

# Independent and Interactive Contributions of Parenting Behaviors and Beliefs in the Prediction of Early Childhood Behavior Problems

Melissa A. Barnett, Lilly Shanahan, Min Deng,  
Mary E. Haskett, and Martha J. Cox

## SYNOPSIS

**Objective.** This study examined interactions between parenting beliefs and parenting behaviors in the prediction of early childhood externalizing and internalizing symptoms. **Design.** The authors observed sensitive and negative intrusive parenting behaviors during infancy and toddlerhood in conjunction with self-reported maternal beliefs about the importance of discipline/control and concerns regarding spoiling in a community sample of 185 African American and European American mother-child dyads. Multiple regression techniques modeled interactions between parenting self-reported parenting beliefs and observed parenting behaviors to predict mother-reported child internalizing symptoms and mother-reported child externalizing symptoms at 30 and 36 months. The analyses also explored the role of ethnicity as a moderator of these relations. **Results.** The combination of high and average spoiling beliefs and low levels of sensitive parenting was associated with elevated child internalizing symptoms. Negative parenting and beliefs reflecting concerns about spoiling were independent risk factors for elevated child externalizing symptoms. **Conclusion.** Parenting beliefs and behaviors should be considered jointly to identify risks for the development of early behavior problems.

## INTRODUCTION

Internalizing and externalizing symptoms emerge early in life and remain relatively stable throughout childhood and adolescence (e.g., Angold & Egger, 2007; Campbell, Shaw, & Gilliom, 2000). Parenting behaviors and beliefs have been reliably linked to behavior problems in school-aged children (e.g., Campbell et al.; Shaw, Gilliom, Ingoldsby, & Nagin, 2003), but few investigations have simultaneously studied the independent and joint contributions of parenting beliefs and behaviors in the prediction of young children's adjustment or whether the nature of these relations varies across ethnic contexts (e.g., Deater-Deckard & Dodge, 1997; Lau, Litrownik, Newton, Black, & Everson, 2006). Understanding how parenting behaviors and beliefs independently and jointly contribute to adjustment in socioeconomically and ethnically diverse young children could help to identify subgroups most at risk for the development of early behavior problems.

### Parenting Behaviors and Parenting Beliefs

Early parent-child interactions are important contributors to the development of child behaviors. Research typically focuses on one of two broad domains of parenting:

parenting behaviors or parenting beliefs. In terms of parenting behaviors, early childhood researchers typically examine sensitivity/responsiveness and negativity (e.g., harshness, intrusiveness, and hostility). Low levels of parental sensitivity/responsiveness, including untimely and inappropriate responses to infant/toddler signals, interfere with emotion regulation development, placing children at risk for increased internalizing (e.g., Briggs-Gowan, Carter, Bosson-Heenan, Guyer, & Horowitz, 2006) and externalizing symptoms (e.g., Campbell et al., 2000). Similarly, parental intrusiveness and hostility are associated with both child internalizing (e.g., Chorpita & Barlow, 1998) and externalizing (e.g., Rubin, Burgess, Dwyer, & Hastings, 2003) symptoms, with the majority of studies focusing on externalizing symptoms and older children.

Most research on parenting beliefs has focused on beliefs that emphasize discipline/control. High discipline/control beliefs are endorsed by parents who view discipline/control as central to their interactions with children. These beliefs may include endorsement of physical discipline, and, generally speaking, reflect a parent-centered approach to parent-child relationships. Parents who hold beliefs that reflect concerns about spoiling a young child might be worried about providing too much attention to a young child. For example, parents with high spoiling beliefs may believe that responding quickly to the cries of an infant will make her too dependent on the parent and ultimately place her at risk for the development of behavior problems (Burchinal, Skinner, & Reznick, 2009). Thus, high spoiling beliefs reflect concerns about being too responsive to child bids for attention and are indicative of risk for unresponsive parenting. Both high discipline/control and high spoiling beliefs of parents have been linked to risks for child maladjustment (e.g., Lau et al., 2006; Smyke, Boris, & Alexander, 2002).

#### Joint Contributions of Parenting Behaviors and Beliefs to Early Childhood Problem Behaviors

Parenting behaviors and parenting beliefs are unlikely to act in isolation. These two aspects of parenting likely serve as proximal contexts for one another: Parenting beliefs may encourage, support, or reinforce the use of specific behaviors, and vice versa (Sigel & McGillicuddy-De Lisi, 2002; Tudge, Hogan, Snezhkova, & Etz, 2000). For example, high spoiling beliefs have been associated with unresponsive parenting in young children (Luster, Rhoades, & Haas, 1989; Smyke et al., 2002). High discipline/control beliefs are associated with harsh and unresponsive parenting behaviors (Bugental & Johnston, 2000; Reis, 1993). Correlations between parenting behaviors and beliefs are typically moderate. Social psychological theory suggests that a person's experience, individual characteristics, and norms of the social groups that he or she is affiliated with influence the strength of the relation between his or her behaviors and beliefs (Ajzen, 2001; Trafimow & Finlay, 2001).

In relation to child adjustment, the co-occurrence (or match) of nonoptimal parenting behaviors and beliefs may pose the greatest risk. In this first scenario, poor parenting behaviors (e.g., harsh parenting) could amplify the effects of suboptimal parenting beliefs (e.g., high discipline/control beliefs) resulting in the highest risk for child problem behaviors (Bugental & Johnston, 2000). Alternatively, inconsistencies (or mismatch) of parenting behaviors and beliefs could present either risk or protection for children. Thus, in a second scenario, positive parenting behaviors could buffer children from negative beliefs and vice versa. For example, among economically disadvantaged African American adolescent mothers of preschool students, high control beliefs were not

linked with child behavior problems when these beliefs were held by parents with low levels of harsh parenting (Weis, 2002). In a third scenario, however, behavior-belief inconsistencies may present the greatest risk for the development of child behavior problems. For example, research on school-age children has shown that children's behavior problems were elevated when parents did not endorse physical punishment but nevertheless used it (Deater-Deckard & Dodge, 1997; McLoyd, Kaplan, Hardaway, & Wood, 2007).

There are several possible reasons why belief-behavior mismatches, as illustrated in the third scenario, may pose a risk for children. The mismatch may be indicative of the following: (1) child effects; for example, parents who do not believe in using harsh discipline may nevertheless use it to parent their child with high negative emotional reactivity (Deater-Deckard, Ivy, & Petrill, 2006); (2) parental characteristics, including parental psychological distress (e.g., high anger reactivity, depression) or low self-efficacy, that cause parents to react in ways they do not intend (Ajzen, 2001; Deater-Deckard & Dodge, 1997); or (3) environmental challenges, such as neighborhood danger, that constrain the ability to respond to the child in a manner consistent with one's beliefs (Weis, 2002). In addition, parenting norms in particular sociocultural contexts may influence associations between parenting behaviors and beliefs with child adjustment. In the next section, we explore the role of social context as a potential moderator of the relation between parenting behaviors and beliefs with child adjustment.

### Parenting Behaviors, Beliefs, and the Role of Social Context in Child Behavior Problems

Parenting behaviors and beliefs are both influenced by and a reflection of context and culture (Bornstein, 2002; Holden & Miller, 1999), and thus the norms as well as the meaning and implications of parenting may vary with ethnicity. For example, among many ethnic minorities, especially African American families, parental control, including emphasis on discipline and avoidance of spoiling, is normative and considered appropriate, responsible parenting that is best for children (Horn, Cheng, & Joseph, 2004; Solomon, Martin, & Cottingham, 2003). Greater parental control may play a central role in shielding African American children from stressors associated with societal disadvantages that are commonly associated with ethnic minority status (Garcia Coll et al., 1996; McLoyd, 1998). Because of sociocultural models emphasizing the value of parental control, the match between high discipline/control beliefs and intrusive or harsh parenting behaviors is less consistently linked with child behavior problems in African American families compared with European American families (e.g., Whaley, 2000). However, most studies do not actually measure parental beliefs regarding discipline/control; rather these beliefs or values are assumed to underlie parenting behaviors that emphasize control. Similarly, high spoiling beliefs are more commonly endorsed in the African American community (Burchinal et al., 2009; Horn et al.), and their match with negative parenting behaviors may not be as detrimental in African American compared to European American families (e.g., Deater-Deckard & Dodge, 1997). Pairing culturally prevalent beliefs (e.g., concerns about spoiling) with developmentally appropriate parenting behaviors (e.g., sensitive parenting) may lead to positive child adjustment.

Taken together, whether the match or mismatch of parenting behaviors and beliefs is protective for children or poses a risk for maladjustment may depend on the sociocultural

norms that are primarily endorsed in one's cultural context and ethnicity. Few researchers have explored whether parenting behaviors and beliefs interact to differentially influence early childhood adjustment among socioeconomically diverse European American and African American samples. In the present study, we examine these links.

### Study Goals

The goal of this study was to examine the independent and joint contributions of maternal parenting behaviors and beliefs to child internalizing and externalizing symptoms during early childhood. We tested competing hypotheses. First, a match of suboptimal parenting behaviors and beliefs (high negative intrusive parenting with high discipline/control beliefs or high spoiling beliefs; low sensitive parenting with high discipline/control beliefs or high spoiling beliefs), will be linked with young children's elevated internalizing or externalizing symptoms. Second, a mismatch between parenting behaviors and beliefs could be a risk factor or, alternatively, a buffer for child maladjustment. We also examined whether the relation between child adjustment and interactions between parenting behaviors and beliefs vary by ethnicity, controlling for socioeconomic risk. Specifically, we explored the extent to which ethnicity may influence whether the match and mismatch between parenting behaviors and beliefs is detrimental for child adjustment. Because studies of independent and interactive contributions of parenting beliefs and behaviors are rare in samples of young African American and European American children, we did not have firm expectations regarding ethnic differences.

## METHOD

### Participants

Participants were drawn from the Durham Child Health and Development Study, a longitudinal study of early child development in a socioeconomically and ethnically diverse sample living in and around a mid-sized southeastern city. Families were recruited within the first 3 months of the child's birth through phone contact via birth record searches and through fliers and advertisements. Of the original 206 families participating in the 6-month assessment, 185 families were included in our analyses because they had complete data for at least two of the mother-child interaction tasks at 6, 12, and 24 months, and at least one of the child behavior problem reports at 30 and 36 months. We found that *t* tests of mean differences revealed these families did not differ from excluded families in terms of income, education, parenting behaviors, or child internalizing and externalizing symptoms. The present sample was 57% ( $n = 102$ ) African American and 43% ( $n = 77$ ) European American. Approximately half ( $n = 91$ ) of the children were girls, and 46% were the mother's firstborn child. Of the mothers, 58% had at least some college education, 32% had a high school diploma or a GED, and 10% had no high school degree. The mean income-to-needs ratio was 2.9 ( $SD = 2.6$ ), ranging from .02 to 6.20 at the 6-month assessment. Income-to-needs ratios that are greater than 1.0 indicate that a family is able to provide for basic needs; ratios that are less than 1.0 indicate that the family is earning an insufficient income to meet basic costs of living.

## Procedure

Data were collected during a home visit when children were 6 months old and during laboratory visits when children were 12, 24, 30, and 36 months of age. During the 6- and 12-month visits, the mother and child participated in a filmed semi-structured 10-min dyadic free-play interaction with a standard set of toys. The mother was instructed to play with the child as she normally would. During the 24-month visit, the mother and child participated in a widely used 10-min puzzle task. The dyad sat at a table, and the mother was told that the child should complete the puzzle, but the mother could give any help she deemed necessary. This task presented a mild challenge while providing an opportunity to see the extent to which the mother could provide sensitive support for the child's autonomous efforts versus intruding on the child's efforts. Each time the dyad completed a puzzle, a more challenging puzzle was introduced, with a maximum of three puzzles.

## Measures

*Parenting behavior.* From the filmed 10-min interactions described above, trained observers made global observational ratings of maternal behavior at each wave on 7 scales revised from scales developed in the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care (National Institute of Child Health and Human Development Early Child Care Research Network, 1999): sensitivity/responsiveness, intrusiveness, detachment/disengagement, positive regard for the child, negative regard for the child, animation, and stimulation of development. For the 6- and 12-month free-play tasks, maternal behavior was rated using 5-point global rating scales (Cox & Crnic, 2002). For the 24-month puzzle task, maternal behavior was rated using 7-point global scales (Cox, 1997), and scores were converted to 5-point scales to attain metric consistency across time, with 1 = no evidence for the specific parenting behavior (e.g. intrusiveness), to 5 = the behavior is highly characteristic of the parent during the observed interaction. Although the coding systems at the earlier and later waves were slightly different, the parenting behaviors included in the present analysis were identical across waves.

At each wave, trained reliable coders, who were blind to other information about the families, scored the interactions for maternal behavior. Two lead graduate student coders trained all other coders until acceptable reliability (intercoder reliability [ICC] > .80) was maintained for each coder on every scale. Once acceptable reliability was reached, coders coded in pairs while continuing to code at least 20% of cases with a lead coder. At 6 months and 12 months, all interactions were coded by two coders. Each coding pair met to reconcile scoring discrepancies, reaching a final consensus score for each scale. At 24 months, two highly experienced coders double-coded 30% of randomly selected cases and reached consensus scores; they single-coded the rest. One graduate student coded parent behavior at every wave to maintain consistency across time.

We conducted an exploratory factor analysis of maternal behavior followed by an oblique (promax) rotation to inform the reduction of the number of variables analyzed and to characterize maternal behavior parsimoniously. This factor analysis suggested the existence of two distinct, relatively independent composites. We calculated the sensitivity composite as the mean of sensitivity/responsiveness, the reverse score for detachment/disengagement, positive regard, stimulation of development, and animation. High scores reflect parenting behaviors that are responsive, warm, child-centered, stimulating, and involved. We calculated the negative intrusiveness composite as the

mean of intrusiveness and negative regard, with high scores reflecting harsh, parent-centered, and affectively negative parenting behaviors.

We calculated negative intrusiveness and sensitivity composites at each wave. Average ICC across all pairs of coders for the negative intrusive composite were .81 at 6 months, .80 at 12 months, and .86 at 24 months. Average reliabilities across all pairs for the sensitivity composite were .87 at 6 months, .88 at 12 months, and .93 at 24 months. Stabilities over the 6-, 12-, and 24-month periods for sensitive parenting ranged from  $r_s = .56$  to  $.67$ ,  $ps < .001$ , and stabilities of harsh intrusiveness ranged from  $r_s = .48$  to  $.64$ ,  $ps < .001$ . Given this consistency, the means of negative intrusive parenting and sensitive parenting across the three waves were used in the present analyses.

*Parenting beliefs.* During the 6-month visit, mothers responded to an adapted shortened version (Hogan & Tudge, 1994) of the Parental Beliefs Survey (PBS; Luster et al., 1989), which measures parenting beliefs regarding effective and desirable parenting practices. Parents rated 45 items on a 6-point scale ranging from 1 (*strongly agree*) to 6 (*strongly disagree*). In the present analyses, we included two subscales. The discipline and control subscale ( $\alpha = .68$ ) consists of four items measuring the extent to which parents emphasize the importance of controlling and disciplining children. Sample items include "The most important task of parenting is disciplining the child" and "Parents should be strict with their one year old babies or they will be difficult to manage later on." Higher scores reflect greater endorsement of the importance of discipline and control in the parent-child relationship. The concern for spoiling subscale consists of 7 items ( $\alpha = .84$ ) assessing the degree to which parents are concerned about spoiling children by giving them too much attention. Sample items include "It is likely you will spoil a baby if you respond to most of his/her cries" and "A mother can spoil her baby by giving him/her a great deal of attention." Higher scores reflect greater concerns about spoiling children. Although there have been few empirical studies of the stability of these particular sets of parenting beliefs, parenting values and attitudes are generally more consistent over time than specific observed parenting behaviors (Holden & Miller, 1999).

*Maternal psychological distress.* The Brief Symptom Inventory-18 (BSI-18; Derogatis, 2000) was administered to mothers at 6, 12, and 24 months. The BSI is a widely used 18-item self-report symptom checklist; each item is rated on a 5-point scale of distress ranging from 0 (*not at all*) to 4 (*extremely*). The BSI-18 has three subscales (somatization, anxiety, and depression), and a global severity index (GSI) is calculated by summing the scores of each subscale. Higher scores indicate higher levels of self-reported psychological distress. We used GSI scores from the 24-month wave because the scores were stable over time (at 6, 12, 24 months), and maternal psychological distress was not measured at later waves.

*Sociodemographic risk.* We created a cumulative risk index as a parsimonious control for all sociodemographic risk. Specifically, we included sociodemographic factors that have been linked to higher levels of negative parenting, lower levels of sensitive parenting, and elevated risk for child behavior problems: low maternal education (1 = less than high school), low income-to-needs ratios (1 = less than 1.5), single-mother (1 = no husband or cohabiting partner) household status, and maternal age (1 = younger than 21 years) at the birth of the child. Because these risk factors were highly stable over time from 3 months (study enrollment) through 36 months (child outcome), we calculated the mean of each indicator over time and summed the means of all indicators, with higher scores indicating higher socioeconomic risk.

*Child internalizing and externalizing symptoms.* We used the Child Behavior Checklist for Ages 1½–5 (Achenbach & Rescorla, 2000) to assess child internalizing and externalizing symptoms at 30 and 36 months. Mothers rated their child using 3-point scales on 99 items describing child behavior currently or within the past 2 months. Following standard procedures, we calculated an index of child internalizing symptoms by summing scores from the withdrawn, somatic problems, emotionally reactive problems, and anxious/depressed syndrome items. We calculated a child externalizing score by combining aggressive and attention syndrome items. Because child internalizing symptoms,  $r = .55, p < .001$ , and child externalizing symptoms,  $r = .68, p < .001$ , were stable from 30 to 36 months, we used the means of child internalizing and externalizing from 30 and 36 months as independent variables.

### Analytical Plan

We conducted OLS multiple linear regression analyses and included child gender and sociodemographic risk as control variables. We also included maternal psychological distress as a control variable because of potential associations with maternal reports of parenting beliefs and child behavior problems. One set of models used sensitive parenting behaviors, the two dimensions of parenting beliefs, and ethnicity to interactively predict child externalizing and child internalizing symptoms. A second set of models used negative parenting and the two dimensions of parenting beliefs to predict child internalizing and externalizing symptoms. Multicollinearity prohibited including both dimensions of parenting behaviors into one model because the composites were negatively correlated,  $r = -.56, p < .001$ .

All together, we conducted four sets of analyses: two models predicting child internalizing symptoms and two models predicting child externalizing symptoms. First, we examined the independent and joint role of parenting behaviors and beliefs in the prediction of child symptoms. To test the independent effect of parent beliefs on child symptoms and thus address the assumption that the relation between parenting beliefs and child behaviors is largely accounted for by the association of beliefs with specific behaviors (e.g., Bugental & Johnston, 2000; Smyke et al., 2003), we first tested for the relation between parent behaviors and child symptoms, and then examined the contribution of parenting beliefs to child behaviors net the influence of parent behaviors. Following an initial model that included covariates, the second model included parenting behaviors, followed by a third model that added parenting beliefs. Next, we tested interactions between parenting behaviors and beliefs. Last, we tested three-way Parenting Behaviors  $\times$  Parenting Beliefs  $\times$  Ethnicity interactions. We tested the three-way interaction terms separately for discipline/control and concerns about spoiling beliefs. All predictors were centered before calculating interaction terms and probing significant interactions.

## RESULTS

### Descriptive Statistics and Bivariate Correlations

We examined descriptive statistics separately by ethnicity to determine whether demographic patterns were confounded with ethnicity (see Table 1). As a whole, African American mothers in the sample were more disadvantaged than European

**TABLE 1**  
Means and Standard Deviations by Ethnic Group and the Total Sample

Variable	African American ( <i>n</i> = 100)		European American ( <i>n</i> = 85)		Total ( <i>N</i> = 185)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Demographic risk	1.22	1.24	.62	.84	1.01	1.34
Child gender <sup>a</sup>	.48	.50	.62	.50	.51	.50
Psychological distress (24 months)	47.12	8.96	47.98	7.16	47.50	8.22
Negative parenting <sup>b</sup>	2.70	.79	2.00	.57	2.40	.78
Sensitive parenting <sup>b</sup>	2.66	.77	3.22	.58	2.99	.79
Discipline beliefs (6 months)	3.48	1.08	3.11	1.05	3.31	1.08
Spoiling beliefs (6 months)	2.78	1.18	2.14	.96	2.49	1.13
Child externalizing symptoms <sup>c</sup>	46.33	9.42	47.27	8.76	46.75	9.12
Child internalizing symptoms <sup>c</sup>	44.50	9.25	43.74	6.77	44.16	8.23

Note. <sup>a</sup>Child gender was coded "0" for female and "1" for male.

<sup>b</sup>Observed Parenting: mean of scores observed at 6, 12, and 24 months.

<sup>c</sup>Child symptoms: mean of mother ratings at 30 and 36 months.

American mothers,  $t(184) = 2.26, p = .02$ . It is important to note that the distribution of low risk is fairly even across ethnicity, with 30% of the African Americans and 35% of the European Americans reporting 0–1 socioeconomic risks. However, less than 4% of the European American mothers scored 3–4 on the risk index versus 15% of the African American mothers. Thus, among African Americans in the sample, risk is somewhat evenly distributed; however, African American families were more disadvantaged than European American families. African American mothers reported higher mean beliefs regarding the importance of discipline and control,  $t(184) = 2.34, p < .05$ , and higher mean beliefs regarding concerns about spoiling,  $t(184) = 3.92, p < .001$ , than did European American mothers. There were no ethnic differences in mean child internalizing and externalizing symptoms,  $ts(184) = .62$  and  $.57, ns$ , respectively.

Table 2 shows the correlations among all variables included in the analyses for the whole sample. Examination of correlations separately by ethnicity revealed similar patterns of associations. Beliefs regarding discipline/control and spoiling were positively correlated, meaning that with increasing beliefs in the importance of discipline and control, concerns about spoiling a child also tended to increase. Both sets of beliefs were correlated with parenting behaviors such that higher discipline/control and spoiling beliefs were linked to higher levels of negative and lower levels of sensitive parenting. Ethnicity was significantly correlated with spoiling beliefs, with African Americans reporting higher concerns about spoiling beliefs. Demographic risk was significantly correlated with each independent variable (except child gender). The results for the models predicting child internalizing and externalizing symptoms with sensitive parenting are presented first, followed by results for the models predicting child internalizing and externalizing from negative parenting behavior.

### Sensitive Parenting Behavior

*Child internalizing symptoms.* In Table 3, Columns 2 and 3 summarize the coefficients for the final regression models (Models 4) predicting child internalizing symptoms from



**TABLE 2**  
Bivariate Correlations Among Independent and Dependent Variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Child externalizing	—									
2. Child internalizing	.55***	—								
3. Discipline beliefs	.22**	.23**	—							
4. Spoiling beliefs	.29***	.29***	.46***	—						
5. Negative parenting	.16*	.14	.32***	.27***	—					
6. Sensitive parenting	-.13	-.14	-.32***	-.30***	-.56***	—				
7. Psychological distress	.47***	.43***	.21**	.19*	.01	-.06	—			
8. Ethnicity	.05	-.05	-.14	-.22**	-.44***	.41***	.05	—		
9. Demographic risk	.08	.14	.29***	.25***	.53***	-.59**	.15*	-.32***	—	
10. Child gender	.12	.03	-.01	.03	.01	-.02	.09	.08	-.01	—

Note. Ethnicity was coded "0" for African American and "1" for European American. Child gender was coded "0" for female and "1" for male.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ , two-tailed.

sensitive parenting. The base model (Model 1) regressing child internalizing symptoms on potential confounds, child ethnicity, socioeconomic risk, child gender, and maternal psychological distress accounted for a significant portion of the observed variance in child internalizing symptoms,  $F(5,180) = 10.82$ ,  $p < .001$ , adjusted  $R^2 = .18$ . Maternal psychological distress was positively associated with child internalizing symptoms. The addition of sensitive parenting as a predictor in Model 2 failed to improve the model fit or reveal a significant association between sensitive parenting and child internalizing symptoms. Model 3 introduced parenting beliefs, yielding a statistically significant improvement in model fit,  $\Delta R^2 = .01$ ,  $p < .05$ . Mothers who expressed more concerns regarding spoiling reported higher child internalizing symptoms,  $\beta = .17$ ,  $p < .05$ . Model 4 included interactions between parenting beliefs and sensitive parenting, producing a significant improvement in the accounted for variance in child internalizing symptoms,  $\Delta R^2 = .01$ ,  $p < .05$ . There was evidence of a significant interaction between sensitive parenting and beliefs regarding concerns about spoiling. This interaction was probed by testing the simple slopes of the lines defining the relation between sensitive parenting behavior and child internalizing symptoms when beliefs pertaining to concerns about spoiling were 1 *SD* less than the mean, at the mean, and 1 *SD* greater than the mean (Aiken & West, 1991). Figure 1 shows that higher levels of sensitive parenting were associated with lower levels of child internalizing symptoms only when mothers reported concerns about spoiling at the mean,  $b = -.73$ ,  $p < .05$ , and 1 *SD* less than the mean,  $b = -2.56$ ,  $p < .05$ . Thus, sensitive parenting was only protective from child internalizing symptoms if mothers did not believe that providing too much attention to a young child would be harmful. There was no evidence that this interaction varied by ethnicity, and thus, in Table 3, we did not include the three-way interaction terms among sensitive parenting, beliefs, and ethnicity.

*Child externalizing symptoms.* In Table 3, Columns 5–7 show results for the final model (Model 4) predicting child externalizing behaviors with sensitive parenting. The base model (Model 1) predicting child externalizing from child ethnicity, sociodemographic risk, child gender, and maternal psychological distress accounted for a significant portion of the observed variance in child externalizing symptoms,  $F(4,181) = 13.56$ ,  $p < .001$ ,

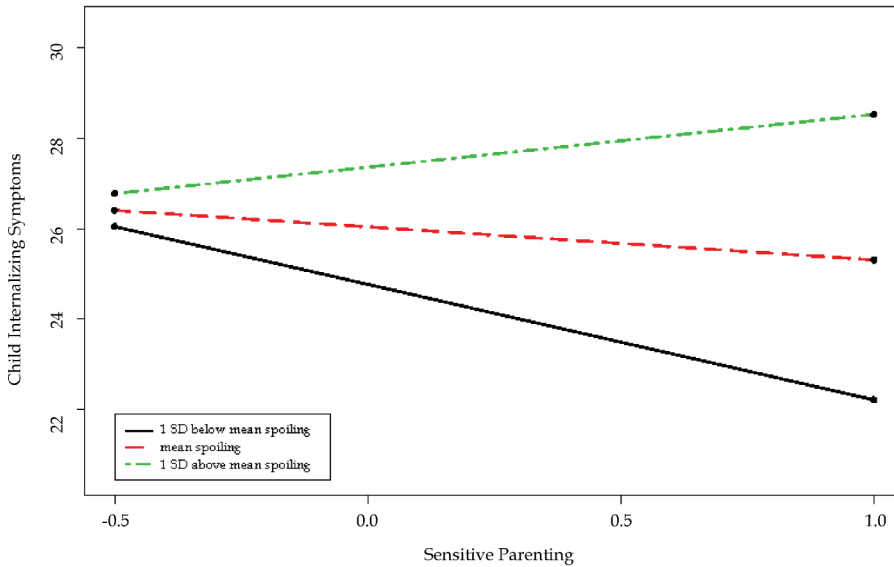


FIGURE 1

Parenting beliefs about spoiling moderate the relation between sensitive parenting and child internalizing symptoms.

TABLE 3

Summary of Final Hierarchical Regression Models of Sensitive Parenting and Discipline/Control and Spoiling Beliefs Predicting Child Internalizing and Child Externalizing Symptoms

Variable	Child Internalizing Model 4			Child Externalizing Model 4		
	B	SE B	$\beta$	B	SE B	$\beta$
Child ethnicity	-.34	1.28	-.02	1.21	1.39	.07
Demographic risk	.04	.53	.01	-.33	.57	-.05
Child gender	.03	1.13	.01	.73	1.22	.04
Maternal psychological distress	.38	.07	.37***	.52	.08	.45***
Sensitive parenting	-.66	.99	-.06	-1.18	1.08	-.10
Discipline beliefs	.34	.60	.04	.35	.65	.04
Spoiling beliefs	1.00	.58	.14	1.39	.63	.17*
Discipline Beliefs $\times$ Sensitive Parenting	.66	.85	.06	.92	.92	.08
Spoiling Beliefs $\times$ Sensitive Parenting	-1.72	.79	-.18*	-.01	.83	-.00
Adjusted R <sup>2</sup>	.22			.27		
F	14.21***			18.64***		

Note. None of the interactions involving ethnicity was significant, and therefore those rows were not included in the table.

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

adjusted  $R^2 = .22$ . Mothers who reported more psychological distress also reported higher child externalizing symptoms. Model 2, which added average sensitive parenting to the base model predicting child externalizing symptoms, showed that sensitive parenting was not a significant predictor, nor did its addition improve the model fit.

Model 3, which added parenting beliefs, accounted for a significant additional portion of variance in child externalizing symptoms,  $\Delta R^2 = .03$ ,  $p < .05$ . Maternal spoiling concerns were positively associated with child externalizing symptoms. Model 4 failed to yield evidence suggesting that there were significant interactions between sensitive parenting and discipline/control and spoiling beliefs (two-way interactions).

### Negative Parenting Behavior

*Child internalizing symptoms.* Table 4 shows the coefficients for the final model (Model 4) predicting child internalizing symptoms with negative intrusive parenting. The base model (Model 1) regressing child internalizing symptoms on child ethnicity, sociodemographic risk, child gender, and maternal psychological distress accounted for a significant portion of variance,  $F(5,180) = 10.82$ ,  $p < .001$ , adjusted  $R^2 = .18$ . Maternal psychological distress was positively associated with child internalizing symptoms,  $\beta = .43$ ,  $p < .001$ . The addition of negative parenting in Model 2 failed to improve the model fit. Maternal psychological distress remained the only significant predictor of child internalizing symptoms,  $\beta = .45$ ,  $p < .001$ . Introducing parenting beliefs in the next step (Model 3) yielded a statistically significant model and improvement in model fit,  $F(7,178) = 7.68$ ,  $p < .001$ , adjusted  $R^2 = .21$ ,  $\Delta R^2 = .01$ ,  $p < .05$ . Mothers who endorsed higher levels of concerns about spoiling reported higher levels of child internalizing symptoms. Adding interactions between negative parenting and (1) discipline/control beliefs and (2) spoiling beliefs in the next step (Model 4) failed to produce an increase in model fit or a significant interaction term. Similarly, there was no evidence of significant three-way interactions, thus we did not include these three-way interaction terms in Table 4.

*Child externalizing symptoms.* Table 4 shows the coefficients for the final model (Model 4) predicting child externalizing behaviors from negative intrusive parenting.

**TABLE 4**  
Summary of Final Hierarchical Regression Models of Negative Parenting and Discipline/Control and Spoiling Beliefs Predicting Child Internalizing and Child Externalizing Symptoms

Variable	Child Internalizing Model 4			Child Externalizing Model 4		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Child ethnicity	-.15	1.28	-.01	.14	1.40	.11
Demographic risk	.05	.49	.01	-.53	.53	-.08
Child gender	.37	1.11	.02	.73	1.21	.04
Maternal psychological distress	.35	.07	.34***	.50	.08	.43***
Negative parenting	.38	.89	.04	2.21	.97	.19*
Discipline beliefs	.36	.59	.05	.23	.64	.03
Spoiling beliefs	.94	.56	.13*	1.40	.61	.17*
Discipline Beliefs $\times$ Negative Parenting	.99	.81	.10	1.42	.89	.13
Spoiling Beliefs $\times$ Negative Parenting	1.19	.69	.14	-.90	.76	.23
Adjusted $R^2$		.24			.28	
<i>F</i>		14.76***			18.08***	

*Note.* None of the interactions involving ethnicity was significant, and therefore those rows were not included in the table.

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

The base model (Model 1) predicting child externalizing from child ethnicity, sociodemographic risk, child gender, and maternal psychological distress accounted for a significant portion of the observed variance in child externalizing symptoms,  $F(4,181) = 13.56, p < .001$ , adjusted  $R^2 = .22$ . Mothers who were more psychologically distressed reported higher child externalizing symptoms. In Model 2, average negative parenting from 6, 12, and 24 months was added, producing a statistically significant increase in accounted for variance,  $\Delta R^2 = .03, p < .01$ . Average negative parenting behaviors positively predicted child externalizing behaviors. Model 3 added parenting beliefs, yielding a significant improvement in model fit,  $\Delta R^2 = .03, p < .05$ . Mothers who endorsed higher levels of concern regarding spoiling reported higher levels of child externalizing symptoms. Average negative parenting behavior remained a significant positive predictor of child externalizing symptoms. Including two-way interactions between negative parenting and (1) discipline/control beliefs and (2) spoiling beliefs in Model 4 did not produce statistically significant results. Likewise, the addition of three-way interaction terms that included ethnicity did not contribute to the models, and thus are not included in Table 4. Taken together, negative parenting and spoiling beliefs were independently linked with child externalizing symptoms.

## DISCUSSION

This study examined linkages among parenting behaviors, parenting beliefs, and young children's internalizing and externalizing symptoms within a community sample of African American and European American families. Our findings suggest that, depending on the particular behaviors and beliefs and dimensions of child adjustment, behaviors and beliefs independently and jointly influence child adjustment. These findings highlight the value of jointly studying associations among multiple domains of parenting and child adjustment.

### Joint Contributions of Parenting Behaviors and Beliefs to Early Problem Behaviors

Parenting behaviors and beliefs are commonly studied separately, but our findings showed that beliefs tend to predict child adjustment jointly with and independently from parenting behaviors. We found evidence that mothers' concerns about spoiling children and their observed sensitive parenting interacted to predict child internalizing symptoms, such that sensitive parenting was associated with lower levels of child internalizing symptoms only when mothers had relatively low levels of concern regarding spoiling. High spoiling concerns reflect concerns about being too responsive to a child. In turn, mothers with low and average spoiling beliefs are not concerned about providing too much attention to their child. These beliefs in conjunction with highly sensitive parenting behaviors indicated a match in positive parenting beliefs and practices and appeared to be protective from child internalizing symptoms. Because child-centered beliefs and parenting behaviors are linked with the development of effective child emotion regulation, they may, over time, protect children from developing internalizing symptoms (Briggs-Gowan, 2006; Shaw et al., 1997).

We found little support for the hypothesis that mismatches between parenting behaviors and beliefs are linked to child behavior problems. Optimal parenting in one domain did not buffer children from the influence of nonoptimal parenting in another

domain. There may be several reasons why we did not find an increased risk for child internalizing or externalizing symptoms when such a mismatch occurred. First, young children lack the cognitive perspective-taking skills with which to evaluate parental behavior and to identify mismatches in their beliefs and behaviors, whereas older children may use their parents' beliefs, their community's norms, and their peers' experiences to interpret whether parents behave in a manner consistent with parental and community beliefs (Deater-Deckard & Dodge, 1997). Second, studies of school-age children indicating that mismatched parenting behaviors and beliefs pose a risk have focused on beliefs regarding physical discipline in conjunction with parental reports of use of physical discipline (Deater-Deckard et al., 2006; McLoyd et al., 2007). In contrast, the present study relates beliefs regarding the importance of discipline and control, a more general set of parenting beliefs, to observations of general parenting behaviors during paradigms that may not elicit the need for parent discipline. Last, a buffering effect might have been supported in an even more disadvantaged sample with higher levels of negative parenting, lower levels of sensitive parenting, and greater endorsement of discipline and control and concern about spoiling beliefs.

#### Independent Contributions of Parent Behaviors and Beliefs to Early Problem Behaviors

We found support for independent relations between maternal behaviors and beliefs and child maladjustment. Negative parenting behaviors and beliefs reflecting concerns about spoiling are correlated, but each presents independent risks for the early development of behavior problems. These findings add to the research linking negative intrusive parenting behaviors to externalizing symptoms during early childhood by showing that parenting beliefs and behaviors are independently linked to child adjustment (e.g., Campbell et al., 2000).

Our findings highlight the value of including parental spoiling beliefs as a risk factor for child maladjustment. Specifically, high maternal spoiling beliefs at the 6-month assessment were consistently linked with elevated levels of mother-reported externalizing and internalizing symptoms during early childhood. Expressing strong concerns regarding spoiling may be tantamount to endorsing unresponsive parenting, and mothers who report concerns about spoiling may be adult-centered across contexts and fail to observe child bids indicating distress or need for regulation. Similarly, mothers with high spoiling concerns may observe child bids but may purposely ignore those bids to prevent spoiling by fostering child independence. Regardless of motivations, the end result may be the same: parenting behaviors that are not sensitive responses to child signals and thus do not help children regulate their emotions. The role of the caregiver in providing regulation for the young child is well-documented (e.g., Sroufe, 1996). Emotion regulation during infancy is seen as dyadic regulation because the caregiver is central to providing the regulation that the child needs, which, in turn, facilitates development of autonomous child regulation. Caregivers who fear that being responsive to the child and providing the regulation that infants need will spoil the infant, and may fail to provide the experiences required for the development of regulation, thus leading to symptoms that are indicative of poor regulation, such as child internalizing and externalizing symptoms.

In contrast, maternal discipline/control beliefs were not associated independently with child behavior problems. We offer two potential explanations for this finding. First, these beliefs were correlated with child externalizing and internalizing in a

bivariate manner, but these relations disappeared in our multivariate models, possibly because of third variables such as high socioeconomic risk. Thus, beliefs about discipline and control may be markers for a risky child development environment generally speaking, but they may not be a specific risk factor. Second, other studies finding associations between maternal discipline/control beliefs and child adjustment have targeted families with older children and asked about the endorsement of specific parenting practices, such as the use of physical punishment (e.g., Deater-Deckard & Dodge, 1997). In the present study, we linked general beliefs about discipline and control to global observations of parent-child interactions across infancy and toddlerhood. Perhaps the behavior of older children elicits greater need for parental discipline, and thus these general beliefs would be linked to child adjustment. Alternatively, beliefs tapping more specific parenting behaviors (e.g., use of physical discipline) may be more closely associated with parent behaviors and child outcomes than the more global measures used in the present study.

#### Parenting Behaviors, Parenting Beliefs, and Child Behavior Problems in Context

Although studies of older children have suggested that interactions between parenting behaviors and beliefs may be differentially linked to child adjustment among African American and European American families, and that the effect of the mismatch between parenting behaviors and beliefs may vary depending on ethnicity, our study failed to replicate this finding. Further, post-hoc analyses that substituted interactions with ethnicity for interactions with sociodemographic risk also failed to suggest that the relation between parenting beliefs and behaviors in the prediction of child adjustment depends on the socioeconomic context. Accordingly, high levels of concern regarding spoiling represent a risk for the development of child externalizing and internalizing across ethnic and sociodemographic contexts. Perhaps effective, appropriate parenting during infancy and toddlerhood may be more consistent across contexts than parenting during later developmental periods. That is, parenting early in a child's life demands responsiveness that facilitates the development of the child to acquire emotion regulation skills. If spoiling concerns essentially endorse or support unresponsive parenting, then it seems likely that these beliefs would be maladaptive across contexts.

#### Limitations and Future Directions

Our sample was a relatively small community sample, and thus the results cannot be generalized to families in which children exhibit clinical levels of behavior problems. The relatively small sample size may also have limited the statistical power to detect complex interaction effects. Furthermore, our models account for a modest level of variability in child externalizing and internalizing symptoms, and future investigations should include other family and child factors. Future studies could benefit from using larger, even more diverse samples. Using within-ethnic group analyses with larger socioeconomically diverse samples to test these complex relations may yield important findings regarding processes within African American and European American families. As in many studies, ethnicity and socioeconomic disadvantage were confounded. However, the present sample did have a diverse range of risk among the African American families. Although we included a cumulative socioeconomic risk indicator as

a control in all models, disentangling ethnicity, disadvantage, and culture is a complicated process. Furthermore, the present sample included only African American and European American mothers, and future research should consider other ethnic groups and fathers.

Additional limitations relate to our measures and scope of the study. Although we only assessed parental beliefs when children were 6 months, the strength of the relation between beliefs assessed at 6 months and parenting across time suggests that we may have tapped into a relatively stable construct. According to Holden and Miller (1989), parental attitudes and values tend to be more stable over time than specific parenting behaviors, and the stability of these beliefs may account for some stability in parenting behaviors across time. Nevertheless, future investigations would benefit from the longitudinal assessment of parenting beliefs. Research is lacking on the stability of parenting beliefs across infancy and toddlerhood. Child behavior problems and parenting beliefs were mother-reported and could, in part, reflect maternal symptoms and shared method variance, although we controlled for maternal psychological distress and included observations of parent behaviors. In addition, the direction of effects is unclear in these analyses. Children likely influence and are influenced by parent beliefs and behaviors. Including additional waves would help address direction of effects questions. Last, we tested the potential implications of a mismatch between parenting behaviors and beliefs by examining the interactions between these two domains of parenting, but we did not consider factors that may be associated with mismatched behaviors and beliefs. Understanding when and why parents exhibit behaviors that are incongruent with expressed beliefs is a fruitful area for future research.

### Implications

Despite these limitations, the present study underscores the importance of examining multiple domains of parenting (i.e., beliefs and behaviors) as risk factors for the development of early childhood behavior problems. The results support the use of evidence-based interventions such as Triple P (Sanders, Markie-Dadds, & Turner, 2003) that jointly consider parenting beliefs and behaviors, as we found joint and independent relations between mothers' behaviors and beliefs and their children's adjustment. Intervening to change parenting in one domain may be less effective than intervening to change parenting behaviors *and* parenting beliefs. Our findings also add to a growing body of research studying child externalizing and internalizing symptoms early in life as distinct dimensions of child adjustment. Specifically, interactions between parenting behaviors and beliefs in the prediction of child internalizing symptoms underscore the need for more research on risks for the early development of internalizing symptoms.

### AFFILIATIONS AND ADDRESSES

Melissa A. Barnett, Division of Family Studies and Human Development, University of Arizona, Tucson, AZ 85719. E-mail: barnettm@arizona.edu. Lilly Shanahan is at the University of North Carolina at Greensboro. Min Deng is at the University of North Carolina at Chapel Hill. Mary E. Haskett is at North Carolina State University. Martha J. Cox is at the University of North Carolina at Chapel Hill.

## ACKNOWLEDGEMENTS

This study was supported by The North Carolina Child Development Research Collaborative, which is funded by the National Science Foundation through Children's Research Initiative Grant #BCS-0126475. The authors thank the families who participated in the Durham Child Health and Development Study. The authors also thank the research assistants for their valuable help with collecting and coding the data.

## REFERENCES

- Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA Preschool Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage Publications.
- Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology*, 52, 27–38.
- Angold, A., & Egger, H. L. (2007). Preschool psychopathology: Lessons for the lifespan. *Journal of Child Psychology and Psychiatry*, 48, 961–966.
- Bornstein, M. H. (2002). Parenting infants. In M. H. Bornstein (Ed.), *Handbook of parenting: Children and parenting* (2nd ed., Vol. 1, pp. 3–43). Mahwah, NJ: Erlbaum.
- Briggs-Gowan, M. J., Carter, A. S., Bosson-Heenan, J., Guyer, A. E., & Horowitz, S. M. (2006). Are infant-toddler social-emotional and behavioral problems transient? *Journal of the American Academy of Child and Adolescent Psychiatry*, 45, 849–858.
- Bugental, D. B., & Johnston, C. (2000). Parental and child cognitions in the context of the family. *Annual Review of Psychology*, 51, 315–344.
- Burchinal, M., Skinner, D., & Reznick, S. (2009). *African American mothers' beliefs about parenting and disciplining infants: A mixed-method analysis*. Manuscript under review, University of North Carolina at Chapel Hill.
- Campbell, S. B., Shaw, D. S., & Gilliom, M. (2000). Early externalizing behavior problems: Toddlers and preschoolers at risk for later maladjustment. *Development and Psychopathology*, 12, 467–488.
- Chorpita, B. H., & Barlow, D. H. (1998). The development of anxiety: The role of control in the early environment. *Psychological Bulletin*, 124, 3–21.
- Cox, M. J. (1997). *Qualitative ratings for parent-child interaction at 24–36 months of age*. Unpublished manuscript, Department of Psychology, University of North Carolina at Chapel Hill.
- Cox, M. J., & Crnic, K. (2002). *Qualitative ratings for parent-child interaction at 3–12 months of age*. Unpublished manuscript, Department of Psychology, University of North Carolina at Chapel Hill.
- Deater-Deckard, K., & Dodge, K. (1997). Externalizing behavior problems and discipline revisited: Nonlinear effects and variation by culture, context, and gender. *Psychological Inquiry*, 8, 161–175.
- Deater-Deckard, K., Ivy, L., & Petrill, S. A. (2006). Maternal warmth moderates the link between physical punishment and child externalizing problems: A parent-offspring behavior genetic analysis. *Parenting: Science and Practice*, 6, 59–78.
- Derogatis, L. R. (2000). *BSI-18: Brief Symptom Inventory-18: Administration, scoring, and procedures manual*. Minneapolis, MN: Pearson Assessments.
- Garcia Coll, C., Lambert, G., Jenkins, R., McAadoo, H. P., Crnic, K., Wasik, B. H., & Garcia, H. V. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development*, 67, 1891–1914.
- Hogan, D. M., & Tudge, J. (1994). *Parent Opinion Survey (POS)*. Unpublished scale, University of North Carolina at Greensboro.
- Holden, G. W., & Miller, P. C. (1999). Enduring and different: A meta-analysis of the similarity in parents' child rearing. *Psychological Bulletin*, 125, 223–254.
- Horn, I. B., Cheng, T. L., & Joseph, J. (2004). Discipline in the African American community: The impact of socioeconomic status on beliefs and practices. *Pediatrics*, 113, 1236–1241.
- Lau, A. S., Litrownik, A. J., Newton, R. R., Black, M. M., & Everson, M. D. (2006). Factors affecting the link between physical discipline and child externalizing problems in black and white families. *Journal of Community Psychology*, 34, 89–103.



- Luster, T., Rhoades, K., & Haas, B. (1989). The relation between parental values and parenting behavior: A test of the Kohn hypothesis. *Journal of Marriage and Family, 51*, 139-147.
- McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185-204.
- McLoyd, V. C., Kaplan, R., Hardaway, C., & Wood, D. (2007). Does endorsement of physical discipline matter? Assessing moderating influences on the maternal and child psychological correlates of physical discipline in African American Families. *Journal of Family Psychology, 21*, 165-175.
- National Institute of Child Health and Human Development Early Child Care Research Network. (1999). Child care and mother-child interaction in the first three years of life. *Developmental Psychology, 35*, 1399-1413.
- Reis, J. (1993). Black and white adolescent mothers' child-rearing beliefs and behaviors. *Infant Mental Health, 14*, 221-233.
- Rubin, K. H., Burgess, K. B., Dwyer, K. M., & Hastings, P. D. (2003). Predicting preschoolers' externalizing behaviors from toddler temperament, conflict, and maternal negativity. *Developmental Psychology, 39*, 164-176.
- Sanders, M. R., Markie-Dadds, C., & Turner, K. M. T. (2003). Theoretical, scientific, and clinical foundations of the Triple P—Positive Parenting Program: A population approach to the promotion of parenting competence. *Parenting Research and Practice Monograph, 1*, 1-21.
- Shaw, D. S., Keenan, K., Vondra, J. I., Delliquadri, E., & Giovannelli, J. (1997). Antecedents of preschool children's internalizing problems: A longitudinal study of low-income families. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*, 1760-1767.
- Sigel, I. E., & McGillicuddy-De Lisi, A. V. (2002). Parent beliefs are cognitions: The dynamic belief systems model. In M. H. Bornstein (Ed.), *Handbook of parenting: Being and becoming a parent* (2nd ed., Vol. 3, pp. 485-501). Mahwah, NJ: Lawrence Erlbaum Associates.
- Smyke, A. T., Boris, N. W., & Alexander, G. M. (2002). Fear of spoiling in at-risk African American mothers. *Child Psychiatry and Human Development, 32*, 295-307.
- Solomon, R., Martin, K., & Cottingham, E. (1993). Spoiling an infant: Further support for the construct. *Topics in Early Childhood Special Education, 13*, 175-184.
- Sroufe, L. A. (1996). *Emotional development: The organization of emotional life in the early years*. New York: Cambridge University Press.
- Trafimow, D., & Finlay, K. A. (2001). The relationship between normatively versus attitudinally controlled people and normatively versus attitudinally controlled behaviors. *The Social Science Journal, 38*, 203-216.
- Tudge, J., Hogan, D. M., Snezhkova, N. N., & Etz, K. E. (2000). Parents' child-rearing values and beliefs in the United States and Russia: The impact of culture and social class. *Infant and Child Development, 9*, 105-121.
- Weis, R. (2002). Parenting dimensionality and typology in a disadvantaged, African American sample: A cultural variance perspective. *Journal of Black Psychology, 28*, 142-173.
- Whaley, A. L. (2000). Sociocultural differences in the developmental consequences of the use of physical discipline during childhood for African Americans. *Cultural Diversity and Ethnic Minority Psychology, 6*, 5-12.

Copyright of Parenting: Science & Practice is the property of Taylor & Francis Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.