas insecure retrospective maternal attachment corresponded with either avoidant or ambivalent infant attachment). Moreover, retrospective attachment security displays construct validity with regard to maternal sensitivity in parent–child interaction. Grossmann and her colleagues also reported that secure retrospective attachment was associated with higher levels of maternal acceptance, responsiveness, and adaptability in naturalistic observations.

Each AAIQ protocol was scored by two graduate students in clinical psychology who were uninformed about all other data. Several sample protocols were initially scored by both coders until a level of 90% agreement across protocol sentence ratings was achieved. Interrater agreement was 86% ($\kappa = .74$) for the major retrospective attachment classifications (i.e., secure vs. insecure). Differences were resolved by conferencing.

Brief Symptom Inventory (BSI). Depressive symptomatology was assessed with the 6-item Depression scale of the Brief Symptom Inventory (Derogatis, 1993). The BSI is a 53 item self-report questionnaire that assesses several psychological symptom patterns for both psychiatric and nonpatient respondents. For the Depression scale, respondents are asked how much they have been distressed by symptoms such as "thoughts of ending your life," "feeling lonely," and "feeling hopeless about the future" during the past 7 days. Mothers responded to each item on a 5-point continuum ranging from 1 (*not at all*) to 5 (*extremely*).

Derogatis (1993) observed an internal consistency coefficient of .85 for the Depression scale using a sample of 719 psychiatric outpatients. Cronbach's alpha for this scale for the present sample was .83. BSI scale scores have displayed convergent validity with the SCL–90–R and the MMPI, and the instrument has been used to assess psychological distress and symptomatology in more than 200 published reports (Derogatis, 1993).

Perceived Social Support Scale (PSSS). The Perceived Social Support Scale (Procidano & Heller, 1983) is a measure of the extent to which respondents perceive that their needs for support, information, and feedback are fulfilled by friends and family. The first 20 items of the questionnaire are completed with respect to family, and the second 20 items are answered with respect to support provided by friends. Sample items include: "My friends enjoy hearing about what I think," and "My family gives me the moral support I need." Items are answered *Yes* (1), *No* (0), or *Don't know* (0); possible scores range from 0 to 40.

Whereas Procidano and Heller (1983) observed an internal reliability coefficient of .89 in their standardizing sample, Cronbach's alpha for the social support scale in the present study was .92. PSSS scores have been reported to be significantly negatively correlated with psychological symptomatology (including depression). In addition, participants' perceptions of their social support networks have been found to be predictive of the amount of disclosing behavior exhibited with friends (Procidano & Heller, 1983).

Dyadic Adjustment Scale (DAS). The Dyadic Adjustment Scale (Spanier, 1976) is a brief, 32-item scale that provides reliable and valid measures of global and specific indices of marital satisfaction. Sample items include: "How often do you and your mate work together on a project?" and "Do you kiss your mate?" Spanier (1976) established a Cronbach's alpha for the global Dyadic Adjustment index of .96. Cronbach's alpha in the present investigation was .95. DAS scores have been found to correlate highly with other self-report marital satisfaction instruments, and have successfully discriminated between divorced and married respondents.

Parent Temperament Questionnaire (PTQ). Maternal perceptions of child temperament were assessed with an abbreviated version of the Parent Temperament Questionnaire (Thomas & Chess, 1977). Using a 7-point scale, mothers rated the frequency of 40 behavioral items that assess the 5 temperament dimensions of mood, intensity, rhythmicity, approach/withdrawal, and adaptability. A rating of 1 indicates that the behavior is "hardly ever" observed, whereas a rating of 7 suggests that the child "almost always" exhibits the behavioral characteristic. A global

temperament score, derived from the sum of these dimensions, provides a continuous index of the range of temperament and varied from extremely difficult (low scores) to easy (high scores).

Internal consistency reliabilities have been reported to range from .56 to .72 for the individual temperament scales (Sheeber & Johnson, 1992). Cronbach's alpha for the global temperament score in the present study was .79. Dimensions of temperament as assessed by the PTQ have been related to children's behavioral problems, behavioral observations of parent–child interaction, maternal distress, and quality of spousal relationships (Earls, 1981; Gordon, 1983).

Parent–Child Interaction Play Assessment (P–CIPA). Maternal and child behavior during the videotaped interaction tasks were rated with the Parent–Child Interaction Play Assessment system (Smith, 1991). The P–CIPA consists of 19 categories of behavior that are scored along a 5-point continuum, representing a low-to-high progression for the particular behavior. Scales assessing maladaptive behavior were recoded so that higher values represented more adaptive behavior for all categories.

Ten P–CIPA scales assessed parent behavior in the structured and unstructured episodes: positive maternal affect, amount of interfering, amount of praise during unstructured tasks, amount of praise during structured tasks, maternal attention, developmental sensitivity, maternal responsiveness to child's initiatives, mother–child involvement, clarity of commands, and mother's follow-through with commands. Categories that measured maternal control were rated exclusively during the structured episode (Cronbach's α = .68), whereas those scales which assessed maternal involvement were rated during the unstructured interaction (Cronbach's α = .71). Levels of maternal involvement and control were significantly interrelated even though these factors were derived from different segments of the behavioral interaction task, $r(73)$ = .42, $p < .01$. An overall index of maternal authoritativeness (Baumrind, 1973) that incorporated measurements of both maternal warmth and control was computed by adding these 10 P–CIPA scale scores. Cronbach's alpha for the maternal authoritativeness index used in this investigation was .74.

Seven P–CIPA scales assessed children's behavior in the structured and unstructured episodes: child social responsivity, aggressiveness during unstructured tasks, aggressiveness during structured tasks, child responsiveness to mother's interaction, child responsiveness to questions, level of compliance, and level of willfulness. Scales that were rated during the unstructured episode generally measured children's social responsivity (Cronbach's α = .72), whereas categories scored during the structured tasks emphasized children's compliance (Cronbach's α = .89). Aggregated scale scores for the two segments were significantly associ-

Table 1. Means, Standard Deviations, and Correlations Among Study Variables

Variable	1	2	3	4	5	6	7	M	SD
1. Retrospective attachment security[a]	—							0.56	0.50
2. Depressive symptoms	-.07	—						0.66	0.70
3. Social support	.37**	-.51**	—					29.95	8.27
4. Marital satisfaction	-.08	-.53**	.44**	—				108.73	19.58
5. Easy child temperament	.13	-.29*	.16	.16	—			195.79	20.52
6. Prosocial child behavior	.12	-.12	.24*	.05	.17	—		31.62	2.58
7. Socioeconomic status	.30**	-.08	.31**	.24*	.05	.13	—	68.05	25.73
8. Maternal authoritativeness	.25*	-.18	.41**	.26*	.23	.37**	.33**	39.25	4.05

[a] 0 = insecure retrospective attachment; 1 = secure retrospective attachment.

* $p < .05$. ** $p < .01$.

ated, $r(73) = .26$, $p < .05$. An overall index of prosocial child behavior was computed by adding these seven child-focused P–CIPA category scores to maximize the variability within this scale. Cronbach's alpha for the prosocial child behavior index in the present study was .77.

The P–CIPA coding system was derived from the categories of the well-validated Response-Class Matrix (Mash, Terdal, & Anderson, 1973). Whereas the Response-Class Matrix requires two raters to combine their observations to produce a complete set of data for one mother–child dyad, the P–CIPA adapts this coding system so that only one observer is needed to produce complete data. P–CIPA scale scores have demonstrated criterion-related validity through their convergence with scores from the aggression and hyperactivity scales of the Achenbach Child Behavior Checklist (Smith, 1991).

Each videotaped interaction was coded by two advanced undergraduate students in psychology, both of whom were uninformed about all other information regarding the participants. Pearson correlations were .79 for maternal authoritativeness and .81 for prosocial child behavior. These coefficients are roughly commensurate with those established by Smith (1991), who reported an average Pearson product–moment correlation of .83 between raters across all P–CIPA scales.

RESULTS

Descriptive Statistics

Table 1 presents means and standard deviations for study variables as well as their intercorrelations. Means and standard deviations for these measures approximated those delineated in previous investigations. Indices of depressive symptoms, social support, marital satisfaction, prosocial child behavior, and maternal authoritativeness displayed mild to moderate skew, and were subsequently transformed using a square root procedure in the following analyses. In addition, retrospective attachment security was coded as a dummy variable (0 = insecure retrospective attachment, 1 = secure retrospective attachment) for statistical analyses.

Correlational Analyses

Correlations with demographic variables. No statistically significant correlations emerged between maternal age, paternal age, paternal education, child sex, or child birth order and the psychosocial variables (i.e., retrospective attachment security, depressive symptoms, perceived social support, marital satisfaction, easy child temperament, maternal authoritativeness, and prosocial child behavior). However, level of ma-
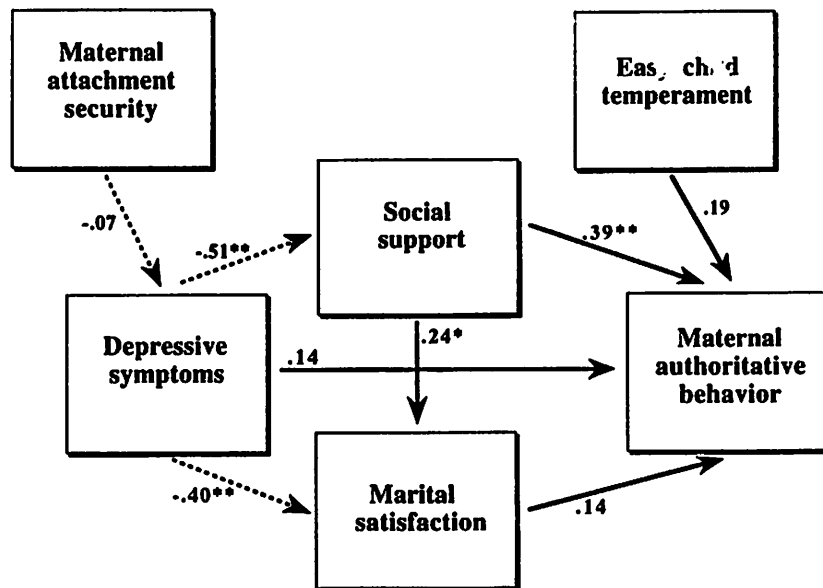
* p < .05.　** p < .01.

Figure 2. Path model predicting maternal authoritativeness.

ternal education was significantly associated with retrospective attachment security, $r(73) = .28$, $p < .05$; highly educated mothers were more likely to have a positive representation of their childhood relationships with their parents than were less educated mothers. In addition, SES was significantly correlated with many of the psychosocial variables (see Table 1).

Relations among psychosocial variables and outcome measures. Significant negative correlations were found between mothers' perceptions of their present social relationships (i.e., marital satisfaction and social support from friends and family) and self-reported feelings of depression. Women who endorsed a greater number of depressive symptoms also were less satisfied with their marriages, and felt that they did not receive the support that they need from friends and family. Relatively fewer associations were found between the quality of mothers' relationships with their own parents and their current psychological and interpersonal functioning; however, retrospective attachment security was significantly correlated with perceived social support. In addition, two statistically significant relations were found between maternal and child characteristics (i.e., maternal depression was negatively correlated with child

temperamental e.... and level of social support was positively associated with prosocial chiiu behavior). Finally, significant bivariate correlations were found betv-een maternal a ‥horitative behavior and retrospective attachment security, perceived social support, marital satisfaction, and prosocial child behavior. Although depressive symptomatology and easy child temperament were associated with maternal authoritativeness in the anticipated directions, these findings did not achieve significance.

Evaluation of the Mediated Model

A path analysis was conducted to evaluate the process model that was derived from Belsky's conceptual framework. This path diagram is presented Figure 2. Numbers shown are standardized regression coefficients (βs), solid lines represent positive relations, and dashed lines indicate inverse relations.

To assess the overall goodness of fit of the path model, the generalized squared multiple correlation of the saturated model was compared to that of the overidentified model. This ratio, when evaluated in light of the number of participants in the sample and the number of path coefficients hypothesized to equal zero, was then tested for significance as a chi-square statistic. The nonsignificant chi-square that was obtained indicated a good fit to the data, $\chi^2 (7, N = 73) = 9.10$, $p = .25$.

Mothers' perceived social support was the only variable that had a statistically significant association with maternal authoritativeness when other predictors were controlled, $R^2 = .21$, $F(4, 68) = 4.62$, $p < .01$, for the regression equation predicting maternal authoritativeness. Mothers who reported that they received higher levels of support from their friends and family were more likely to express warmth toward their young children and demonstrate effective control. Consistent with Belsky's conceptual model, depressive symptoms negatively predicted both perceptions of social support and marital satisfaction at statistically significant levels. However, several other pathways advanced in the path model were not empirically confirmed. Retrospective maternal attachment security was unrelated to maternal reports of depressive symptomatology. Similarly, perceived child temperamental ease was not predictive of maternal authoritativeness at a statistically significant level.

Analysis of Unique and Additive Effects

An examination of how characteristics of parents, children, and the family context collectively relate to parenting styles complemented the path analysis that focused on mediated relations among these constructs. Table 2 summarizes a hierarchical regression analysis in which mater-

Table 2. Summary of Hierarchical Regression Analysis for Variables Predicting Maternal Authoritativeness

Variable	B	SE B	β
Step 1 (Parent predictors)			
Retrospective attachment security	.24	.11	.24*
Depressive symptoms	−.30	.21	−.17
Step 2 (Child predictors)			
Prosocial child behavior	.05	.02	.32**
Easy child temperament	.12	.11	.12
Step 3 (Context predictors)			
Marital satisfaction	.02	.02	.15
Social support	.04	.03	.22
Socioeconomic status	.16	.11	.17
Step 4 (Interaction term)			
Attachment security × Social support	.09	.04	.57*

Note. R^2 = .09. $p < .05$ for Step 1. ΔR^2 = .12, $p < .01$ for Step 2. ΔR^2 = .11, $p < .05$ for Step 3. ΔR^2 = .04, $p < .05$ for Step 4.

nal, child, and contextual variables were entered in several steps to predict mothers' authoritative behavior. Although Belsky did not incorporate socioeconomic indicators into his theoretical framework, SES was included as a predictor in this analysis because (a) other investigators have reported that it has a major impact on parenting (e.g., Simons et al., 1993), and (b) SES had a significant bivariate correlation with maternal authoritativeness in preliminary analyses. For similar reasons, the index of observed prosocial child behavior was also included. To examine moderated relations, three interaction terms (i.e., Depression × Temperamental ease, Depression × Social support, and Retrospective attachment security × Social support) that have been found in past research to be associated with parenting styles were provisionally incorporated in the regression analyses. These interaction terms were tested individually to limit problems associated with multicollinearity and to maintain statistical power. Only the Retrospective attachment security × Social support interaction increased the explained variance in the equation; as such it was retained in the final regression analysis that appears in Table 2.

Results from this analysis indicated that each theorized antecedent domain (i.e., parent, child, and social context) made a unique and statistically significant contribution to maternal authoritativeness as evidenced by the significant change in R^2 after each step. In sum, these 8 predictors accounted for 36% of the variation in mothers' parenting
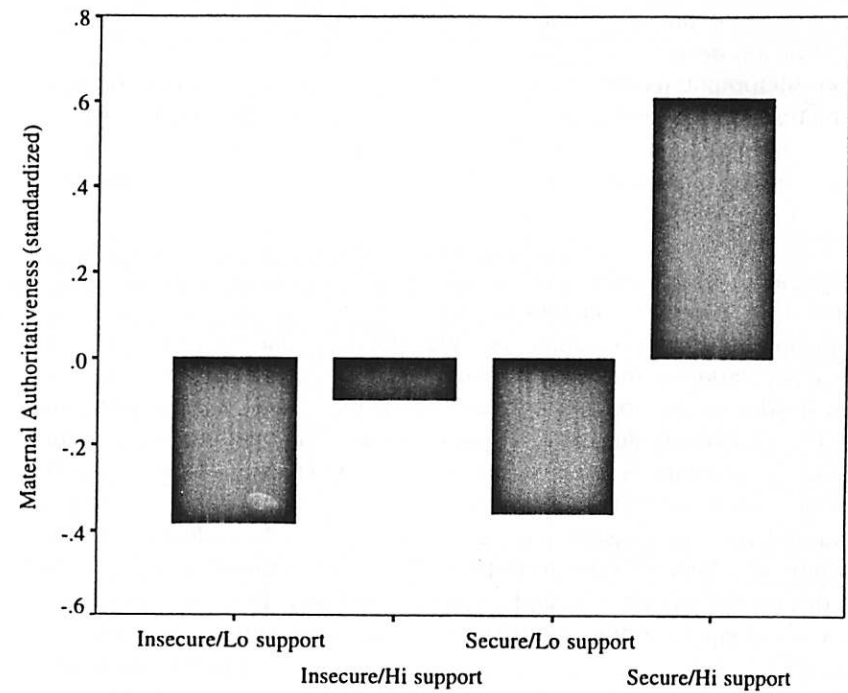
Figure 3. Maternal authoritativeness as a function of mothers' retrospective attachment security and social support.

behaviors, $F(8, 64) = 4.58$, $p < .001$. Power analyses indicated a large sample effect size, ES = .57, and confirmed the use of a sufficient number of cases. In the final step of the regression analysis, social support was found to moderate the relation between retrospective attachment security and mothers' parenting behavior at a statistically significant level. (Note that the p value of the β for the interaction term is artificially deflated and appears less significant than it actually is due to multicollinearity.) The nature of this moderated relationship was clarified by categorizing participants into four groups on the basis of high versus low social support (as determined by a median split) and attachment category (secure vs. insecure). An analysis of variance and subsequent Scheffé test indicated that participants who were in the secure retrospective attachment/high social support group displayed significantly higher levels of authoritative parenting than did mothers in the remaining three groups, $F(3, 69) = 5.91$, $p < .001$ (see Figure 3).

Finally, the additive association of these seven predictor variables with parenting behavior was evaluated by the creation of a "cumulative
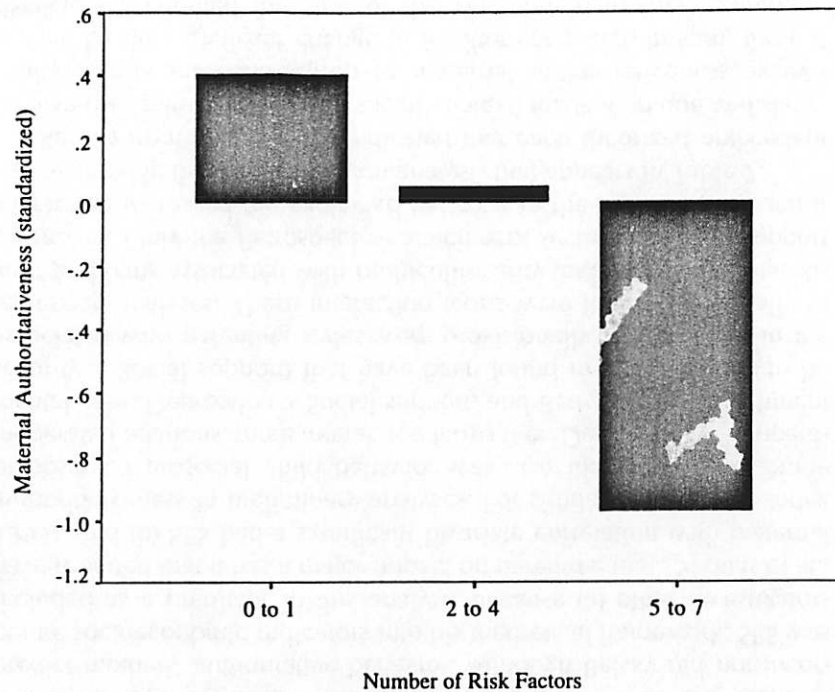
Figure 4. Maternal authoritativeness as a function of the number of risk factors that mothers experienced.

risk score" for each participant. Each continuous predictor variable was classified as a risk factor if the participant's score was at or below the thirty-third percentile for this sample; high risk status for retrospective attachment security (a dichotomous variable) was defined as insecure attachment. This classification procedure closely followed that of previous researchers who have calculated cumulative environmental risk scores using similar continuous ecological variables (see Belsky, 1996; Hannan & Luster, 1991; Sameroff et al., 1993). Mothers were subsequently categorized as low risk (0 or 1 risk factors, $n = 19$), average risk (2 to 4 risk factors, $n = 43$), or high risk (5 to 7 risk factors, $n = 11$). These categorizations also ensured a sufficient number of cases in each group. An analysis of variance and subsequent Scheffé test indicated that risk status was associated with differing levels of maternal authoritativeness, $F(2, 70) = 8.33$, $p < .001$, such that low- and average-risk mothers displayed significantly higher levels of authoritative behavior than did high-risk mothers (see Figure 4).

DISCUSSION

Because cross-sectional data were used in the analyses, causal relations cannot be determined from this investigation. Instead, results document associations among the variables rather than patterns of cause and effect. Despite these caveats, findings from the current study are consistent with Belsky's assertion that parenting is multiply determined by characteristics of parents, children, and the family context.

First, the results support the notion that "more often than not, bad things (or good things) go together when it comes to influences on parenting" (Vondra & Belsky, 1993, p. 2). Theorized maternal, child, and contextual predictors (e.g., marital satisfaction, social support, maternal depression, and child temperament) were intercorrelated at statistically significant levels. This finding is consistent with Bronfenbrenner's (1979) assertion that environmental influences which shape child development are interrelated (i.e., microsystems, mesosystems, exosystems, and macrosystems influence each other in a reciprocal and dynamic manner). Moreover, parenting behavior was related to several characteristics of mothers, children, and the family context. Maternal authoritativeness was significantly correlated with retrospective attachment security, perceived social support, marital satisfaction, prosocial child behavior, and SES.

Second, results from this investigation support Belsky's process model of parenting. The path model displayed a good overall fit to the data and confirmed many of the posited relations among maternal depressive symptoms, social support, marital satisfaction, and parenting behavior. Nevertheless, several conceptual assertions were not supported. For example, child temperament was not significantly related to maternal authoritativeness as expected. This finding, however, is consistent with Belsky's empirical studies on father–child relationships as well as other past research on child temperament and maternal behavior. Similarly, Belsky hypothesized that the influence of parents' developmental histories on child caregiving would be mediated by parents' psychological functioning; however, neither link in this mediated chain was statistically significant.

Third, each set of concurrently-assessed parent, child, and contextual-level variables was uniquely related to the quality of mother–child interaction when other factors were controlled. That is, the successive inclusion of parent, child, and contextual-level characteristics permitted a more precise statistical prediction of levels of maternal authoritativeness. Using multivariate frameworks, researchers in the past have documented associations between contextual variables and parenting behavior using

different populations (i.e., infants or fathers). For inst. ice, Hannan and Luster (1991) reported that maternal, contextual, a-d child factors accounted for 28% of the variance in mothers' inter .ctions with their infants. Because their selection of indeperdent va- ables was dictated by the data available in the N?tional Longitudinal Survey of Yo' '. Hannan and Luster operationalized Belsky's constructs in a differend ma; ner than in the current investigation. Nevertheless, the quality of the home environment that mothers provided for their infants was uniquely related to maternal intelligence, maternal age at first birth, presence of a partner, number of children, family income, and infant temperament. Similarly, Belsky and his associates have found in longitudinal investigations that fathers' child caregiving was predicted by their personal characteristics (i.e., paternal self-esteem, extroversion, and neuroticism) and aspects of the social context (i.e., SES, marital relationship quality, and social support), but not by child characteristics (i.e., temperament). These findings were documented for fathers' interactions with both infants (Volling & Belsky, 1991) and toddlers (Woodworth et al., 1996).

However, patterns of statistically significant associations differed between the mediated model and the hierarchical regression analysis in the present investigation. In the path analysis, perceived social support was the only variable that had a significant association with maternal authoritativeness when other predictors as postulated in Belsky's (1984) process model were controlled. Variables with proposed indirect effects on parenting (e.g., mothers' developmental histories) and variables that were not explicitly incorporated into Belsky's process model (e.g., SES) were not entered as predictors of maternal authoritativeness in the path analysis. On the other hand, the hierarchical regression analysis examined a greater number of predictor variables and focused on moderated relations among these constructs.

One intriguing finding that emerged in the regression analysis was that the association between social support and maternal authoritativeness was attenuated when retrospective attachment security also was evaluated as a predictor variable. That is, the relation between maternal retrospective attachment security and authoritative parenting was moderated by social support. Mothers who displayed relatively high levels of authoritativeness were more likely to have clear memories of understanding parents and have current social support from friends and family. The presence of supportive childhood memories was insufficient to counteract the effects of inadequate social support. Conversely, the detrimental impact of nonoptimal childhood experiences on mothers' current parenting was not entirely erased by social support. This finding conflicts with previous research showing that current spousal or partner

support greatly buffers the effects of mothers' negative childhood experiences on their interactions with toddlers and preschool-aged children (Belsky, Youngblade, & Pensky, 1989; Crockenberg, 1987). However, mothers in the ins -ure/low support group in the present study did appear to be more authoritative th n those in the insecure/high support group, but this difference did not acnieve statistical significance.

Fourth, the theorized determinants of parenting were found to have an additive association with maternal authoritativeness. Those mothers who experienced a high number of stressors stemming from their personal adjustment, past and present social relationships, and children's behaviors were more likely to demonstrate insensitivity during interactions with their children than were participants who reported fewer stressors. These high-risk mothers displayed significantly lower levels of maternal authoritativeness than both low- and average-risk mothers; however, a significant difference in maternal authoritativeness was not found between the latter two groups. This may imply that parents are able to tolerate a moderate number of personal and environmental challenges (e.g., poor marital satisfaction, low levels of social support, low income) before their parenting is detrimentally affected. Furthermore, it is possible that support derived from one aspect of parents' lives (e.g., a harmonious marriage) may effectively counteract stress generated by another (e.g., difficult child temperament). This interpretation is consistent with Belsky's assertion that parenting is buffered against disruptions from a single source because parental competence is multiply determined. However, parents who experience pervasive distress have fewer resources to draw upon that may insulate their child caregiving against the adversities that they encounter.

Limitations and Future Directions

It is important to note that because all mothers in this investigation were married, and most were European American from generally middle-class backgrounds, it remains unclear whether these results would be replicated in more heterogeneous samples. The assessment of a greater number of participants from more diverse backgrounds would permit greater generalizability of these findings. Similarly, future studies also can address the ecological context of parenting in families with clinic-referred children. Because participants were recruited from the community rather than from mental health-care settings, it is likely that a clinic sample would differ in terms of developmental histories, as well as levels of marital satisfaction, social support, depressive symptomatology, maternal authoritativeness, and prosocial child behavior. Such research

might have greater applicability for intervention services designed for seriously distressed parents and their families.

In addition, several constructs assessed in the present investigation were measured with maternal self-report instruments. Conclusions, therefore, frequently refer to mothers' perceptions of psychosocial phenomena and may contain common sources of error variation. Finally, this study does not resolve patterns of cause and effect. Unidirectional relations were explored in the analyses, but the direction of the specific pathways in the path model was selected because of theoretical interest. It is likely that bidirectional relations between the variables do exist and other configurations of the variables may be empirically supported as well. For example, the path model posited that depressive symptoms influence levels of marital satisfaction, but an equally compelling argument could be made for the opposite effect. Longitudinal investigations would be needed to disentangle patterns of causality in these relations. Whichever particular paths may emerge from future research, the present study underscores the value of conceptualizing parenting processes within an ecological framework.

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