The Relationship Between Maternal Beliefs and Behavior During Shared Reading

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The goal of the present study was to increase understanding of the connection between maternal beliefs and behavior during shared reading and to examine the relation of these maternal beliefs to children's reading engagement. The study included survey and observational data from an ethnically diverse sample of 50 mothers and their 5- to 6-year-old children. As predicted, mothers who believed that shared reading should involve learning showed more learning-focused behaviors. Similarly, the belief that reading should be fun predicted more positive interactions. Some relationships between beliefs and behavior were moderated by gender. For girls, higher maternal expectations for children's future reading grades were associated with better scaffolding, but this pattern was not found for boys. There was a positive relationship between mothers' belief that reading should be fun and their sons' engagement. No gender differences were found in maternal expectations and beliefs or in observed maternal learning-focused behaviors or positive support. However, girls were observed to be significantly more engaged during the reading interaction. These results point to the connections between maternal beliefs and behaviors during shared reading, as well as the need to consider child gender in understanding these connections.

Considerable evidence has demonstrated that parents play an important role in children's academic development. Researchers interested in parents' role have fo-

cused primarily on (a) parents' beliefs about their children's academic development (Ardelt & Eccles, 2001; Eccles, Jacobs, & Harold, 1990; Jacobs & Eccles, 1992, 2000) and (b) parent behaviors in children's academic development (Grolnick & Ryan, 1989; Halle, Kurtz-Costes, & Mahoney, 1997; Hoover-Dempsey et al., 2001; Robinson, Weinberg, Redden, Ramey, & Ramey, 1998; Stipek & Gralinski, 1991; Whitehurst et al., 1988). However, more work is needed to draw these two areas of research together and examine the link between parents' beliefs and behavior. Surprisingly little is known about how parents' beliefs are conveyed to children or how parent behaviors may reflect their beliefs. Understanding this connection between beliefs and behavior could help improve efforts to foster children's literacy skills through family interventions.

In two influential reviews, Miller (1988) and Goodnow (1988) highlighted the replicated yet modest relationship between parents' beliefs and actions, as well as ongoing theoretical and methodological obstacles to understanding this relationship. Recent work has examined the links between parent beliefs and behaviors (e.g., Englund, Luckner, Whaley, & Egeland, 2004; Halle et al., 1997; Wagner & Phillips, 1992), but few studies have examined this connection in the context of children's early literacy development. The research that has been done suggests that parents' beliefs about literacy are likely related to their behaviors during shared reading (Baker & Scher, 2002; DeBaryshe, 1995; DeBaryshe, Binder, & Buell, 2000; Lynch, Anderson, Anderson, & Shapiro, 2006; Serpell, Baker, & Sonnenschein, 2005; Sonnenschein & Munsterman, 2002). Moreover, parents' beliefs and behaviors are related to children's academic development in gender-specific ways and have been linked to children's gender-differentiated beliefs, interests, and achievement (Frome & Eccles, 1998; Tenenbaum & Leaper, 2003; Tiedemann, 2000). The present study adds to the literature by examining relationships between mothers' beliefs and observed behaviors during shared reading and how these relationships may vary with sons compared to daughters.

PARENT BELIEFS AND CHILDREN'S ACADEMIC DEVELOPMENT

Of the large and varied literature on parental beliefs, two types of parent beliefs were of interest in the current study: parents' beliefs about learning and education and parents' beliefs (also referred to as *expectations*) about their own children's abilities and potential for success (see Hirsjärvi & Perälä-Littunen, 2001, for a review). Parents' academic-related beliefs have been linked to their parenting behaviors (Jodl, Michael, Malanchuk, Eccles, & Sameroff, 2001) and to their children's attitudes about school (Stevenson, Chen, & Uttal, 1990). It is thought that parent expectations relate to children's academic development in part by shaping parent behavior (Davis-Kean, 2005; Sy & Schulenberg, 2005) and children's feelings of

academic interest and competence (Frome & Eccles, 1998; Galper, Wigfield, & Seefeldt, 1997; Halle et al., 1997; Jodl et al., 2001). In some studies, parent expectations have been shown to relate directly to children's performance (Davis-Kean, 2005; Galper et al., 1997; Halle et al., 1997; Korat, 2004), although this has not been shown in others (Korat & Haglili, 2007; Serpell et al., 2005; Stevenson et al., 1990). Discrepancies in these relationships are likely related to how beliefs and outcomes have been measured, and they may vary with demographic factors such as socioeconomic status (SES), ethnicity, and child gender. The mixed findings also point to the need for additional research in this area.

Connections between parent beliefs and children's development also have a growing empirical base in the context of early literacy. Parent beliefs about literacy have shown associations with children's developing interest and skills in reading. For example, in their small exploratory study, DeBaryshe et al. (2000) found that mothers' implicit theories about literacy development predicted kindergartners' reading exploration and skills, such that mothers with code-oriented understanding had children with higher skills. Children of mothers who did not endorse a theoretical approach showed the least developed skills. In the Baltimore Early Childhood Project, Baker and Scher (2002) found that mothers' beliefs that reading should be fun (an entertainment perspective) were related to children's self-beliefs, whereas beliefs about reading as necessary for learning or social development were unrelated to children's views about reading. Similarly, Sonnenschein et al. (1997) found parental endorsement of an entertainment focus for shared reading was positively related to children's literacy skills, whereas a skills-based focus was not. These studies underscore that relationships between parent beliefs and children's literacy development are dependent on the types of beliefs and outcomes measured. However, they are limited by reliance on parent report and interviews; observational data would further illuminate how such beliefs relate to actual parent and child behavior during reading.

GENDER, PARENT BELIEFS, AND LITERACY DEVELOPMENT

Research among older children has suggested that parents' beliefs may relate to their children's self-concept and academic choices in ways that correspond with gender stereotypes (Eccles et al., 1990; Frome & Eccles, 1998; Jacobs & Eccles, 1992). Parents have been shown to hold higher expectations for boys' performance and aptitude in science and math despite comparable child achievement (Andre, Whigham, Hendrickson, & Chambers, 1999; Eccles, 1994; Heller & Ziegler, 1996). By contrast, parents have shown higher expectations for girls in primary school reading (Eccles et al., 1993) and middle school language arts (Frome & Eccles, 1998). On the other hand, some studies have found no gender differences

in parent beliefs about elementary school children's reading abilities (Andre et al., 1999; Herbert & Stipek, 2005). The current study did not explicitly examine gender-stereotyped beliefs (see Tiedemann, 2000) or how mothers' expectations relate to children's skills. However, it did examine whether beliefs about sons vary compared to those about daughters, and how potential differences relate to children's observed engagement during reading.

PARENTS, SHARED READING, AND ACADEMIC DEVELOPMENT

Parent–child shared reading has been shown in correlational, longitudinal, and experimental studies to be related to the development of vocabulary, emergent literacy skills, and motivation for reading (Aram & Levin, 2002; Bergin, 2001; Bus, van Ijzendoorn, & Pellegrini, 1995; DeBaryshe, 1995; Ortiz, Stowe, & Arnold, 2001; Snow, Burns, & Griffin, 1998). However, debate continues as to the extent to which shared reading is causally related to children's long-term reading skills (Bus et al., 1995; Lonigan, 1994; Payne, Whitehurst, & Angell, 1994; Scarborough & Dobrich, 1994).

One way in which shared reading may help facilitate children's literacy is by providing an opportunity for scaffolding and parental guidance. Theory and practice based on Vygotsky's model of cognitive development (Vygotsky, 1986) highlight parent practices that are sensitive to children's developmental level. Children's learning is facilitated by effective scaffolding that is attuned to children's developmental level while still providing autonomy support. By contrast, poor scaffolding, making tasks too easy or difficult, and overcontrolling parenting have been linked to less developed skills. For example, in their observational study of mothers' and kindergartners' shared-writing activities, Aram and Levin (2001) found that higher quality maternal "mediation" techniques (i.e., making the task sensitive to children's existing knowledge) were positively associated with children's literacy, even above and beyond other home environment factors. In related work, Pianta and colleagues examined parent–child interactions during problem-solving tasks and found that interaction quality, including level of autonomy support, was associated with school performance and adjustment (Pianta & Harbers, 1996; Pianta, Nimetz, & Bennett, 1997). Other observational work has found positive relationships between mothers' sensitivity to children's skill level and younger children's subsequent task motivation (Deci, Driver, Hotchkiss, & Robbins, 1993) and task independence (Baker, Sonnenschein, & Gilat, 1996).

Specific parent behaviors during shared reading are also thought to promote emergent skills, interest, and knowledge of print (D. S. Arnold, Lonigan, Whitehurst, & Epstein, 1994; Stoltz & Fischel, 2003; Whitehurst & Lonigan, 1998). For example, the Dialogic Reading program, an intervention in which parents are

taught specific strategies for shared reading, has been shown to foster significant gains in children's vocabulary and early literacy skills as compared to nontrained control groups (e.g., D. S. Arnold et al., 1994; Fielding-Barnsley & Purdie, 2003; Whitehurst et al., 1988). This technique encourages parents to ask questions about the story, provide positive feedback, and expand children's ideas during shared reading (Huebner & Meltzoff, 2005; Zevenbergen & Whitehurst, 2003). Sonnenschein and Munsterman (2002) found that the amount, but not the type, of mothers' talk during shared reading predicted kindergartners' reading motivation level in the first grade. In a follow-up study, neither quantity nor type of talk was related to reading comprehension levels assessed during third grade; however, significant attrition limited the interpretation of these findings (Serpell et al., 2005). Taken together, these studies suggest the possible importance of specific parent behaviors in the early stages of literacy development.

For the purposes of the present study, we refer to scaffolding and specific parent reading techniques as *learning-focused behaviors*. Although these learning-focused behaviors have empirical support for their relationship to children's emergent literacy, little is understood about the link between maternal beliefs and these practices. Specifically, how might mothers' beliefs about their children's reading potential and beliefs about the goals of shared reading relate to their observed learning-focused behaviors? It is expected that mothers who have high expectations for their children's future achievement and who see shared reading as a learning activity will exhibit more learning-focused strategies.

TONE OF SHARED-READING INTERACTIONS

Among efforts to understand factors associated with children's literacy development, there is an increasing focus on the emotional tone of parent–child reading. Children's reading skills and interest may be fostered by engaging, fun, and emotionally warm reading experiences, often first experienced with parents (Bergin, 2001; DeBaryshe, 1995; Halle et al., 1997; Sonnenschein & Munsterman, 2002). Parent behaviors that convey warmth and a positive emotional tone provide children with a safe base for exploration and learning (Bergin, 2001; Pianta & Harbers, 1996; Richman & Rescorla, 1995; Wagner & Phillips, 1992; Zhou, Eisenberg, & Losoya, 2002). Secure attachment between mother and child has been linked to reading interest and behaviors (Bus & Ijzendoorn, 1988; Bus et al., 1995). Observational studies have been mixed with regard to the relationship between emotionally positive interactions and children's skill and interest development. More positive interactions during shared reading have been linked to higher levels of fluency and engagement (Bergin, 2001) and to stronger literacy skills 2 years later (Dodici, Draper, & Peterson, 2003). By contrast, Sonnenschein and Munsterman (2002) found that affective quality during shared reading was related to children's motiva-

tion to read but not to their concurrent literacy skills. Serpell and colleagues (2005) found that only one aspect of affective quality during shared reading, voice modulation, was related to later reading skills. More research in this area would illuminate the relationships between the tone of shared reading and children's development.

CHILD GENDER, PARENT BEHAVIORS, AND LITERACY DEVELOPMENT

The relationship between parent behaviors and child gender during shared reading would also benefit from additional study. Related studies on language practices with young children (see Leaper, Anderson, & Sanders, 1998, for a meta-analysis) have suggested that parents tend to use more emotional and supportive language, but also more directives, with daughters compared to sons. There is also evidence that parents' use of language and teaching techniques differs depending on the subject area. A small but growing literature suggests that parents may foster more autonomy and self-exploration in boys than girls in science and math (Catsambis, 1999; Crowley, Callanan, Tenenbaum, & Allen, 2001; Ford, Brickhouse, Lottero-Perdue, & Kittleson, 2006; Tenenbaum & Leaper, 2003; Tenenbaum, Snow, Roach, & Kurland, 2005). To add to this literature base, the current study explored how mothers' reading behaviors might vary with daughters compared to sons.

Gender differences in affect between mothers and children might also play a role in literacy development. Young girls tend to show more physical and emotional closeness with mothers than do boys (Barnett, Kidwell, & Leung, 1998; Benenson, Morash, & Petrakos, 1998), and they may respond differently than boys to mothers' emotional modeling (Denham, Renwick, & Holt, 1991; Turner, 1991). Furthermore, reading has been identified as an important component of girls' identity (Cherland, 1994; Ford et al., 2006). One question addressed in the current study was whether relational elements of shared reading vary depending on child gender.

THE CURRENT STUDY

In sum, much remains to be learned about the relationship between parents' beliefs and shared-reading practices, including possible differences with respect to boys compared to girls. The current study evaluated whether mothers' beliefs are associated with own and their children's behavior during shared reading. By examining beliefs and behaviors concurrently, the current study has the potential to provide a step toward better understanding the role of parents in children's early literacy development. In addition, this study examined how mothers' beliefs and behaviors, and the relationships between these, vary with respect to sons compared

to daughters. The study included direct observations of shared reading; previous studies have often been limited by reliance on parent reports (Serpell et al., 2005), and many of the studies that have incorporated observations have not included diverse samples. The current study utilized mother-reported beliefs and observational data with an ethnically and socioeconomically diverse sample. This multimethod approach allowed for an examination of actual behavior and eliminated problems of shared method variance. We evaluated the relationships between two different types of maternal beliefs (beliefs about future grade achievement and beliefs about task goals) and three types of observed behaviors (maternal learning-focused behaviors, mothers' emotional tone, and child engagement). Given the lack of previous research in this area, the study was to some extent descriptive and exploratory, but it did include some specific hypotheses based on previous studies.

The first set of analyses was conducted on an exploratory basis. We explored whether mothers hold higher overall grade expectations for daughters than sons, because past research has been mixed regarding the extent to which parents hold higher expectations for girls in reading and language arts (e.g., Eccles et al., 1993; Herbert & Stipek, 2005). We also examined whether mothers vary in their overall levels of learning-focused behaviors and positive emotion with daughters compared to sons, and whether child engagement levels vary by gender.

The next set of study hypotheses pertained to whether there is an overall relationship between the two types of maternal beliefs (grade expectations and task goals) and observed maternal and child behavior. Specifically, higher grade expectations for children were expected to predict higher levels of learning-focused behaviors, a more positive emotional tone, and higher levels of child engagement. Beliefs that shared reading should involve learning were predicted to be associated with higher levels of learning-focused behaviors. We expected that maternal beliefs regarding fun as a goal of reading would predict more positive emotional tone and more child engagement. The belief that children should "do the task right" was examined on an exploratory basis. Finally, we explored whether these relationships would be moderated by child gender.

METHOD

Participants

Participants included 50 children (27 girls) and their mothers, originally recruited from three urban child care centers for a larger study of child development (D. H. Arnold et al., 2006). In all, 36 of the children were from two centers serving families from low-SES backgrounds (median income = $25,000), whereas the other 14 were from a center serving families of higher SES backgrounds (median income = $57,000). On average, children were 5.8 years old at the time of the study ($SD =$

0.62). Based on mothers' reports, the ethnic breakdown of the children was 46% Hispanic, 34% White, 12% African American, and 8% mixed racial background. The median (and mean) highest maternal educational level completed for the sample was high school. Four mothers had not completed high school, whereas 17 had completed college.

Procedure

This study utilized data from a larger project that was designed to examine the relationship between academic and social–emotional development across time (D. H. Arnold et al., 2006). All parents from identified classrooms were initially invited to participate in the study through a letter sent home to all families. All interested parents attended a meeting at their center, filled out questionnaires, and provided permission for teachers to provide child assessments. Families who participated in this initial stage of the study were invited to participate in a later stage of the project that included home visits. Because funding for the home visits was obtained partway through the larger project, the participation rate was somewhat low: the 50 families of the current study were drawn from 79 families who had completed early- and late-year assessments in the first year of the study (71%). However, the same percentage of invited families from low-SES versus high-SES centers agreed to participate, and participating families did not significantly differ from families who participated in the original assessment on any demographic variables.

During home visits, mothers completed questionnaires that included demographic information and questions regarding their beliefs about their children's future academic achievement. Mothers and children were then videotaped in a series of structured tasks in the following order: playing with blocks together, reading a book together, child playing alone, and child cleaning up toys under mother's direction. Each task lasted 10 min. A questionnaire regarding beliefs about the goals of shared reading was administered following the reading task, which was the focus of the present study.

Beliefs Questionnaires

Grade expectations.   Mothers were asked: "Circle the grade you expect your child to receive in elementary school in each of the following subjects …" Expected grades ranged from A to D and were scored such that A = 10, A– = 9, and so on to D = 1. The subjects included reading and spelling; expectation scores on these two items were averaged and used in analyses.

Beliefs about the goals of reading.   Mothers were asked to reflect on the reading task after completing it. Mothers were asked the following: "How important was it to you that your child: Learn something; Have fun; and Do it right?" Re-

sponses were on a 10-point Likert scale that ranged from 0 (*not at all*) to 9 (*very much*).

Observational Measures

Shared reading.   Mothers and children were videotaped for 10 min of shared reading. Dyads were given *Spot's Bedtime Storybook*, an age-appropriate story-book with animals as the main characters. Mothers were asked to read with their children as they normally would. As the reading task occurred second in a series of four tasks, participants appeared to be well habituated to the filming by the time of the reading.

Trained research assistants coded the mother–child interactions. Coded con-structs were chosen based on empirical investigations and theory regarding educa-tionally relevant parenting, adapted from the National Institute of Child Health and Human Development's Study of Early Child Care and Youth Development (Ege-land & Hiester, 1993; National Institute of Child Health and Human Development Early Child Care Network, 1999) and other previous observational studies of shared reading (e.g., Ortiz et al., 2001; Whitehurst et al., 1988). Some constructs were coded with global ratings, and others were coded on an interval basis. Global codes for mother behavior were on a 7-point Likert scale and were based on the en-tire reading session. The only exception was a control variable, maternal literacy. This global rating of mother reading fluency was made on a scale of 1 to 3, with 3 indicating most fluent. Interval events of mother behavior were coded for their presence or absence in 30-s intervals, with scores representing the number of inter-vals in which the behavior occurred. The complete coding manual is available from the authors.

Maternal behavior: Learning-focused behavior.   This category included one global code and three interval codes. The global code, *Scaffolding*, described how well mothers tailored the situation to the learning level of the child. As de-scribed to coders, ideal scaffolding entailed providing less guidance when the child was succeeding and more support when the child needed it. Examples in-cluded guiding a child to sound out an unknown word rather than simply saying the word, or adjusting the level of a question based on the child's ability to answer it. *Specific Question* included any question about the reading that had a specific an-swer, such as "What is the boy's name?"; *Open-Ended Question* included any question about the reading that allowed the child flexibility in answering with no right or wrong answer; *Providing Information* included instances when mothers provided new or additional information about the story or reading process (e.g., "Look, that's the letter *S*.").

Maternal behavior: Emotional tone.   This category of behavior included two global codes and one interval code. The global code *Making Reading Interesting/Positive* was coded based on mothers' contribution to making the reading task a positive, fun experience for the child. Examples of how mothers could make reading more interesting and positive included reading in an expressive tone and showing interest in what happens next in the story. The second global code, *Maternal Warmth*, described the level of warmth that mothers expressed to children through verbal and nonverbal behavior. Expressions of warmth/closeness by the mother included patting the child on the back, using a warm tone of voice, and smiling at the child. *Praise*, an interval code, was defined as instances when mothers expressed a favorable judgment about children's behavior, either verbally or nonverbally.

Child behavior: Child engagement.   The *Child Engagement/Interest* code was a global rating of how engaged and interested the child appeared to be in the reading interaction. This rating focused on signs of engagement such as attention to the book, enthusiasm and interest in the story, and body postures such as leaning in as opposed to leaning away from the task.

Reliability and validity.   Each interaction was coded by two research assistants, and average scores were used in analyses. Intraclass correlations were calculated from the reliability pairs. The interval-based codes all had intraclass correlation coefficients =.74. Global codes also showed adequate reliability: scaffolding (.83), Making Reading Interesting/Positive (.78), Maternal Warmth (.73), and Child Engagement/Interest (.81). With respect to validity, similar coding schemes have shown construct validity in relating as expected to other coded constructs, convergent validity with alternative methods of measuring the same constructs, and predictive validity in longitudinal studies of development (Gauvain, Fagot, Leve, & Kavanagh, 2002; Grolnick, Gurland, DeCourcey, & Jacob, 2002; National Institute of Child Health and Human Development Early Child Care Research Network, 1999; Neitzel & Stright, 2003; Ortiz et al., 2001; Pratt, Kerig, Cowan, & Cowan, 1988).

RESULTS

Descriptive Statistics

Table 1 provides means and standard deviations for all variables for the total sample as well as by gender. Intercorrelations among belief variables are reported in Table 2, and those among behavior variables in Table 3.

TABLE 1
Means and Standard Deviations for Beliefs and Behaviors for Total
Sample and by Gender

Measure (Scale)	Total Sample		Girls		Boys	
	M	SD	M	SD	M	SD
Maternal literacy (1–3)	2.61	0.57	2.60	0.58	2.63	0.57
Grade expectations (1–10)	9.18	1.10	9.03	1.09	9.35	1.12
Task beliefs						
Learn something (0–9)	6.74	1.87	6.72	2.07	6.76	1.65
Have fun (0–9)	7.60	1.45	7.80	1.38	7.37	1.54
Do it right (0–9)	5.76	2.36	5.76	2.38	5.76	2.39
Learning-focused behaviors						
Scaffolding (1–7)	3.68	1.67	4.02	1.66	3.28	1.63
Specific questions (0–20)	5.14	4.96	6.87	5.60	3.11	3.12
Open-ended questions (0–20)	1.42	2.00	1.74	1.83	1.04	2.15
Providing info (0–20)	9.57	6.13	10.30	6.37	8.72	5.85
Emotional tone						
Make interesting/positive (1–7)	3.93	1.55	4.02	1.69	3.83	1.40
Maternal warmth (1–7)	4.66	1.19	4.65	1.23	4.67	1.16
Praise (0–20)	1.11	2.15	1.35	2.03	0.83	2.28
Child behavior						
Child engagement (1–7)	4.79	1.36	5.21	1.14	4.26	1.44

TABLE 2
Correlations Among Maternal Beliefs

Variable	1	2	3	4
1. Grade expectations	—			
Task beliefs				
2. Learn something	.38**	—		
3. Have fun	.22	.54**	—	
4. Do it right	.39**	.65**	.41**	—

  **$p < .01$.

Analytic Plan

Initial analyses examined whether maternal beliefs and observed maternal and
child behaviors varied by gender. Then regression analyses examined whether ma-
ternal beliefs about future grades and reading task goals predicted observed mater-
nal and child behaviors, with separate equations for each belief and each behav-
ioral rating. Finally, a Gender × Belief interaction term was added to each analysis
to test whether the association was moderated by child gender (where 1 = boys and
0 = girls). SES and mothers' level of fluency were used as control variables in all

TABLE 3
Correlations Among Observed Behavior Codes

Variable	1	2	3	4	5	6	7	8
Learning-focused								
1. Scaffolding	—							
2. Specific questions	.74**	—						
3. Open-ended questions	.50**	.55**	—					
4. Providing info	.61**	.45**	.22	—				
Emotional tone								
5. Make interesting/positive	.87**	.67**	.52**	.47**	—			
6. Maternal warmth	.73**	.48**	.27	.43**	.76**	—		
7. Praise	.60**	.39**	.13	.40**	.56**	.53**	—	
Child behavior								
8. Child engagement	.61**	.55**	.19	.48**	.53**	.53**	.53**	—

**$p < .01$.

regression analyses, given the previously found associations between these variables and reading behaviors (Adams, 1990; Ninio, 1980). Significant findings are presented below. Given this study's small sample size, interactions that approach significance (i.e., $p < .10$) are also described. Standardized and unstandardized coefficients are presented for all regression analyses.

Gender Differences in Beliefs and Behaviors

T tests were utilized to evaluate whether beliefs and behaviors differed depending on child gender. Boys' and girls' mean scores differed significantly on only two measures: Mothers asked more Specific Questions of girls than of boys ($p < .05$), and girls showed higher levels of Engagement than boys ($p < .05$).

Maternal Grade Expectations and Learning-Focused Behaviors

There was a significant interaction between Grade Expectations and gender in predicting Scaffolding (interaction $B = .49$, $b = 0.88$, $SE_b = .42$, $p < .05$; see Figure 1). Higher Grade Expectations were associated with better Scaffolding for mothers reading to daughters ($r = .44$, $p < .05$), whereas no significant relationship between Grade Expectations and Scaffolding was found for mothers reading to sons ($r = -.09$).

Maternal Grade Expectations and Mothers' Emotional Tone

The interaction between Grade Expectations and gender in predicting Making Reading Interesting/Positive approached, but did not reach, significance (interac-
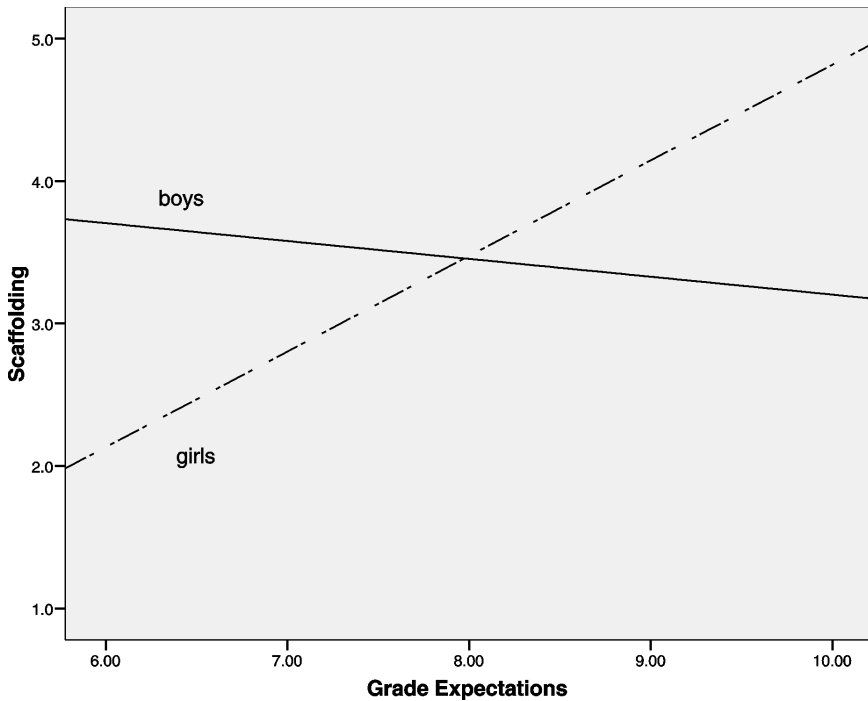
FIGURE 1   The relationship between maternal grade expectations and scaffolding, as moderated by child gender.

tion $B = .41$, $b = 0.75$, $SE_b = .41$, $p = .07$). The positive relationship between higher grade expectations for girls and Making Reading Interesting/Positive approached significance ($r = .36$, $p = .07$), whereas for boys this relationship was nonsignificant ($r = -.04$). The interaction between Grade Expectations and gender in predicting Maternal Warmth also approached, but did not reach, significance (interaction $B = .32$, $b = 0.58$, $SE_b = .30$, $p = .06$). Mothers' Grade Expectations of daughters were associated with Warmth during the reading task ($r = .51$, $p < .01$), whereas for boys this relationship was nonsignificant ($r = -.02$).

Maternal Task Belief of Learning Something and Mothers' Learning-Focused Behaviors

As hypothesized, mothers who emphasized the importance of their child learning something from the shared-reading task provided significantly better Scaffolding ($B = .37$, $b = 0.34$, $SE_b = .12$, $p < .01$), asked more Specific Questions ($B = .31$, $b = 0.83$, $SE_b = .36$, $p < .05$), and provided more information ($B = .31$, $b = 1.03$, $SE_b = .48$, $p < .05$).

Maternal Task Belief of Having Fun and Mothers' Learning-Focused Behaviors

The task belief Having Fun significantly predicted Scaffolding ($B = .28$, $b = 0.32$, $SE_b = .16$, $p < .05$) and levels of Providing Information ($B = .33$, $b = 1.42$, $SE_b = .62$, $p < .05$).

Maternal Task Belief of Having Fun and Mothers' Emotional Tone

As hypothesized, mothers who emphasized the importance of Having Fun in the shared-reading task were significantly more likely to Praise their children ($B = .37$, $b = 0.55$, $SE_b = .20$, $p < .01$).

Maternal Task Belief of Having Fun and Child Behavior

The relationship between mothers' ratings of the importance of Having Fun and Child Engagement was moderated by child gender (interaction $B = .39$, $b = -0.53$, $SE_b = .25$, $p < .05$). Whereas boys were more likely to be engaged in the shared-reading task if their mothers considered Having Fun to be an important facet of the task ($r = .51$, $p < .05$), the relationship between maternal Having Fun beliefs and Child Engagement for girls was nonsignificant ($r = -.10$; see Figure 2).

Maternal Task Belief of Doing It Right and Mothers' Learning-Focused Behaviors

The relationship between the task belief Doing It Right and the number of Open-Ended Questions mothers asked was significantly moderated by child gender (interaction $B = .76$, $b = 0.64$, $SE_b = .24$, $p < .05$; see Figure 3). Mothers who rated Doing It Right as an important goal of shared reading were less likely to ask their sons Open-Ended Questions, though this simple relationship did not reach significance ($r = -.40$, $p = .06$); this relationship was in the opposite direction, though also nonsignificant, for daughters ($r = .25$).

Maternal Task Belief of Doing It Right and Mothers' Emotional Tone

The relationship between the maternal task belief Doing It Right and Maternal Warmth was moderated by child gender (interaction $B = .36$, $b = 0.30$, $SE_b = .14$, $p < .05$; see Figure 3). The simple relationships between the task belief Doing It Right and Maternal Warmth were in the opposite direction for girls ($r = .29$) and
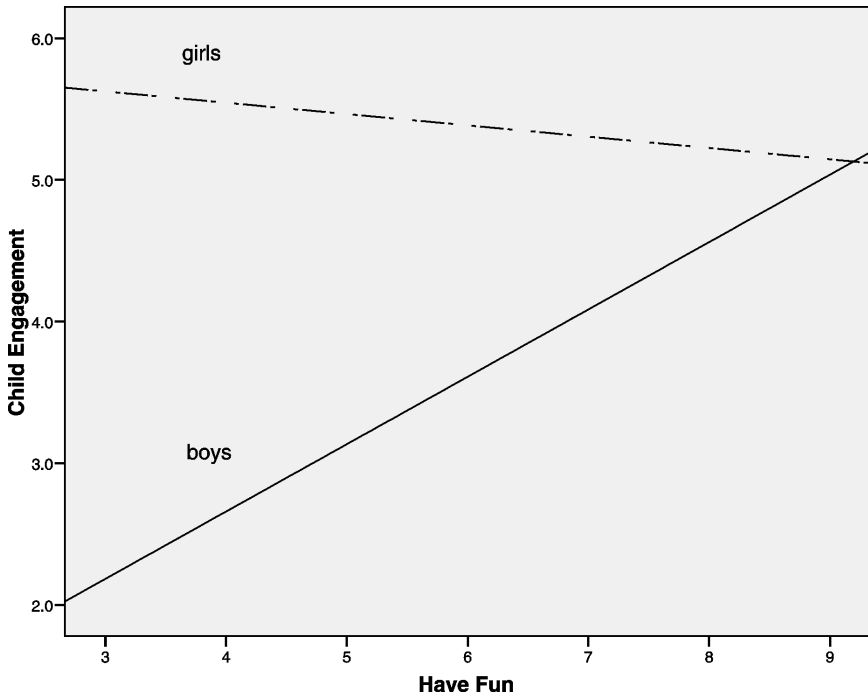
FIGURE 2   The relationship between the maternal reading task belief of having fun and child engagement, as moderated by child gender.

boys ($r = -.26$); although these relationships were significantly different from each other, as demonstrated by the significant interaction, neither simple relationship was significant.

DISCUSSION

This study examined associations between mothers' beliefs and mother and child behavior during shared reading. Few studies have brought together research on mothers' beliefs and observed behavior in the context of literacy development. Results support the hypothesis that mothers' beliefs about their children's future reading achievement and the goals of reading are related to their behaviors and to their children's behavior during reading. Causal relationships among these relationships could not be determined by the current data. It may well be that the relationship between beliefs and behavior is bidirectional, such that mothers' beliefs and expectations are shaped by their own and their children's behavior during shared reading, and vice versa.
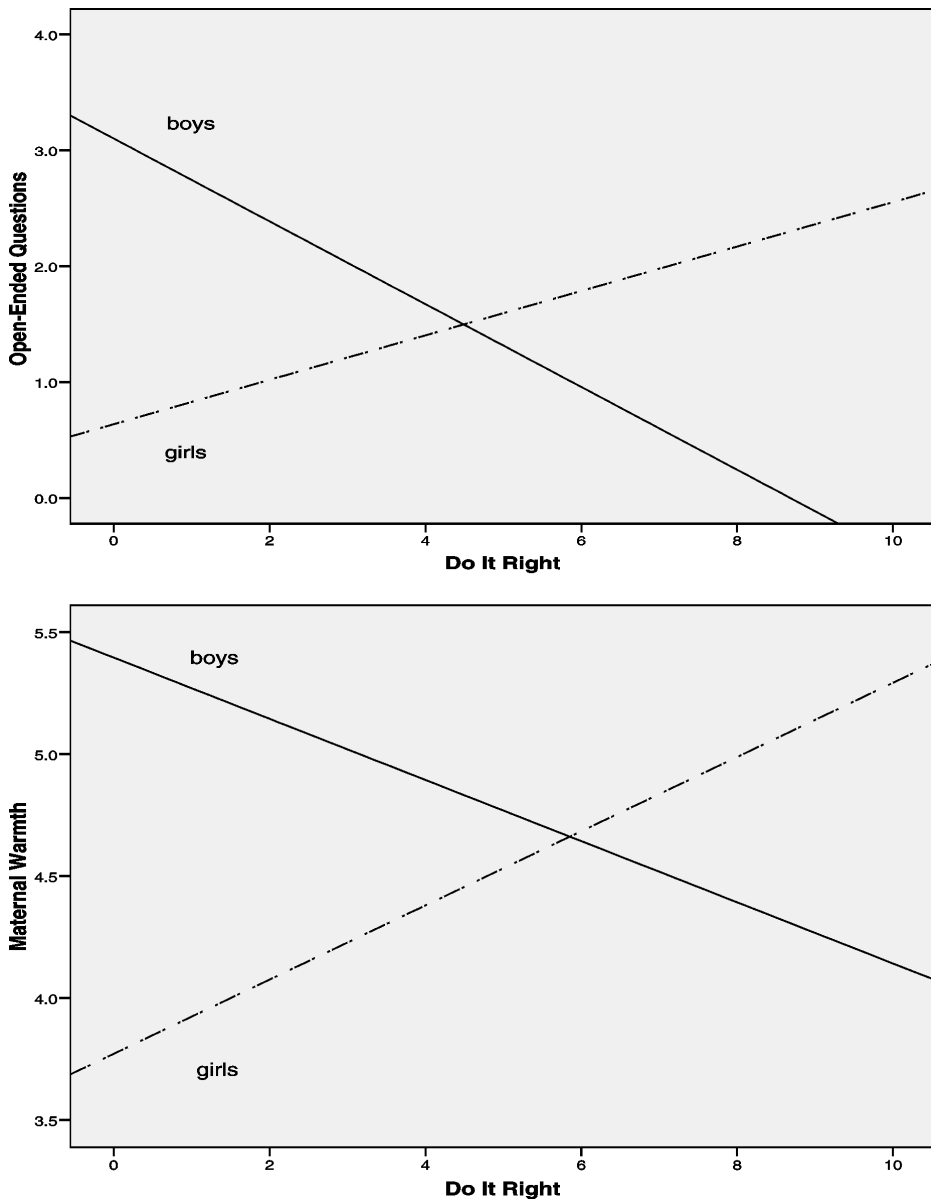
FIGURE 3   The relationships between the maternal reading task belief of doing it right and maternal open-ended questions (top) and maternal warmth (bottom), as moderated by child gender.

Contrary to hypotheses, no overall relationships were found between maternal grade expectations and observed behaviors during shared reading. However, gender moderated the relationship between grade expectations and scaffolding, such that expectations were positively related to scaffolding quality in girls, whereas no association was found for sons. The reasons for this gender difference are not clear; if replicated, future studies on the processes underlying this finding are needed.

Regarding maternal beliefs about shared reading, our hypothesis that endorsing the belief that reading is for learning would be associated with higher levels of maternal learning-focused behavior was supported. Mothers who believed that reading is for learning showed higher quality scaffolding, asked more specific questions, and provided more information. This finding is consistent with the research of Lynch and colleagues (2006), who found that parents who endorsed skills-focused beliefs about literacy development reported more teaching and participating behaviors during shared reading.

As hypothesized, endorsement of the belief that reading should be fun predicted higher levels of praise, one aspect of positive emotional tone. Although not anticipated, it also predicted higher levels of maternal learning-focused behaviors. These results are consistent with the idea that learning and positive emotion during shared reading are not incompatible. Correlational analyses support this interpretation, showing moderate to high associations among different types of beliefs and different types of behaviors. For example, mothers who expressed the belief that the task should include learning also tended to believe it should be fun. Theory and empirical evidence suggest that learning should best occur when children are interested and engaged (D. H. Arnold & Doctoroff, 2003; Sonnenschein & Munsterman, 2002). In practice, however, approaches have often emphasized either learning or engagement. These findings point to the potential value of integrating these emphases.

For boys, mothers' belief that reading should be fun was significantly related to children's engagement level. A similar relationship was not found for daughters. Although gender differences have not been a focus of previous research in this area, these findings suggest the possibility that beliefs in line with an entertainment approach (Serpell et al., 2005) may be particularly important for capturing boys' interest in shared reading, especially given our findings that boys showed lower levels of engagement overall. Further interpretation of this finding is limited by lack of data regarding children's concurrent reading skills. It is unclear the extent to which children's reading proficiency might factor into this relationship.

Mothers' endorsement of the Doing It Right belief was negatively related to open-ended questions among sons but not daughters. This finding suggests that mothers focused on doing the task correctly provided less opportunities for open-ended discussion with sons. As seen with maternal expectations, it appears that learning strategies are related differently to maternal beliefs depending on the

gender of the child. This finding points to the importance of examining domain-specific gender differences in parents' learning-focused beliefs and behaviors (Crowley et al., 2001; Tenenbaum & Leaper, 2003).

In contrast, mothers who endorsed the Doing It Right task belief showed more warmth with girls during the reading interaction, whereas this belief was associated with less warmth with boys. This finding provides some convergent evidence for gender differences found in the relationship between mothers' grade expectations and positive emotion described above. Together, these findings suggest that performance-related beliefs may be related to varying levels of positive emotion shown by mothers with daughters versus mothers with sons.

Our exploratory analyses of mean differences based on child gender revealed few differences. For example, mothers did not hold higher grade expectations of daughters than sons. The current data do not allow us to examine how mothers' expectations relate to children's actual skills, nor do they allow us to say whether mothers hold gender-stereotyped beliefs about reading more generally. We cannot say whether mothers' expectations are accurate and/or correspond to more general views about gender and academic skills. However, mothers held high expectations for their children's future reading skill, regardless of their children's gender, lending support to previous findings in this area (Herbert & Stipek, 2005). Similarly, there were no gender differences in mean levels of maternal positive emotion. Among learning-focused behaviors, only the number of specific questions differed significantly, with mothers asking girls more questions than boys. On the whole, these findings are encouraging in that mothers were observed to exhibit nearly comparable support, both affectively and in terms of specific learning behaviors during reading. Girls did show higher overall levels of engagement than boys. Previous studies of self-reported interest in reading among elementary schoolchildren have been inconsistent: Some have demonstrated that girls hold more positive views than boys (Kush & Watkins, 1996; Lynch, 2002), and others have shown no gender differences in reported interest (Baker & Scher, 2002).

Limitations of the study include its correlational nature, which precludes conclusions about causality. Specifically, the extent to which findings were driven by mothers versus children is unclear, though we expect relationships were bidirectional and reciprocal. Similarly, the mechanisms and processes underlying the identified relationships could not be untangled in this study. Study findings are also limited by lack of data concerning children's academic skills, which would allow more conclusions regarding the accuracy of mothers' expectations, and how girls' and boys' skill differences may impact differences seen in mothers' behavior and child engagement. The present study also did not include a measure of gender-stereotyped beliefs, and thus we could not determine whether variations in maternal beliefs and behaviors were related to stereotyped beliefs. Future work in this area would benefit from explicit measurement of these types of beliefs. In general, larger, more sophisticated studies will allow for comprehen-

sive models of these constructs and their interdependencies to be developed and tested.

Limited by power, this study did not consider contextual factors such as SES or ethnic differences in addition to gender. Future research should consider how parent influences differ with regard to individual child characteristics and a range of sociocultural factors. In particular, the construct of SES is multifaceted and complex. Poverty is associated with a host of disadvantages; although strong relationships between poverty and children's outcomes have been well demonstrated, the specific mechanisms responsible for these relationships are not well understood. Future studies need to carefully conceptualize and measure SES. As with many parenting studies, the present research was limited to maternal beliefs and behaviors; the role of fathers deserves more attention. Finally, this study also did not consider different types of reading. Different genres of reading, such as science literature, may elicit different parent beliefs and parent–child interactions (Ford et al., 2006; Tenenbaum et al., 2005).

Parent–child literacy activities are an important area of study for understanding aspects of children's academic development. This study advances understanding of the relationship between mothers' beliefs and behaviors during shared-reading activities by showing that what mothers believe is related to how they act during shared reading. It adds to the growing literature that parents may play an important role in building children's literacy skills and interest by conveying that reading is fun and interesting in addition to educational. This study also suggests that relationships among maternal beliefs and behaviors during shared reading vary to some extent for sons versus daughters, further highlighting the complexity of these relationships. Family-based reading interventions may be strengthened by focusing on parent beliefs as well as behaviors.

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