Developmental Psychology
1998, Vol. 34, No. 1, 3–27

0012-1649/98/$3.00

Moderators of Gender Effects on Parents' Talk to Their Children: A Meta-Analysis

Campbell Leaper, Kristin J. Anderson, and Paul Sanders
University of California, Santa Cruz

Two sets of meta-analyses of studies examining gender effects on parents' observed language with their children were conducted. One looked at studies comparing mothers and fathers in amount of talking, supportive speech, negative speech, directive speech, informing speech, and questions and requests. The other looked at studies comparing mothers' interactions with daughters versus with sons in amount of talking, supportive speech, and directive speech. Across studies, mothers tended to talk more (d = .26), use more supportive (d = .23) and negative (d = .13) speech, and use less directive (d = .19) and informing (d = .15) speech than did fathers. Also, mothers tended to talk more (d = .29) and use more supportive speech (d = .22) with daughters than with sons. Medium or large effect sizes occurred in most analyses when particular moderator variables were taken into account. Effect sizes varied, depending on aspects of the interactive setting, the child's age, sampling and measurement, and publication characteristics. The results are interpreted in relation to a contextual–interactive model of gender typing.

The purpose of the present review was to determine the extent of gender typing in parents' language with their children. Specifically, we sought to review two general research questions: First, do mothers and fathers differ in their language style with their children? Second, do parents differ in their language style with daughters versus with sons? These two questions pertain to the extent that there are speaker gender or child gender effects on parents' language behavior, respectively. In order to test for these overall effects, we conducted a series of meta-analyses on different language behaviors. Additionally, several moderating variables were examined.

The importance of language in the construction and maintenance of gender divisions has become a popular topic for research across several disciplines. For example, narrative reviews in the fields of developmental psychology (e.g., Leaper, 1986, 1991), social psychology (e.g., Aries, 1987), linguistics (e.g., Tannen, 1994), sociology (e.g., West & Zimmerman, 1985), and anthropology (e.g., Philips, 1980), as well as popular books (e.g., Tannen, 1990), have highlighted the various ways that women and men often differ in their speech styles. In general, these reviews indicate that women are more likely than men to use language to form and maintain connections with others, whereas men are more likely to use language to assert their independence and to achieve utilitarian goals. Similarly, studies looking at young children have indicated that girls are more likely than boys to use cooperative communication strategies, whereas boys are more apt to use controlling speech (e.g., Haslett, 1983; Leaper, 1991; Miller, Danaher, & Forbes, 1986; Sheldon, 1992). One possible source for the emergence of these gender differences is that children begin to learn gender-typed speech styles from their parents. Gleason (1987) is one of the first developmental psychologists to provide empirical evidence suggesting that mothers and fathers may talk differently with their children and that parents may talk differently with daughters and sons. In an article summarizing her research, Gleason (1987) wrote the following:

> Since by now it is well documented that there are differences in the ways grown men and women speak, it seems reasonable at this point to ask where those differences originate. . . . If children's language development is affected by the kinds of language they hear when interacting with adults, girls and boys may develop different kinds of language because they are spoken to differently. (pp. 189–190)

Others have similarly remarked on the importance of language as a tool in the socialization of gender (e.g., Cloran, 1989; Tomasello, Conti-Ramsden, & Ewert, 1990) and behavior in general (e.g., Schieffelin & Ochs, 1986; Vygotsky, 1978).

Although there have been several narrative reviews of parental gender-typing behaviors (e.g., Block, 1983; Fagot & Leinbach, 1987; Huston, 1983; Ruble & Martin, 1997), none of them has specifically focused on parents' different *language* behaviors. When child gender effects on parents' socialization behaviors have been observed, they generally indicate that boys receive more encouragement for self-assertion and for controlling emotional expression, whereas girls receive more encouragement for social engagement (see Block, 1983; Fagot & Leinbach, 1987). Among those studies examining parent gender differences, they

Campbell Leaper, Kristin J. Anderson, and Paul Sanders, Department of Psychology, University of California, Santa Cruz.

This research was supported by grants from the Academic Senate of the University of California, Santa Cruz (503035-19900) and the Social Sciences Division of the University of California, Santa Cruz (443060-09523).

Tera Hirsch, Tracy Marsh, Qhyrrae Michaelieu, and Kathleen Pettit are appreciated for their assistance. Litze Hu is thanked for her consultation.

Correspondence concerning this article should be addressed to Campbell Leaper, Department of Psychology, University of California, Santa Cruz, California 95064. Electronic mail may be sent via Internet to cam@cats.ucsc.edu.

generally indicate that mothers tend to demonstrate more sensitivity and responsiveness, whereas fathers tend to be more directive (see Block, 1983).

One problem in the research literature, however, is that the incidence of significant gender effects varies considerably. Although the direction of effects is generally consistent when differences do occur (see Block, 1983), often no significant gender effects are found (see Lytton & Romney, 1991; Maccoby & Jacklin, 1974). Meta-analytic reviews of the literature can be helpful in identifying overall trends in this regard. There have been two published meta-analyses examining aspects of parental gender typing (Lytton & Romney, 1991; Siegal, 1987). Both were concerned with child gender effects on parental socialization behaviors. Lytton and Romney (1991) carried out the more extensive of the two meta-analyses. They reviewed 158 North American studies across 19 socialization areas. Among the 19 socialization areas that Lytton and Romney (1991) reviewed, the only area in which there was a significant overall effect across 158 North American studies was the encouragement of gender-typed activities.[1] The effect was even larger with fathers than with mothers.[2]

Lytton and Romney's (1991) meta-analysis and Maccoby and Jacklin's (1974) earlier review have been cited as evidence for minimal parental gender-typing effects on children. For example, in a recent textbook on gender development, Beal (1994) wrote that "on the basis of studies available at the time, Maccoby and Jacklin (1974) concluded that there was surprisingly little evidence that parents treated sons and daughters differently, a point that has been echoed in more recent reviews of parents' behavior (Lytton & Romney, 1991)" (p. 8). Similar summaries appear in other gender texts (e.g., see Golombok & Fivush, 1994, p. 78; Lips, 1993, p. 270). It may be premature, however, to conclude that parents play an insignificant role in the gender typing of their children. Despite its many strengths, the Lytton and Romney (1991) meta-analysis also has its limitations.[3]

Separately analyzing different socialization behaviors was a major strength of Lytton and Romney's (1991) meta-analysis. However, their categories of socialization behaviors were somewhat broad, which—as Block (1979) has argued—decreases the likelihood that gender-differentiated effects will be detected. The range of measures in the different studies reviewed by Lytton and Romney included questionnaires, interviews, observations of verbal behaviors, and observations of nonverbal behaviors as well as various combinations of these measures. Also, they did not distinguish between verbal and nonverbal forms of behavior. However, the authors did compare studies using observational versus self-report methods. There was a nonsignificant trend toward larger effect sizes for studies using observational measures across all socialization areas. Lytton and Romney (1991) interpreted this difference to suggest that "methods that give more direct access to parental behaviors may reveal larger differences in the treatment of boys and girls than do interview or questionnaire methods, which allow parents to minimize such differences" (p. 286). Thus, the present meta-analysis specifically focused on observational studies of parents' speech behavior. Although the importance of nonverbal behaviors in the socialization process must also be acknowledged, we were particularly interested in how gender messages get communicated through language. As noted earlier, many writers have emphasized the importance of language as a tool in the socialization process in general (e.g., Schieffelin & Ochs, 1986; Vygotsky, 1978) and the socialization of gender in particular (e.g., Cloran, 1989; Tomasello et al., 1990).

A second limitation of the Lytton and Romney (1991) meta-analysis is that they only tested for child gender effects on parents' socialization behaviors. They did not investigate the extent that mothers and fathers differed themselves in behavior with their children. The different behaviors that mothers and fathers enact provide important lessons to children in the meaning of gender (Huston, 1983; Lott & Maluso, 1993). Therefore, in addition to surveying studies that examined child gender effects on parents' language behavior, we also looked at studies comparing mothers' and fathers' language behavior with their children.

Finally, the moderating variables investigated in the Lytton and Romney (1991) meta-analysis were limited to some aspects of the research procedure (method of data collection, child age) and publication characteristics (year of publication, author gender, publication source). Aspects of the interactive context (the physical setting, the activity structure) were not considered. Yet, recent contextual–interactive models of gender typing (e.g., Beall, 1993; Deaux & Major, 1987; Huston, 1985; O'Brien & Nagle, 1987) suggest that the incidence and magnitude of gender effects may largely depend on the particular situation. Therefore, aspects of the interactive setting were examined in the present study as possible moderator variables. Gender effects were expected to be greater in less structured, more naturalistic situations where the parent and the child are able to define their activity setting. In contrast, when the situation involves a highly structured activity, the demand characteristics of the assigned task were expected to minimize gender differences.

In summary, two sets of meta-analyses were carried out in the present investigation. First, we reviewed studies comparing fathers' and mothers' language with their children. Based on social–structural models of the traditional family (see Huston,

---

[1] Other socialization behaviors examined in Lytton and Romney's (1991) analyses were amount of interaction, warmth and responsiveness, encouragement of independence, disciplinary strictness, encouragement of achievement, and use of reasoning. In addition to the 158 North American studies, the authors also reviewed 17 studies from other Western countries. Among those studies, it was additionally found that physical punishment was applied more to sons than to daughters.

[2] Without distinguishing between different socialization behaviors, Siegal (1987) reviewed 39 studies and similarly found that overall differential treatment was significantly more likely with fathers than with mothers.

[3] Block (1976, 1979) discussed many of the same limitations of Maccoby and Jacklin's (1974) narrative review that we note about the Lytton and Romney (1991) meta-analysis. Also, although the Lytton and Romney (1991) meta-analysis is regularly reported in textbooks as evidence for lack of parental gender typing, other writers have criticized this interpretation. For example, Fagot and Hagan (1991) have written, "with the Maccoby and Jacklin review and the Lytton and Romney meta-analysis, it seems clear that if we sum across ages and behaviors, we will find few consistent differences in the socialization of the sexes. However, this does not mean that sex-role socialization is unimportant, but that findings within this area are very likely to be age- and behavior-specific" (p. 628).

1983), mothers were hypothesized to use more language emphasizing a socioemotional orientation (total talking and supportive speech). In contrast, fathers were hypothesized to use more language emphasizing an instrumental and control-oriented style (directives, negative comments, informational statements). A second set of analyses reviewed studies comparing mothers' speech with daughters versus with sons. The latter set of analyses were limited to mothers only due to the relatively small number of studies comparing fathers' language with daughters and with sons. Based on past reviews of the gender-typing research (see Block, 1979, 1983; Fagot & Leinbach, 1987; Huston, 1983; Whiting & Edwards, 1988), mothers were expected to use more language emphasizing closeness in daughters (total talking and supportive speech) and more language emphasizing task orientation in sons (directives). However, in both sets of meta-analyses, we expected that the magnitude of the hypothesized gender effects would depend on the targeted moderator variables.

METHOD

Literature Search

Studies examining gender-related effects on parents' language to their children were collected through a variety of sources. Most of the studies were identified through computerized searches of the *Psychological Abstracts*. Additionally, we checked potentially relevant studies cited in these articles. The dates of publication for the collected studies range from 1969 to 1993.

Three selection criteria were used: (a) Only studies that tested for either parent gender or child gender effects on parents' language behavior were used; specifically, we looked for studies testing for parent gender effects on parents' language behavior or child gender effects on mothers' language behavior (there were not a sufficient number of studies to test for child gender effects on fathers' language behavior); (b) only studies using quantitative observational measures were included; therefore, self-report studies of parents' verbal behaviors—which were rare—were excluded; and (c) only studies published in either research journals or books were included. Although published studies may be more biased than unpublished studies toward reporting significant effects, this was not indicated with our samples of studies (described later).

Language Variables

As reviewed in the introduction, studies have previously identified various language measures associated with gender-related effects among parents. They include (a) amount of talking, (b) supportive speech, (c) negative speech, (d) directive speech, (e) giving information, and (f) asking questions or requesting information. The first two authors were able to classify language variables into one of these categories with high reliability ($\kappa = .84$). According to Bakeman and Gottman (1986), kappa levels above .70 reflect "excellent" agreement.

All of the language measures were based on either frequency, proportion, or rate scores. None of the measurements were based on conditional probabilities. Each language variable is further described below.

Amount of Talking

A distinction was made between the following operational definitions of amount of talking: (a) number of words or utterances, (b) rate or time sampling, (c) mean length of utterance (MLU) or words per turn, (d) duration of talking, and (e) number of conversational turns. Among those studies testing for mother–father differences in talkativeness, there was a total of 501 families in 18 published studies, for an average sample size of 28. Among those studies testing for differences in mothers' talkativeness with daughters versus with sons, there was a total of 793 families in 25 published studies, for an average sample size of 32.

Supportive Speech

Supportive speech included any measures of positively responsive language, such as praise, approval, agreement, acknowledgment, or collaboration. There was not a sufficient number of studies to consider different operational definitions as a moderating variable. Among those studies comparing mothers' and fathers' supportive language, there were 295 families in 10 published studies, for an average sample size of 30. Among those studies comparing mothers' supportive language with sons versus with daughters, there were 508 families in 11 studies, for an average sample size of 46. Among these 11 studies, 2 of them are based on separate analyses of the same sample in the home and in the lab (Crockenberg & Litman, 1991). In order to consider both findings from the same report, these two entries were weighted by half of the study's sample size when computing weighted effect sizes. Both findings were then entered into the meta-analysis as separate hypothesis tests.

Negative Speech

Negative speech was defined as criticism, disapproval, or disagreement. Among those studies comparing mothers' and fathers' negative language, there were 383 families in nine studies, for an average sample size of 43. There was not a sufficient number of studies to do a meta-analysis comparing mothers' negative speech with sons versus with daughters.

Directive Speech

Directive speech included imperative statements or direct suggestions. Among those studies comparing mothers' and fathers' directive language, there were 449 families in 12 published studies, for an average sample size of 37. Among those studies comparing mothers' directive language with sons and with daughters, there were 944 families in 16 studies, for an average sample size of 59. Among these 16 studies, 2 of them are based on separate analyses of the same sample in the home and in the lab (Crockenberg & Litman, 1991). Both findings were entered using the procedure described previously in the section on supportive speech.

Giving Information

Informing speech included descriptive statements, opinions, or explanations. Often the measure was described in studies as "giving information." There were 545 families in 12 studies, for an average sample size of 45 among those studies comparing mothers' and fathers' informing speech. There was not a sufficient number of studies comparing mothers' informing speech to daughters versus sons to carry out a corresponding meta-analysis.

Questions

For this language variable, a distinction was made between measures of total questions, "wh-" questions, yes–no questions, or general requests for information. There was not a sufficient number of studies looking at child gender effects on mothers' use of questions. However, among studies comparing mothers' and fathers' questions, there were 401 families in 13 studies, for an average sample size of 31 families. Of these 13 studies, there was one report in which two different measures of questions were used (O'Brien & Nagle, 1987), and there was another report in which three different measures of questions were used (Mc-

Laughlin, White, McDevitt, & Raskin, 1983). In order to include these different measures in the tests, the one study that was used twice was weighted by one half of the study's sample size, and the one other study that was used three times was weighted by one third of the study's sample size. Thus, when this procedure was used, there was a total of 16 studies entered into the meta-analysis.

Other Moderator Variables

In addition to investigating the magnitude of parent gender and child gender effects associated with the different language behaviors, several moderator variables were also examined. Each of these factors is summarized here. Also, the characteristics for each moderator variable associated with each study are presented for each meta-analysis in Tables 1–9.

Publication Characteristics

First author's gender (female or male), publication status (top-ranked journal or other source), and year of study are three features of the publication source that were investigated. With publication status, top-ranked journals included the following: any American Psychological Association (APA) journal (e.g., *Developmental Psychology, Journal of Personality and Social Psychology*) or Society for Research in Child Development (SRCD) journal (*Child Development* or *Monographs of the Society for Research in Child Development*). Otherwise, the publication status was classified as coming from another source, which included books or other journals. Although many excellent studies are often published in other sources, APA and SRCD journals are among the most selective journals for publication, and they consistently publish work considered of very high quality.

Sampling and Measurement

As previously noted, the operational definition used for the amount of talking was investigated as a possible moderator variable. Additionally, two other investigated aspects of sampling and measurement were the child's age level and the length of the observation. The average child age level was broken down into the following categories: infancy (0–12 months), toddlerhood (12–24 months), preschool/early childhood

Table 1
Mothers Versus Fathers: Amount of Talking by Operational Definition

Study	Statistic	*N*	Fisher's *Z*	Cohen's *d*	Author	Source	Months	Level	Length	Match	Setting	Toys	Directions
Total words													
Austin & Braeger (1990)[a]													
(1-month olds)	$F = 5.37$	40	0.37	0.75	1	2	1	1	30	3	2	2	1
(22-month olds)	$F = 6.14$	40	−0.39	−0.80	1	2	22	2	30	3	2	2	1
Golinkoff & Ames (1979)	$F = 6.25$	12	0.73	1.58	1	1	19	2	30	3	2	3	1
Hladik & Edwards (1984)	$p = .5$	10	0.00	0.00	1	2	33	3	60	3	1	1	1
Masur & Gleason (1980)	$p = .5$	14	0.00	0.00	1	1	69	3	10	1	2	2	2
McLaughlin et al. (1983)	$p = .5$	24	0.00	0.00	2	2	30	2	16	1	1	3	1
Pedersen et al. (1982)	$F = 10.24$	41	0.49	1.02	2	2	5	1	210	3	1	1	1
Rondal (1980)	$p = .05$	5	0.94	2.17	3	2	24	2		1	1	4	3
Duration of talking													
Brundin et al. (1988)	$p = .5$	40	0.00	0.00	1	2	6	1	14	1	1	2	1
Noller (1980)	$p = .5$	20	0.00	0.00	1	1	78	4	15	2	2	3	1
Reese & Fivush (1993)	$p = .5$	24	0.00	0.00	1	1	40	3		1	1	1	3
Mean length of utterance													
Mullis & Mullis (1985)	$p = .5$	32	0.00	0.00	2	2	104	4		1	1	2	2
O'Brien & Nagle (1987)	$p = .5$	20	0.00	0.00	1	2	21	2	12	1	2	2	1
Time sampling or rate													
Clarke-Stewart (1978)	$F = 25.09$	14	1.16	2.89	1	1	20	2	360	1	1	1	1
Stuckey et al. (1982)	$p = .01$	40	0.39	0.79	1	1	49	4	45	2	1	1	1
Other													
Brody et al. (1986)	$p = .5$	23	0.00	0.00	2	1	78	4	6	1	2	4	2
Field (1978)	$p = .5$	36	0.00	0.00	1	1	4	1	9	1	2	1	1
Hunter et al. (1987)	$p = .5$	66	0.00	0.00	2	1	9	1	360	1	1	1	1

Note. A positive effect size (*Z* or *d*) indicates that mothers were higher than fathers in amount of talking. Author = first author's gender (1 = *female*, 2 = *male*); Source = publication source (1 = *top-ranked journal*, 2 = *lower ranked journal* or *book*); Months = mean child age in months; Level = child age level (1 = *infant*, 2 = *toddler*, 3 = *preschool*, 4 = *middle childhood*, 5 = *adolescence*); Length = length of observation (in minutes); Match = mother–father matching (1 = *mother and father observed separately with child*, 2 = *mother and father observed together with child*, 3 = *both types of matching used*); Setting = observational setting (1 = *home*, 2 = *lab*, 3 = *other*); Toys = toys provided (1 = *no toys provided*, 2 = *toys specified*, 3 = *toy choice allowed*, 4 = *mixed–other*); Directions = directions to parents (1 = *nonspecific*, 2 = *problem-solving task*, 3 = *mixed–other*).

[a] Austin and Braeger (1990) reported findings for a sample of 1-month-olds and a separate sample of 22-month-olds.

Table 2
Mothers Versus Fathers: Supportive Language

Study	Statistic	N	Fisher's Z	Cohen's d	Author	Source	Months	Level	Length	Match	Setting	Toys	Directions
Brody et al. (1986)	$p = .5$	23	0.00	0.00	2	1	78	4	6	1	2	4	2
Caldera et al. (1989)	$p = .5$	40	0.00	0.00	1	1	20	2	24	1	2	2	1
Fagot (1978)	$p = .5$	24	0.00	0.00	1	1	22	2	300	2	1	1	1
Frankel & Rollins (1983)	$p = .5$	36	0.00	0.00	2	1	73	4	16	1	1	2	2
Greif & Gleason (1980)	$\chi^2 = 4.95$	22	0.52	1.08	1	2	42	3	2	1	2	1	1
Grotevant & Cooper (1985)	$p = .5$	84	0.00	0.00	2	1	211	5	20	2	2	1	2
Mannle & Tomasello (1987)	$T = 2.26$	17	0.55	1.17	1	2	15	2	15	1	1	3	1
O'Brien & Nagle (1987)	$p = .5$	20	0.00	0.00	1	2	21	2	12	1	2	2	1
Rondal (1980)	$p = .5$	5	0.00	0.00	3	2	24	2	n/a	1	1	4	3
Tomasello et al. (1990)	$F = 7.57$	24	0.56	1.17	2	2	33	2	15	1	1	3	1

Note. A positive effect size (*Z* or *d*) indicates that mothers were higher than fathers in amount of supportive language. Author = first author's gender (1 = *female*, 2 = *male*); Source = publication source (1 = *top-ranked journal*, 2 = *lower ranked journal or book*); Months = mean child age in months; Level = child age level (1 = *infant*, 2 = *toddler*, 3 = *preschool*, 4 = *middle childhood*, 5 = *adolescence*); Length = length of observation (in minutes); Match = mother–father matching (1 = *mother and father observed separately with child*, 2 = *mother and father observed together with child*, 3 = *both types of matching used*); Setting = observational setting (1 = *home*, 2 = *lab*, 3 = *other*); Toys = toys provided (1 = *no toys provided*, 2 = *toys specified*, 3 = *toy choice allowed*, 4 = *mixed–other*); Directions = directions to parents (1 = *nonspecifc*, 2 = *problem-solving task*, 3 = *mixed–other*).

(25–48 months), middle childhood (49–120 months), and adolescence (121 months and above). As described in the RESULTS section, some of these age levels were collapsed in particular meta-analyses involving few total studies.

We also collected information on the socioeconomic background of the participants and the location of the study. Studies including samples other than middle-class, European American families were too few to permit testing for ethnicity or economic status as potential moderator variables. Also, although there was variation in the geographical regions of the different studies, the effects did not demonstrate any consistent or meaningful patterns across the different meta-analyses. Consequently, these results are not presented.

Features of the Interactive Context

Four aspects of the interactive context were tested as potential moderator variables. First, the matching procedure used in comparisons of mother–father language was examined. A distinction was made between studies in which (a) mothers and fathers were observed separately with their child, (b) mothers and fathers were observed together with their child, or (c) a mixed or other procedure was used. Second, the *observational setting* was examined as a moderator variable. A distinction was made between studies that took place in (a) the family's home, (b) a research laboratory, or (c) somewhere else (e.g., a preschool). Third, a comparison was made between studies in which the directions to the parent (a) were nonspecific, (b) involved carrying a problem-solving task, or (c) were mixed. The latter category referred to studies in which a combination of unstructured and structured tasks were assigned. There was high intercoder agreement in the classification of this variable (*kappa* coefficient = .86). Finally, the use of toys was tested as a moderator variable. Specifically, studies were compared based on whether they (a) did not use toys, (b) assigned specific toys for use, (c) provided a choice of toys, or (d) involved a mixture of options for

Table 3
Mothers Versus Fathers: Negative Language

Study	Statistic	N	Fisher's Z	Cohen's d	Author	Source	Months	Level	Length	Match	Setting	Toys	Directions
Brody et al. (1986)	$p = .5$	23	0.00	0.00	2	1	78	4	6	1	2	4	2
Clarke-Stewart (1978)	$F = 11.03$	14	−0.85	−1.92	1	1	20	2	360	1	1	1	1
Fagot (1978)	$F = 7.61$	24	−0.56	−1.18	1	1	22	2	300	2	1	1	1
Frankel & Rollins (1983)	$p = .5$	36	0.00	0.00	2	1	73	4	16	1	1	2	2
Grotevant & Cooper (1985)	$p = .5$	84	0.00	0.00	2	1	211	5	20	2	2	1	2
Leaper et al. (1989)	$p = .5$	32	0.00	0.00	2	2	174	5		2	2	1	3
Noller (1980)	$p = .5$	20	0.00	0.00	1	1	78	4	15	2	2	3	1
Rondal (1980)	$p = .5$	5	0.00	0.00	3	2	24	2		1	1	4	3
Tauber (1979)	$p = .5$	145	0.00	0.00	1	1	108	4	30	1	3	3	1

Note. A positive effect size (*Z* or *d*) indicates that fathers were higher than mothers in amount of negative language. Author = first author's gender (1 = *female*, 2 = *male*); Source = publication source (1 = *top ranked journal*, 2 = *lower ranked journal or book*); Months = mean child age in months; Level = child age level (1 = *infant*, 2 = *toddler*, 3 = *preschool*, 4 = *middle childhood*, 5 = *adolescence*); Length = length of observation (in minutes); Match = mother–father matching (1 = *mother and father observed separately with child*, 2 = *mother and father observed together with child*, 3 = *both types of matching used*); Setting = observational setting (1 = *home*, 2 = *lab*, 3 = *other*); Toys = toys provided (1 = *no toys provided*, 2 = *toys specified*, 3 = *toy choice allowed*, 4 = *mixed/other*); Directions = directions to parents (1 = *nonspecific*, 2 = *problem-solving task*, 3 = *mixed/other*).

Table 4
Mothers Versus Fathers: Directive Language

Study	Statistic	*N*	Fisher's *Z*	Cohen's *d*	Author	Source	Months	Level	Length	Match	Setting	Toys	Directions
Bellinger & Gleason (1982)	$F = 3.66$	10	0.63	1.35	2	2	42	3	30	1	2	2	3
Brody et al. (1992)	$p = .5$	109	0.00	0.00	2	1	96	4	20	1	1	2	3
Caldera et al. (1989)	$p = .5$	40	0.00	0.00	1	1	20	2	24	1	2	2	1
Grotevant & Cooper (1985)	$F = 3.32$	84	0.20	0.40	2	1	211	5	20	2	2	1	2
Hladik & Edwards (1984)	$p = .5$	10	0.00	0.00	1	2	33	3	60	3	1	1	1
Kerig et al. (1993)	$p = .5$	38	0.00	0.00	1	1	38	3	10	1	2	3	3
McLaughlin et al. (1980)	$F = 18.99$	24	0.83	1.86	2	2	30	3	16	1	1	3	1
Mullis & Mullis (1985)	$F = 5.36$	32	0.41	0.85	2	2	104	4		1	1	2	2
O'Brien & Nagle (1987)	$p = .5$	20	0.00	0.00	1	2	21	2	12	1	2	2	1
Rasku-Puttonen (1983)	$p = .5$	40	0.00	0.00	1	2	72	4	19	1	2	2	2
Rondal (1980)	$p = .5$	5	0.00	0.00	3	2	24	2		1	1	4	3
Roopnarine & Adams (1987)	$F = 4.19$	37	−0.34	−0.69	1	2	54	3	8	2	2	2	2

Note. A positive effect size (*Z* or *d*) indicates that fathers were higher than mothers in amount of directive language. Author = first author's gender (1 = *female*, 2 = *male*); Source = publication source (1 = *top ranked journal*, 2 = *lower ranked journal or book*); Months = mean child age in months; Level = child age level (1 = *infant*, 2 = *toddler*, 3 = *preschool*, 4 = *middle childhood*, 5 = *adolescence*); Length = length of observation (in minutes); Match = mother–father matching (1 = *mother and father observed separately with child*, 2 = *mother and father observed together with child*, 3 = *both types of matching used*); Setting = observational setting (1 = *home*, 2 = *lab*, 3 = *other*); Toys = toys provided (1 = *no toys provided*, 2 = *toys specified*, 3 = *toy choice allowed*, 4 = *mixed/other*); Directions = directions to parents (1 = *nonspecific*, 2 = *problem-solving task*, 3 = *mixed/other*).

toy use. The intercoder agreement on the use of toys in studies was high (κ coefficient = .93).

Statistical Analyses

We used Mullen's (1989) meta-analysis software to carry out the statistical analyses. Mullen's program provides the following information for the meta-analysis of effect sizes: funnel plots of effect sizes by sample sizes, combined effect sizes across studies, and focused comparison tests of effect sizes on blocked and continuous moderator variables.

Funnel Plots

The funnel plot is a way to inspect whether there is variability in the sample estimates of effect size. When the scores in the lower left quadrant are underrepresented, it suggests there may be a bias against the publication of nonsignificant results (Mullen, 1989, p. 75). This pattern was not indicated in the funnel plots for any of the present meta-analyses. In other words, our use of only published studies does not appear to have led to a disproportionately high number of studies with significant results. Given the often standard practice among researchers to test for gender differences, it may be that null results are more commonly reported for gender than for most other variables.

Table 5
Mothers Versus Fathers: Informing Language

Study	Statistic	*N*	Fisher's *Z*	Cohen's *d*	Author	Source	Months	Level	Length	Match	Setting	Toys	Directions
Brody et al. (1986)	$p = .5$	23	0.00	0.00	2	1	78	4	6	1	2	4	2
Bronstein (1984)	$T = 1.75$	78	0.20	0.40	1	1	108	4	6	3	1	1	1
Caldera et al. (1989)	$p = .5$	40	0.00	0.00	1	1	20	2	24	1	2	2	1
Frankel & Rollins (1983)	$p = .5$	36	0.00	0.00	2	1	73	4	16	1	1	2	2
Grotevant & Cooper (1985)	$F = 3.09$	84	0.19	0.39	2	1	211	5	20	2	2	1	2
McGillicudy-DeLisi (1988)	$p = .5$	120	0.00	0.00	1	1	48	3	5	1	2	2	2
McLaughlin et al. (1980)	$p = .5$	24	0.00	0.00	2	2	30	3	16	1	1	3	1
O'Brien & Nagle (1987)	$p = .5$	20	0.00	0.00	1	2	21	2	12	1	2	2	1
Pellegrini et al. (1987)	$F = 7.42$	54	0.37	0.76	2	2	36	3	3	3	1	3	1
Reese & Fivush (1993)	$p = .5$	24	0.00	0.00	1	1	40	3		1	1	1	3
Rondal (1980)	$p = .05$	5	0.95	2.20	3	2	24	2		1	1	4	3
Roopnarine & Adams (1987)	$F = 5.60$	37	−0.39	−0.80	1	2	54	3	8	2	2	2	2

Note. A positive effect size (*Z* or *d*) indicates that fathers were higher than mothers in amount of informing language. Author = first author's gender (1 = *female*, 2 = *male*); Source = publication source (1 = *top ranked journal*, 2 = *lower ranked journal or book*); Months = mean child age in months; Level = child age level (1 = *infant*, 2 = *toddler*, 3 = *preschool*, 4 = *middle childhood*, 5 = *adolescence*); Length = length of observation (in minutes); Match = mother–father matching (1 = *mother and father observed separately with child*, 2 = *mother and father observed together with child*, 3 = *both types of matching used*); Setting = observational setting (1 = *home*, 2 = *lab*, 3 = *other*); Toys = toys provided (1 = *no toys provided*, 2 = *toys specified*, 3 = *toy choice allowed*, 4 = *mixed/other*); Directions = directions to parents (1 = *nonspecific*, 2 = *problem-solving task*, 3 = *mixed/other*).

Table 6
Mothers Versus Fathers: Questions and Requests for Information by Operational Definition

Study	Statistic	*N*	Fisher's *Z*	Cohen's *d*	Author	Source	Months	Level	Length	Match	Setting	Toys	Directions
General questions													
Brody et al. (1986)	$p = .5$	23	0.00	0.00	2	1	78	4	6	1	2	4	2
Caldera et al. (1989)	$p = .5$	40	0.00	0.00	1	1	20	2	24	1	2	2	1
Hladik & Edwards (1984)	$p = .5$	10	0.00	0.00	1	2	33	3	60	3	1	1	1
McGillicuddy-DeLisi (1988)	$F = 3.86$	120	0.18	0.36	1	2	48	3	5	1	2	2	2
McLaughlin et al. (1983)	$p = .5$	24	0.00	0.00	2	2	30	3	16	1	1	3	1
Roopnarine & Adams (1987)	$F = 4.34$	37	−1.48	−4.17	1	2	54	3	8	2	2	2	2
Yes–no questions													
McLaughlin et al. (1983)	$F = 4.86$	24	−0.45	−0.94	2	2	30	3	16	1	1	3	1
O'Brien & Nagle (1987)	$p = .5$	20	0.00	0.00	1	2	21	2	12	1	2	2	1
Rondal (1980)	$p = .5$	5	0.00	0.00	3	2	24	2		1	1	4	3
"Wh" questions													
McLaughlin et al. (1983)	$F = 2.37$	24	0.32	0.66	2	2	30	3	16	1	1	3	1
O'Brien & Nagle (1987)	$F = 5.35$	20	0.52	1.09	1	2	21	2	12	1	2	2	1
Rondal (1980)	$p = .5$	5	0.00	0.00	3	2	24	2		1	1	4	3
Information requests													
Grotevant & Cooper (1985)	$p = .5$	84	0.00	0.00	2	1	211	5	20	2	2	1	2
Masur & Gleason (1980)	$F = 3.69$	14	0.53	1.11	1	1	69	3	10	1	2	2	2
Reese & Fivush (1993)	$p = .5$	24	0.00	0.00	1	1	40	3		1	1	1	3
Tomasello et al. (1990)	$p = .05$	24	0.35	0.72	2	2	33	2	15	1	1	3	1

Note. A positive effect size (*Z* or *d*) indicates that fathers were higher than mothers in questions or requests for information. Author = first author's gender (1 = *female*, 2 = *male*); Source = publication source (1 = *top ranked journal*, 2 = *lower ranked journal or book*); Months = mean child age in months; Level = child age level (1 = *infant*, 2 = *toddler*, 3 = *preschool*, 4 = *middle childhood*, 5 = *adolescence*); Length = length of observation (in minutes); Match = mother–father matching (1 = *mother and father observed separately with child*, 2 = *mother and father observed together with child*, 3 = *both types of matching used*); Setting = observational setting (1 = *home*, 2 = *lab*, 3 = *other*); Toys = toys provided (1 = *no toys provided*, 2 = *toys specified*, 3 = *toy choice allowed*, 4 = *mixed/other*); Directions = directions to parents (1 = *nonspecific*, 2 = *problem-solving task*, 3 = *mixed/other*).

Combined Significance Levels and Effect Sizes

When investigating the central tendency of results for each language variable across studies, we used the standard normal deviate *Z* as a metric of significance level and both Fisher's *Z* and Cohen's *d* as measures of effect size (Mullen, 1989). Rosenthal and Rosnow (1984) characterized effect sizes as "small" when $d = .2$, "medium" when $d = .5$, and "large" when $d = .8$. An effect size below $d = .2$ is negligible.

Focused Comparisons

Focused comparisons of significance levels and effect sizes were carried out with *Z* for significance levels and Fisher's *Z* for effect sizes. Both unweighted and weighted (by sample size) measures were computed. The results from the focused comparison tests with the categorical predictor variables are summarized in Tables 10–18 and described in the text. In addition, the correlations from the focused comparisons with continuous predictors are presented in the text.

RESULTS

Part 1: Mothers' Versus Fathers' Language

The effect of parent gender on parents' language behavior with their children was investigated. Specifically, parent gender effects on amount of talking, supportive speech, negative speech, directive speech, informing speech, and questions were analyzed separately.

The following categorical variables were tested as possible moderators: author's gender, publication status, child age level, matching, observational setting, directions to parent, and use of toys. Operational definition was also tested as a moderator with amount of talking and questions. Focused comparison tests of significance levels and effect sizes were carried out with each language variable for these predictor variables. The results from these comparison tests are presented for the six language measures in Tables 10–15, respectively. Both unweighted and weighted (by sample size) effect sizes are indicated.

In addition, year of study, child's age (in months), and length of observation are continuous variables that were investigated as possible moderators. Correlations between the continuous moderator variables and Fisher's *Z* effect sizes (weighted by sample size) are reported in the text below.

Amount of Talking

Parent Gender

Among those investigations testing for mother–father differences in talkativeness, the average effect size was $d = .20$. When

Table 7
Mothers' Amount of Talking to Daughters Versus Sons by Operational Definition

Study	Statistic	*N*	Fisher's *Z*	Cohen's *d*	Author	Source	Months	Level	Length	Setting	Toys	Directions
Total words												
Austin & Braeger (1990)[a]												
(1-month-olds)	$p = .5$	40	0.00	0.00	1	2	1	1	15	2	2	1
(22-month-olds)	$p = .02$	40	0.34	0.69	1	2	22	2	15	2	2	1
Bellinger & Gleason (1982)	$p = .5$	10	0.00	0.00	2	2	42	3	30	2	2	3
Cherry & Lewis (1976)	$p = .03$	12	0.61	1.29	1	1	24	2	15	2	3	1
DeLoache & DeMendoza (1987)	$p = .5$	30	0.00	0.00	1	2	15	2		2	3	2
Halverson & Waldrop (1970)	$p = .01$	42	0.38	0.77	2	1	30	3		3	3	2
Schaffer & Crook (1979)	$F = 10.90$	24	0.66	1.41	2	1	20	2	8	2	2	1
Stoneman & Brody (1981)	$T = 2.46$	18	0.58	1.23	1	1	24	2	3	1	3	1
Duration of talking												
Brundin et al. (1988)	$p = .5$	40	0.00	0.00	1	2	6	1	14	1	2	1
Noller (1980)	$p = .5$	20	0.00	0.00	1	1	78	4	15	2	3	1
Reese & Fivush (1993)	$p = .5$	24	0.00	0.00	1	1	40	3		1	1	3
Mean length of utterance												
Fraser & Roberts (1975)	$p = .5$	32	0.00	0.00	2	2	42	3		2	3	2
Mullis & Mullis (1985)	$p = .5$	32	0.00	0.00	2	2	114	4		1	2	2
Phillips (1973)	$p = .5$	30	0.00	0.00	1	1	18	2	30	2	1	1
Time sampling or rate												
Cohen & Beckwith (1976)	$p = .5$	36	0.00	0.00	1	1	4	1	260	1	1	1
Endsley et al. (1979)	$T = 3.67$	40	0.56	1.19	2	1	66	3	20	3	3	1
Gunnar & Donahue (1980)	$p = .5$	84	0.00	0.00	1	1	9	1	5	2	3	1
Jacobs & Moss (1976)	$p = .5$	64	0.00	0.00	1	1	14	1	360	1	1	1
Lewis (1972)	$T = 2.04$	32	0.36	0.74	2	2	3	1	120	1	1	1
Thoman et al. (1972)[b]												
(primiparous mothers)	$F = 4.43$	20	0.48	0.99	1	1	0.1	1	20	3	1	1
(multiparous mothers)	$p = .5$	20	0.00	0.00	1	1	0.1	1	20	3	1	1
Weinraub & Frankel (1977)	$p = .05$	20	0.39	0.80	1	1	19	2	10	2	3	1
Other												
Ling & Ling (1974)	$T = 0.90$	48	−0.13	−0.27	2	2	12	1	60	1	1	1
Noller (1978)[c]												
(married mothers)	$p = .05$	47	0.25	0.50	1	1	48	3		3	1	1
(single mothers)	$p = .5$	20	0.00	0.00	1	1	48	3		3	1	1

Note. A positive effect size (*Z* or *d*) indicates that mothers talked more with daughters than sons. Author = first author's gender (1 = *female*, 2 = *male*); Source = publication source (1 = *top ranked journal*, 2 = *lower ranked journal or book*); Months = mean child age in months. Level = child age level (1 = *infant*, 2 = *toddler*, 3 = *preschool*, 4 = *middle childhood*, 5 = *adolescence*); Length = length of observation (in minutes); Setting = observational setting (1 = *home*, 2 = *lab*, 3 = *other*); Toys = toys provided (1 = *no toys provided*, 2 = *toys specified*, 3 = *toy choice allowed*, 4 = *mixed/other*); Directions = directions to parents (1 = *nonspecific*, 2 = *problem-solving task*, 3 = *mixed/other*).
[a] Austin and Braeger (1990) reported findings for a sample of 1-month olds and a separate sample of 22-month olds. [b] Thoman et al. (1972) reported separate analyses of primiparous mothers and multiparous mothers. [c] Noller (1978) reported findings from separate analyses of married mothers and single mothers.

weighted by sample size, the average effect size was $d = .26$. The positive effect size indicates that mothers tended to be more talkative with their children than were fathers.

Other Moderator Variables

Publication characteristics. Neither publication source nor first author's gender was associated with significant differences in effect sizes, as seen in Table 10. A negative correlation occurred between the year of the study and the effect size, $r(18) = -.53$, $p < .05$, suggesting that observing mother–father differences in talkativeness had become less likely over time.

Sampling and measurement. As summarized in Table 10, comparison tests did not indicate significant differences between the different age levels. However, when infant and toddler children together were compared with older children, a significant difference was obtained ($Z = 1.87$, $p < .05$). Effect sizes were significantly larger among parents of infants and toddlers than among parents of older children. We also tested for the correlation between children's age (in months) and Fisher's *Z* effect sizes. There was a small, negative correlation that similarly suggested mother–father differences in talkativeness declined as children got older, $r(18) = -.26$, *ns*. As shown in Table 10, focused comparisons indicated significant differences between

Table 8
Mothers' Amount of Supportive Language to Daughters Versus Sons

Study	Statistic	*N*	Fisher's *Z*	Cohen's *d*	Author	Source	Months	Level	Length	Setting	Toys	Directions
Caldera et al. (1989)	$p = .5$	40	0.00	0.00	1	1	20	2	24	2	2	1
Cherry & Lewis (1976)	$p = .5$	12	0.00	0.00	1	1	24	2	15	2	3	1
Cohen & Beckwith (1976)	$p = .5$	36	0.00	0.00	1	1	4	1	260	1	1	1
Crockenberg & Litman (1991)[a]												
(home)	$p = .5$	92	0.00	0.00	1	1	24	2	40	1	1	1
(lab)	$p = .5$	94	0.00	0.00	1	1	24	2	6	2	4	3
DeLoache & DeMendoza (1987)	$p = .5$	30	0.00	0.00	1	2	15	2	n/a	2	3	3
Endsley et al. (1979)	$T = 2.60$	40	0.41	0.84	2	1	66	3	20	3	3	1
Fagot (1978)	$F = 8.67$	24	0.59	1.26	1	1	22	2	300	1	1	1
Frankel & Rollins (1983)	$p = .05$	36	0.28	0.57	2	1	73	4	16	1	2	2
Langlois & Downs (1980)	$p = .05$	48	−0.24	−0.49	1	1	48	3	25	3	2	1
Rothbart & Rothbart (1976)	$T = 2.13$	56	0.29	0.58	1	2	60	3	n/a	2	2	2

Note. A positive effect size (*Z* or *d*) indicates that mothers used more supportive language with daughters than sons. Author = first author's gender (1 = *female*, 2 = *male*); Source = publication source (1 = *top ranked journal*, 2 = *lower ranked journal or book*); Months = mean child age in months; Level = child age level (1 = *infant*, 2 = *toddler*, 3 = *preschool*, 4 = *middle childhood*, 5 = *adolescence*); Length = length of observation (in minutes); Setting = observational setting (1 = *home*, 2 = *lab*, 3 = *other*); Toys = toys provided (1 = *no toys provided*, 2 = *toys specified*, 3 = *toy choice allowed*, 4 = *mixed/other*); Directions = directions to parents (1 = *nonspecific*, 2 = *problem-solving task*, 3 = *mixed/other*).
[a] The Crockenberg and Litman (1991) study listed above included analyses of the same sample in two different contexts (home and lab). The results from these two analyses are reported separately.

studies using either rate of talking or total words and all other measures (duration, MLU, number of turns; $Z = 2.92$, $p < .01$). Therefore, it appears that mothers talk more than fathers when the measure explicitly focuses on quantity of speech compared to length (duration) of talking or the complexity (MLU) of speech.

A medium, positive correlation between length of recording and effect size was observed, $r(15) = .51$, $p < .05$, suggesting that the effect size tends to be larger when the parent and child are observed for a longer period of time.

Features of the interactive context. Four features of the interactive context were tested as possible moderator variables:

Table 9
Mothers' Amount of Directive Language to Daughters Versus Sons

Study	Statistic	*N*	Fisher's *Z*	Cohen's *d*	Author	Source	Months	Level	Length	Setting	Toys	Directions
Bee et al. (1969)	$p = .5$	114	0.00	0.00	1	1	58	3	90	2	4	3
Bellinger & Gleason (1982)	$p = .5$	10	0.00	0.00	2	2	42	3	30	2	2	3
Brody et al. (1992)	$p = .5$	109	0.00	0.00	2	1	96	4	20	1	2	3
Caldera et al. (1989)	$p = .5$	40	0.00	0.00	1	1	20	2	24	2	2	1
Cherry & Lewis (1976)	$T = 1.57$	12	0.48	0.99	1	1	24	2	15	2	3	1
Cohen & Beckwith (1976)	$p = .5$	36	0.00	0.00	1	1	4	1	260	1	1	1
Crockenberg & Litman (1991)[a]												
(home)	$F = 1.33$	92	−0.12	−0.24	1	1	24	2	40	1	1	1
(lab)	$F = 2.99$	94	−0.18	−0.36	1	1	24	2	6	2	4	3
Frankel & Rollins (1983)	$p = .5$	36	0.00	0.00	2	1	74	4	16	1	2	2
Greenglass (1971)	$p = .5$	132	0.00	0.00	1	1	132	5		2	2	2
Greif (1980)	$p = .05$	16	−0.44	−0.91	1	2	42	3	30	2	2	3
Kerig et al. (1993)	$p = .5$	38	0.00	0.00	1	1	38	3	10	2	3	3
Laosa (1980)	$p = .5$	83	0.00	0.00	2	1	70	3	5	1	2	2
Minton et al. (1971)	$T = 0.82$	90	0.09	0.17	1	1	27	2	300	1	1	1
Mullis et al. (1990)	$F = 13.56$	18	−0.82	−1.84	2	2	108	4	20	1	2	2
Schaffer & Crook (1979)	$p = .5$	24	0.00	0.00	2	1	20	2	8	2	2	1

Note. A positive effect size (*Z* or *d*) indicates that mothers used more directive language with sons than daughters. Author = first author's gender (1 = *female*, 2 = *male*); Source = publication source (1 = *top ranked journal*, 2 = *lower ranked journal or book*); Months = mean child age in months; Level = child age level (1 = *infant*, 2 = *toddler*, 3 = *preschool*, 4 = *middle childhood*, 5 = *adolescence*); Length = length of observation (in minutes); Setting = observational setting (1 = *home*, 2 = *lab*, 3 = *other*); Toys = toys provided (1 = *no toys provided*, 2 = *toys specified*, 3 = *toy choice allowed*, 4 = *mixed/other*); Directions = directions to parents (1 = *nonspecific*, 2 = *problem-solving task*, 3 = *mixed/other*).
[a] The Crockenberg and Litman (1991) study listed above included analyses of the same sample in two different contexts (home and lab). The results from these two analyses are reported separately.

Table 10
Effects of Moderator Variables on Parent Gender Differences in Amount of Talking to Child

Predictor variable	*k*	*N*	*Z* for significance level		Effect size			
					Fisher's *Z*		Cohen's *d*	
			Unwt.	Wt.	Unwt.	Wt.	Unwt.	Wt.
Overall	18	501	2.96*	2.20*	20	0.13	0.41	0.26
Operational definition								
Total words	8	186	2.35_a*	1.96*	0.27_a	0.17	0.54	0.35
Rate	2	54	4.19_b*	3.39*	0.78_b	0.59	1.71	1.24
Duration	3	84	0.00_a	0.00	0.00_c	0.00	0.00	0.00
MLU/WPT	2	52	0.00_a	0.00	$0.00_{a,c}$	0.00	0.00	0.00
Other	3	125	0.00_a	0.00	$0.00_{a,c}$	0.00	0.00	0.00
Publication source								
Top journal	9	249	2.69_a*	1.76*	0.25_a	0.16	0.51	0.33
Other source	9	252	1.50_a	1.35	0.16_a	0.09	0.31	0.19
Author gender								
Woman	12	310	2.29_a*	1.66*	0.19_a	0.13	0.38	0.26
Man	5	186	1.34_a	1.36	0.10_a	0.11	0.20	0.22
Child's age level								
Infant	5	223	2.34_a*	2.06*	0.17_a	0.16	0.35	0.31
Toddler	6	115	2.05_a*	−0.19	0.41_a	0.12	0.84	0.24
Preschool	3	48	0.00_a	0.00	0.00_a	0.00	0.00	0.00
Middle childhood	4	115	1.16_a	1.56	0.10_a	0.13	0.19	0.27
Observational setting								
Home	10	296	3.34_a*	2.53*	0.30_a	0.19	0.61	0.38
Lab	8	205	0.71_b	0.26	0.09_b	0.04	0.18	0.08
Matching								
Dyad	11	298	1.58_a	0.57	0.19_a	0.07	0.39	0.14
Triad	2	60	1.65_a*	2.08*	0.19_a	0.26	0.39	0.52
Mixed	5	143	2.24_a*	2.00*	0.24_a	0.20	0.48	0.39
Directions to parent								
Nonspecific	13	403	3.03_a*	2.30*	0.21_a	0.15	0.43	0.30
Problem solving	3	69	0.00_a	0.00	0.00_a	0.00	0.00	0.00
Other	2	29	1.16_a	0.34	0.47_a	0.16	0.98	0.33
Use of toys								
No toys used	7	231	3.37_a*	0.29_a	0.59	2.69*	0.22	0.45
Choice of toys	3	56	$1.24_{a,b}$	$0.24_{a,b}$	0.49	0.77	0.16	0.31
Toys assigned	6	86	0.06_b	0.00_b	0.00	−0.07	0.00	0.00
Other	2	28	$1.16_{a,b}$	$0.47_{a,b}$	0.98	0.35	0.17	0.34

Note. A positive effect size reflects a higher mean score for mothers than for fathers. *Z* scores with different subscripts are significantly different ($p < .05$). Unwt. = unweighted scores; Wt. = weighted by sample size; MLU/WPT = mean length of utterance/words per turn.
* $p < .05$.

matching, observational setting, directions to the parents, and use of toys. As seen in Table 10, matching and type of directions were not significant factors. However, the observational setting was a significant moderator variable. First, effect sizes were significantly greater when the study took place in the family's home than in the lab ($Z = 1.65$, $p < .05$).

In addition, if the researchers asked the parents to play with a specific toy (or toy set), the effect size was significantly smaller than when there were no toys ($Z = 1.38$, $p < .10$) or when there was a selection of toys from which to choose ($Z = 2.40$, $p < .01$).

Supportive Speech Acts

Parent Gender

For those studies comparing mothers' and fathers' supportive language, the average effect size was $d = .28$ (unweighted) or $d = .33$ (weighted by sample size). The positive effect size indicated that mothers tended to use more supportive language strategies with their children than did fathers.

Other Moderator Variables

Publication characteristics. As seen in Table 11, studies published in top-ranked journals had significantly smaller average effect sizes than did studies from other publication sources ($Z = 1.72$, $p < .05$). Also, a small, positive correlation between effect size and year of publication occurred, $r(10) = .22$, *ns*. Although nonsignificant, the direction of the correlation suggests that observations of gender differences in parents' supportive language have tended to increase over the years. Author gender was not a significant moderator variable.

Sampling and measurement. When analyzing child age level as a categorical predictor, some levels were combined. Specifi-

Table 11
Effects of Moderator Variables on Parent Gender Differences in Supportive Language With Child

Predictor variable	*k*	*N*	*Z* for significance level		Effect size: Fisher's *Z*		Effect size: Cohen's *d*	
			Unwt.	Wt.	Unwt.	Wt.	Unwt.	Wt.
Overall	10	295	2.15*	1.28	0.16	0.12	0.33	0.23
Publication source								
Top journal	5	207	0.00_a	0.00	0.00_a	0.00	0.00	0.00
Other source	5	88	3.05_b*	3.43*	0.33_b	0.39	0.66	0.80
Author gender								
Woman	5	123	1.92_a*	1.45	0.21_a	0.17	0.43	0.34
Man	4	167	1.26_a	0.62	0.14_a	0.08	0.28	0.16
Child's age level								
Younger	7	152	2.57_a*	2.30*	0.23_a	0.22	0.47	0.45
Older	3	143	0.00_a	0.00	0.00_a	0.00	0.00	0.00
Observational setting								
Home	7	106	2.05_a*	1.82*	0.22_a	0.22	0.45	0.43
Lab	3	189	1.00_a	0.49	0.10_a	0.06	0.21	0.12
Matching								
Dyad	8	187	2.41_a*	2.00	0.20_a	0.18	0.41	0.37
Triad	2	108	0.00_a	0.00	0.00_a	0.00	0.00	0.00
Directions to parent								
Nonspecific	6	147	2.78_a*	2.31*	0.27_a	0.23	0.55	0.47
Problem solving	3	143	0.00_b	0.00_b	0.00_b	0.00_b	0.00_b	0.00_b
Other	1	5	$0.00_{a,b}$	0.00_b	$0.00_{a,b}$	0.00_b	0.00_b	0.00_b
Use of toys								
No toys used	3	130	1.28_a	0.54	0.17_a	0.09	0.35	0.17
Choice of toys	2	41	3.24_b*	3.25*	0.56_b	0.56	1.17	1.17
Toys assigned	3	96	0.00_a	0.00	0.00_a	0.00	0.00	0.00
Other	2	28	0.00_a	0.00	0.00_a	0.00	0.00	0.00

Note. A positive effect size reflects a higher mean score for mothers than for fathers. *Z* scores with different subscripts are significantly different ($p < .05$). Unwt. = unweighted scores; Wt. = weighted by sample size.
* $p < .05$.

cally, the toddler and the preschool age levels were collapsed, and the middle childhood and adolescence age levels were combined. There was a nonsignificant trend, suggesting that the parent gender effect was more likely among parents of younger children than among parents of older children ($Z = 1.42$, $p < .10$). There was also a small, negative correlation between child age (in months) and Fisher's *Z* effect size, $r(10) = -.28$, *ns*.

Nine out of the 10 studies reported the length of the observation session. Among these 9 studies, a small negative correlation was obtained between length of observation and effect size, $r(9) = -.27$, *ns*.

Features of the interactive context. As seen in Table 11, neither matching nor setting were significant predictors of effect size of parent gender effects on parents' supportive speech. However, significant differences were associated with directions to parent and use of toys. First, the average parent difference was greater when there were nonspecific directions than when a problem-solving task was assigned ($Z = 1.72$, $p < .05$). In addition, the parent gender effect was significantly stronger when there was a choice of toys compared to when there were either no toys ($Z = 1.87$, $p < .05$) or a specific toy set was assigned ($Z = 2.69$, $p < .01$). Moreover, when there was a choice of toys, the effect size was particularly large in magnitude ($d = 1.17$).

Negative Speech Acts

Parent Gender

The average effect size was $d = -.31$ (unweighted) or $d = -.13$ (weighted by sample size) for those studies comparing mothers' and fathers' negative language. The negative effect size indicated that contrary to prediction, mothers tended to use more negative speech with their children than did fathers.

Other Moderator Variables

Publication characteristics. The first author's gender was a significant moderator variable ($Z = 1.86$, $p < .05$), with the effect size being larger if the author was a woman. There was also a medium, positive correlation between effect size and year of publication, $r(9) = .56$, *ns*. In order to interpret the correlation, it is necessary to note that the overall effect size was negative. Thus, this correlation indicates that reports of gender effects on parents' negative speech have become *less* likely over the years. Finally, publication source was not a significant moderator variable of parent gender effects on negative speech.

Sampling and measurement. A comparison was made between children at the toddler age level and those who were older.

As seen in Table 12, the effect size was significantly larger among parents of younger children ($Z = 1.70$, $p < .05$). The effect size associated with the toddler children was particularly large ($d = -1.25$). Correlating the child's age (in months) with the Fisher's Z effect size yielded a large correlation, $r(9) = .54$, *ns*. Given the negative direction of the overall effect size, the finding suggests that parent gender differences in negative speech are more likely with younger than with older children.

There were two studies (Leaper et al., 1989; Rondal, 1980) in which information on length of observation was not reported. Among the remaining seven studies, there was a nearly perfect negative correlation between observation time and length of observation, $r(7) = -.99$, $p < .001$. This negative correlation indicates that larger effect sizes were actually *more* likely with longer observation periods (because the overall effect size itself is negative).

Features of the interactive context. As summarized in Table 12, aspects of the interactive context also appeared as significant moderator variables. First, a nonsignificant trend was found, suggesting a tendency of larger effect sizes among studies occurring in the home versus those in the lab ($Z = 1.56$, $p < .10$). Second, the average effect size was greater when directions were nonspecific than during problem-solving activities ($Z = 2.32$, $p < .01$). Third, there was a larger average effect size for those studies not using toys compared with those that did use toys ($Z = 2.36$, $p < .01$). Finally, there was no difference in effect sizes associated with whether the mother and the father were seen separately or together with the child.

Directive Speech Acts

Parent Gender

Among those studies comparing mothers' and fathers' directive language, the average effect size was $d = .29$, and the average effect size weighted by sample size was $d = .19$. The positive effect size indicated that fathers tended to use more directive language strategies with their children than did mothers.

Other Moderator Variables

Publication characteristics. As summarized in Table 13, the average effect size was significantly larger when the first author was a man than when the first author was a woman ($Z = 3.63$, $p < .001$). The source of publication was not a significant predictor. A medium, negative correlation between effect size

Table 12
Effects of Moderator Variables on Parent Gender Differences in Negative Language With Child

			Z for significance level		Effect size: Fisher's Z		Effect size: Cohen's d	
Predictor variable	k	N	Unwt.	Wt.	Unwt.	Wt.	Unwt.	Wt.
Overall	9	383	−1.76*	−0.55	−0.16	−0.07	−0.31	−0.13
Publication source								
Top journal	7	346	-1.99_a*	−0.56	-0.20_a	−0.07	−0.41	−0.15
Other source	2	37	0.00_a	0.00	0.00_a	0.00	0.00	0.00
Author gender								
Woman	4	203	-2.63_a*	−0.66	-0.35_a	−0.12	−0.72	−0.25
Man	4	175	0.00_b	0.00	0.00_b	0.00	0.00	0.00
Child's age level								
Toddler	3	43	-3.04_a*	−3.50	-0.47_a	−0.59	−0.97	−1.25
Preschool and older	6	340	0.00_b	0.00	0.00_b	0.00	0.00	0.00
Observational setting								
Home	4	79	-2.63_a*	−2.16*	-0.35_a	−0.32	−0.72	−0.65
Lab	4	159	0.00_b	0.00	0.00_b	0.00	0.00	0.00
Matching								
Dyad	5	223	-1.22_a	−0.25	-0.17_a	−0.05	−0.34	−0.11
Triad	4	160	-1.26_a	−0.64	-0.14_a	−0.08	−0.28	−0.17
Directions to parent								
Nonspecific	4	203	−2.63*	−0.66	-0.35_a	−0.12	−0.72	−0.25
Problem solving	3	143	0.00_b	0.00	0.00_b	0.00	0.00	0.00
Other	2	37	0.00_b	0.00	0.00_b	0.00	0.00	0.00
Use of toys								
No toys used	4	154	-2.63_a*	−1.05	-0.35_a	−0.16	−0.72	−0.33
Choice of toys	2	165	0.00_b	0.00	0.00_b	0.00	0.00	0.00
Toys assigned	1	36	0.00_b	0.00	0.00_b	0.00	0.00	0.00
Other	2	28	0.00_b	0.00	0.00_b	0.00	0.00	0.00

Note. A positive effect size reflects a higher mean score for fathers than for mothers. Z scores with different subscripts are significantly different ($p < .05$). Unwt. = unweighted scores; Wt. = weighted by sample size.
* $p < .05$.

Table 13
Effects of Moderator Variables on Parent Gender Differences in Directive Language With Child

Predictor variable	*k*	*N*	Z for significance level		Effect size: Fisher's Z		Effect size: Cohen's *d*	
			Unwt.	Wt.	Unwt.	Wt.	Unwt.	Wt.
Overall	12	449	2.13*	1.54	0.14	0.10	0.29	0.19
Publication source								
Top journal	4	271	0.90_a	1.02	0.05_a	0.06	0.10	0.12
Other source	8	178	1.97_a*	1.42	0.19_a	0.15	0.39	0.30
Author gender								
Woman	6	185	-0.81_a	−0.91	-0.06_a	−0.07	−0.11	−0.14
Man	5	259	4.18_b*	2.27*	0.42	0.22	0.85	0.44
Child's age level								
Younger	8	184	1.19_a	0.42	0.14_a	0.07	0.28	0.15
Older	4	265	2.00_a*	1.51	0.15_a	0.11	0.31	0.23
Observational setting								
Home	5	180	2.62_a*	1.36	0.25_a	0.18	0.50	0.37
Lab	7	269	0.57_b	0.81	0.07_a	0.04	0.14	0.08
Matching								
Dyad	9	318	2.51_a*	1.28	0.21_a	0.12	0.42	0.25
Triad	2	121	-0.13_a	0.85	-0.07_a	0.03	−0.14	0.07
Mixed	1	10	0.00_a	0.00	0.00_a	0.00	0.00	0.00
Directions to parent								
Nonspecific	4	94	1.83_a*	1.70*	0.21_a	0.21	0.42	0.43
Problem solving	4	193	1.01_a	1.41*	0.07_a	0.09	0.14	0.18
Other	4	162	0.84_a	0.14	0.16_a	0.04	0.32	0.08
Use of toys								
No toys used	2	94	$1.27_{a,b}$	1.79*	0.10_a	0.18	0.20	0.36
Choice of toys	2	62	2.59_b*	1.95*	0.42_b	0.32	0.85	0.65
Toys assigned	7	288	0.72_a	0.11	0.10_a	0.02	0.20	0.05
Other	1	5	0.00_a	0.00	0.00_b	0.00	0.00	0.00

Note. A positive effect size reflects a higher mean score for fathers than for mothers. *Z* scores with different subscripts are significantly different ($p < .05$). Unwt. = unweighted scores; Wt. = weighted by sample size.
* $p < .05$.

and year of study occurred, $r(12) = -.46$, *ns*, indicating a trend toward smaller effect sizes over time.

Sampling and measurement. When examining child age level as a categorical variable, the toddler and the preschool age levels were combined as well as the middle childhood and adolescence age levels. As seen in Table 13, there was no difference between the two age levels. Also, when the child's age in months was correlated with Fisher's *Z* effect size, there was no association found, $r(12) = -.02$, *ns*. Finally, only a negligible correlation was obtained between length of observation and effect size, $r(10) = .10$, *ns*.

Features of the interactive context. Table 13 shows that neither setting, matching, nor directions were significant predictors of parent gender effects on directive speech. Use of toys was a significant moderator, however. A larger effect size was indicated when there was a choice of toys than when either no toys were used ($Z = 1.31$, $p < .05$) or specific toys were assigned ($Z = 1.96$, $p < .05$). Moreover, when there was a choice of toys, the effect size was moderate ($d = .65$).

Informing Speech Acts

Parent Gender

For studies comparing mothers' and fathers' informing speech, the average effect size was $d = .22$, and the average effect size weighted by sample size was $d = .15$. The positive effect size indicates that fathers tended to make more informing statements with their children than did mothers.

Other Moderator Variables

Publication characteristics. Publication source was not a significant moderator, as seen in Table 14. There was a nonsignificant trend, suggesting that the average effect size tended to be larger for male-authored studies than for female-authored studies ($Z = 1.62$, $p < .10$). Finally, there was a moderate correlation between effect size and the year of publication, $r(12) = -.46$, *ns*, suggesting that parent gender differences in informing speech have declined over the years.

Sampling and measurement. When analyzing child age level as a moderator variable, the toddler and the preschool age levels were combined, and the middle childhood and the adolescence levels were collapsed. The resulting test indicated no significant difference. Similarly, when the child's age (in months) was correlated with effect size, there was no association, $r(10) = -.02$, *ns*. Also, among the 10 studies reporting length of observation, there was essentially no correlation between this predictor and effect size, $r(10) = -.10$, *ns*.

Features of the interactive context. As outlined in Table 14,

Table 14
Effects of Moderator Variables on Parent Gender Differences in Informing Language With Child

Predictor variable	*k*	*N*	*Z* for significance level		Effect size: Fisher's *Z*		Effect size: Cohen's *d*	
			Unwt.	Wt.	Unwt.	Wt.	Unwt.	Wt.
Overall	12	545	1.58	1.81*	0.11	0.08	0.22	0.15
Publication source								
Top journal	7	405	1.31_a	1.58*	0.06_a	0.08	0.11	0.16
Other source	5	140	0.90_a	0.91	0.19_a	0.07	0.37	0.15
Author gender								
Woman	6	319	-0.22_a	0.33	-0.03_a	0.00	−0.06	0.00
Man	5	221	1.95_a*	2.58*	0.11_a	0.16	0.23	0.33
Child's age level								
Younger	8	324	0.71_a	0.45	0.12	0.03	0.23	0.06
Older	4	221	1.73_a*	2.29*	0.10_a	0.14	0.20	0.29
Observational setting								
Home	6	221	2.45_a*	2.65*	0.25_a	0.18	0.51	0.37
Lab	6	324	-0.22_b	0.39	-0.03_b	0.00	−0.07	0.01
Matching								
Dyad	8	292	0.59_a	0.06	0.12_a	0.02	0.24	0.03
Triad	2	121	-0.37_a	0.68	-0.10_b	0.01	−0.20	0.03
Mixed	2	132	3.08_b*	2.91*	0.28_a	0.27	0.58	0.54
Directions to parent								
Nonspecific	5	216	1.95_a*	2.57*	0.11_a	0.16	0.23	0.33
Problem solving	5	300	-0.24_a	0.40	-0.04_a	0.01	−0.08	0.01
Other	2	29	1.17_a	0.34	0.48_a	0.16	0.99	0.33
Use of toys								
No toys used	3	186	2.00_a*	2.40*	0.13_a	0.17	0.26	0.34
Choice of toys	2	78	1.85_a*	2.40*	0.19_a	0.26	0.37	0.52
Toys assigned	5	253	-1.01_b	−0.61	-0.08_b	−0.06	−0.16	−0.11
Other	2	28	1.17_a	0.35	0.48_a	0.17	0.99	0.34

Note. A positive effect size reflects a higher mean score for fathers than for mothers. *Z* scores with different subscripts are significantly different ($p < .05$). Unwt. = unweighted scores; Wt. = weighted by sample size.
* $p < .05$.

setting and use of toys were the aspects of the interactive setting that best predicted effect size. The magnitude of mother–father difference was larger when observations occurred in the family's home than in a lab ($Z = 1.87$, $p < .05$). Also, smaller effect sizes occurred in studies in which specific toys were assigned than in those to which either no toys were used ($Z = 1.75$, $p < .05$) or there was a choice of toys ($Z = 1.73$, $p < .05$). Also, when there was a choice of toys, the size of the effect tended to be moderately large ($d = .52$). The other two variables did not act as strong moderators. There was no difference associated with the directions to the parents. In addition, although Table 14 indicates a difference between dyadic and triadic matching, the magnitude of the effect sizes in both situations is small.

Questions and Requests for Information

Parent Gender

Among those studies comparing mothers' and fathers' use of questions or requests for information, the average effect size was $d = .00$ (unweighted) or $d = -.06$ (weighted by sample size). Thus, across studies, there was no overall parent gender difference. As described below, however, parent gender differences were obtained when particular moderator variables were taken in account. A positive effect size indicates that fathers tended to use more questions with their children than did mothers.

Other Moderator Variables

Operational definition. As summarized in Table 15, there was a significant difference in average effect sizes among those studies looking at general question use versus either "Wh" questions ($Z = 1.81$, $p < .05$) or information requests ($Z = 3.02$, $p < .01$). In addition, the direction of effects differed, depending on the operational definition. Compared with mothers, fathers tended to use more "Wh" questions and information requests but fewer general questions and "yes–no" questions. With "Wh" questions, in particular, the magnitude of the effect size was moderately large ($d = .76$).

Publication characteristics. None of the publication characteristics were related to effect size. This included the publication source and the first author's gender. Also, there was no correlation between Fisher's *Z* effect size and year of publication, $r(16) = -.08$, *ns*.

Table 15
Effects of Moderator Variables on Parent Gender Differences in Questions With Child

Predictor variable	*k*	*N*	*Z* for significance level		Effect size: Fisher's *Z*		Effect size: Cohen's *d*	
			Unwt.	Wt.	Unwt.	Wt.	Unwt.	Wt.
Overall	16	496	1.50	1.71*	0.00	−0.03	0.00	−0.06
Operational definition								
General questions	6	254	$0.42_{a,b}$	1.49*	-0.22_{a}	−0.14	−0.44	−0.28
Yes–no questions	3	49	−1.20	−1.26	$-0.15_{a,b}$	−0.17	−0.30	−0.35
Wh- questions	3	49	2.09_{b}*	2.52*	0.28_{b}	0.37	0.57	0.76
Information requests	4	146	1.17_{b}*	0.70	0.22_{b}	0.11	0.44	0.22
Publication source								
Top journal	5	185	0.79_{a}	0.25	0.11_{a}	0.04	0.21	0.08
Other source	11	313	1.28_{a}	1.97*	-0.06_{a}	−0.09	−0.10	−0.17
Author gender								
Woman	8	285	1.74_{a}*	1.81*	-0.03_{a}	−0.08	−0.06	−0.15
Man	6	203	0.44_{a}	0.38	0.04	0.05	0.07	0.10
Child's age level								
Toddler	6	114	1.55_{a}	1.25	0.15_{a}	0.15	0.29	0.30
Preschool	8	277	0.78_{a}	1.69*	-0.11_{a}	−0.12	−0.23	−0.23
Middle childhood	2	107	0.00_{a}	0.00	0.00_{a}	0.00	0.00	0.00
Observational setting								
Home	8	140	0.38_{a}	0.92	-0.03_{a}	0.08	−0.06	0.17
Lab	8	358	1.74_{a}*	1.54	-0.03_{a}	−0.06	−0.06	−0.12
Matching								
Dyad	13	367	1.91_{a}*	2.32*	0.11_{a}	0.14	0.22	0.28
Triad	2	121	-0.65_{a}	−0.37	-0.74_{b}	−0.45	−1.62	−0.94
Mixed	1	10	0.00_{a}	0.00	0.00_{a}	0.00	0.00	0.00
Directions to parent								
Nonspecific	11	220	0.97_{a}	0.99	0.07_{a}	0.09	0.13	0.17
Problem solving	5	278	1.25_{a}	1.46	-0.15_{a}	−0.09	−0.31	−0.19
Use of toys								
No toys used	7	214	0.40_{a}	0.38	0.03_{a}	0.05	0.06	0.09
Toys assigned	6	251	2.00_{a}*	1.84*	-0.04_{a}	−0.09	−0.08	−0.18
Other	3	33	0.00_{a}	0.00	0.00_{a}	0.00	0.00	0.00

Note. A positive effect size reflects a higher mean score for fathers than for mothers. *Z* scores with different subscripts are significantly different ($p < .05$). Unwt. = unweighted scores; Wt. = weighted by sample size.
* $p < .05$.

Sampling and measurement. As seen in Table 15, child age level was not a significant moderator of parent gender effects on use of questions. The child's age in months was not correlated with effect size, $r(16) = -.05$, *ns*. Also, there was no correlation between effect size and length of observation, $r(13) = .05$, *ns*.

Features of the interactive context. Observational setting, use of toys, and directions to parent were not significant moderators of effect size. Matching was a significant moderator, though. Mothers tended to ask more questions when both parents were observed together, whereas fathers tended to ask more questions when parents were observed separately ($Z = 6.10$, $p < .001$).

Part 2: Mothers' Language to Daughters Versus Sons

The effect of child gender on mothers' language behavior with their children was investigated. Specifically, child gender effects on amount of talking, supportive speech, and directive speech were analyzed separately. The following categorical factors were tested as possible moderators: author's gender, publication status, child age level, observational setting, directions to parent, and use of toys. Also, with amount of talking, the operational definition was included as an additional moderator variable. Focused comparison tests of significance levels and effect sizes were carried out for each of the predictor variables with each language variable. Results from the comparison tests with the categorical moderator variables are presented for the three language measures in Tables 16–18, respectively. Both unweighted and weighted (by sample size) effect sizes are indicated. In addition, year of study, child's age (in months), and length of observation are continuous variables that were investigated as possible moderators. Correlations between the continuous moderator variables and Fisher's *Z* effect sizes (weighted by sample size) are reported in the text below.

Amount of Talking

Child Gender

Among those published studies testing for child gender differences in mothers' talkativeness, the average effect size was $d =$

.36 (unweighted) or $d = .29$ (weighted by sample size). The positive effect size indicates that mothers tended to be more talkative with daughters than with sons.

Other Moderator Variables

Publication characteristics. The first author's gender was not significantly related to effect size, as seen in Table 16. Larger effect sizes were more likely among studies published in top-ranked journals that in other sources ($Z = 2.06$, $p < .05$). A small, negative correlation occurred between Fisher's Z effect size and year of study, $r(25) = -.20$, *ns*. It suggests a slight decline over the years in child gender effects on mothers' talkativeness.

Sampling and measurement. As summarized in Table 16, focused comparison tests associated with the age-level variable revealed a significantly larger effect size for mothers of toddlers than for mothers of infants ($Z = 2.70$, $p < .01$), mothers of preschool children ($Z = 1.60$, $p < .10$), or mothers of school-age children ($Z = 2.08$, $p < .05$). Also, the effect size associated with toddler children was moderately large ($d = .64$). When child age (in months) was correlated with effect size, no association was found, $r(25) = -.05$, *ns*, which is likely due to the curvilinear trend previously described with the age-level variable.

The operational definition of talkativeness proved to be a significant moderator. Focused comparisons indicated a significant difference between studies with either total words or rate of talking and all other measures ($Z = 3.04$, $p < .01$). With total words, there was a medium effect size in magnitude ($d = .59$). Thus, it appears that mothers talk more with daughters than with sons when the measure focuses more on quantity of speech (total words or rate) than on duration or complexity (MLU) of speech.

A small, negative correlation between effect size and length of observation was seen, $r(25) = -.25$, *ns*. Thus, there was a slight tendency for the effect size to be smaller as the observation time became longer.

Features of the interactive context. As seen in Table 16, there was not a significant difference between studies taking

Table 16
Effects of Moderator Variables on Mothers' Amount of Talking to Daughters Versus Sons

			Z for significance level		Effect size: Fisher's Z		Effect size: Cohen's d	
Predictor variable	k	N	Unwt.	Wt.	Unwt.	Wt.	Unwt.	Wt.
Overall	25	825	4.23*	3.37*	0.18	0.14	0.36	0.29
Operational definition								
Total words	8	216	4.04_a*	3.74*	0.32_a	0.29	0.65	0.59
Rate	8	316	$3.16_{a,b}$*	2.12*	0.22_a	0.16	0.45	0.33
Duration	3	84	0.00_c	0.00	0.00_b	0.00	0.00	0.00
MLU/WPT	3	94	0.00_c	0.00	0.00_b	0.00	0.00	0.00
Other	3	115	$0.44_{b,c}$	0.50	0.04_b	0.05	0.08	0.09
Publication source								
Top journal	16	521	4.51_a*	3.44*	0.24_a	0.19	0.49	0.39
Other source	9	304	1.04_b	0.97	0.06_b	0.06	0.13	0.12
Author gender								
Woman	17	565	2.77_a*	1.89*	0.16_a	0.11	0.31	0.21
Man	8	260	3.43_a*	3.33*	0.23_a	0.23	0.46	0.46
Child's age level								
Infant	9	384	1.01_a	0.42	0.08_a	0.04	0.16	0.08
Toddler	7	174	4.07_b*	3.57*	0.37_b	0.31	0.75	0.64
Preschool	7	215	$2.78_{b,c}$*	3.54*	0.17_a	0.23	0.34	0.47
Middle childhood	2	52	$0.00_{a,c}$	0.00	0.00_a	0.00	0.00	0.00
Observational setting								
Home	8	294	1.17_a	0.54	0.10_a	0.05	0.20	0.11
Lab	11	342	$2.57_{a,b}$*	1.72*	$0.18_{a,b}$	0.13	0.36	0.26
Other	6	189	3.80_b*	4.25*	0.28_b	0.31	0.56	0.64
Directions to parent								
Nonspecific	19	655	4.32_a*	3.09*	0.22_a	0.16	0.43	0.32
Problem solving	4	136	1.16_a	1.42	0.09_a	0.12	0.19	0.23
Other	2	34	0.00_a	0.00	0.00_a	0.00	0.00	0.00
Use of toys								
No toys used	10	341	1.48_a	1.17	0.10_a	0.08	0.19	0.16
Choice of toys	9	298	3.82_b*	2.82*	0.28_b	0.21	0.57	0.43
Toys assigned	6	186	$2.04_{a,b}$*	1.89*	$0.17_{a,b}$	0.16	0.33	0.32

Note. A positive effect size indicates the average effect was greater for mothers of daughters than for mothers of sons. Z scores with different subscripts are significantly different ($p < .05$). Unwt. = unweighted scores; Wt. = weighted by sample size; MLU/WPT = mean length of utterance/words per turn.
* $p < .05$.

place in the family's home and those occurring at a research lab. There was also no difference associated with the directions to the parent. Use of toys, however, was a significant predictor. The effect size was significantly larger when a choice of toys was provided than when no toys were used ($Z = 1.92, p < .05$)

Supportive Speech Acts

Child Gender

For those studies comparing mothers' supportive language with daughters versus with sons, the average unweighted effect size was $d = .12$ (unweighted) or $d = .22$ (weighted by adjusted sample size). The positive effect size indicated that mothers of daughters tended to use more supportive language strategies than did mothers of sons.

Other Moderator Variables

Publication characteristics. Author gender was a significant moderator ($Z = 2.05, p < .05$). As seen in Table 17, the average effect size was larger if the first author was a man than if the author was a woman, although there were only two studies (Endsley et al., 1979; Frankel & Rollins, 1983) with male authorship.

Publication status was not a significant predictor.

A medium, negative correlation between effect size and year of publication occurred, $r(11) = -.34$, *ns*, suggesting that observations of gender differences in parents' supportive language have decreased over the years.

Sampling and measurement. When examining child age level, the infancy and the toddler levels were combined; also, the preschool and the middle childhood age levels were collapsed. As summarized in Table 17, there was not a significant difference between these two age levels. However, there was a medium, positive correlation between child age (in months) and Fisher's Z effect size, $r(11) = .36$, *ns*. It suggests that mothers' differential use of supportive speech with daughters and with sons may tend to increase as children get older

There were two studies (DeLoache & DeMendoza, 1987; Rothbart & Rothbart, 1976) that did not report how long the observed interaction lasted. With the remaining eight studies, there was a moderate correlation between effect size and length of observation, $r(9) = .43$, *ns*. Larger effect sizes were associated with longer observation lengths.

Features of the interactive context. As seen in Table 17, none of the contextual variables that were investigated proved to moderate effect sizes associated with this language variable. There was a nonsignificant trend, suggesting a larger effect size when a problem-solving task was assigned than when nonspecific directions were provided ($Z = 1.31, p < .10$).

Table 17
Effects of Moderator Variables on Mothers' Supportive Language With Daughters Versus Sons

			Z for significance level		Effect size: Fisher's Z		Effect size: Cohen's d	
Predictor variable	*k*	*N*	Unwt.	Wt.	Unwt.	Wt.	Unwt.	Wt.
Overall	11	508	2.18*	1.98*	0.12	0.11	0.24	0.22
Publication source								
Top journal	9	422	1.72_a*	1.25	0.12_a	0.09	0.23	0.18
Other source	2	86	1.47_a	1.83*	0.14	0.19	0.29	0.37
Author gender								
Woman	9	432	1.03_a	0.84	0.08_a	0.05	0.14	0.11
Man	2	76	2.92_b*	2.95*	0.35_b	0.35	0.71	0.71
Child's age level								
Younger	7	328	1.01_a	0.68	0.09_a	0.06	0.17	0.12
Older	4	180	2.28_a*	2.14*	0.18_a	0.17	0.37	0.34
Observational setting								
Home	4	188	2.16_a*	1.70*	0.22_a	0.17	0.44	0.35
Lab	5	232	0.93_a	1.30	0.06_a	0.09	0.11	0.17
Other	2	88	0.58_a	0.31	0.08_a	0.05	0.17	0.11
Directions to parent								
Nonspecific	7	292	$1.32_{a,b}$	0.85	$0.11_{a,b}$	0.08	0.22	0.15
Problem solving	2	92	2.64_a*	2.64*	0.29_a	0.28	0.58	0.58
Other	2	124	0.00_b	0.00	0.00_b	0.00	0.00	0.00
Use of toys								
No toys used	3	152	1.54_a	1.02	0.20_a	0.13	0.40	0.27
Choice of toys	3	82	1.43_a	1.93*	0.14_a	0.20	0.27	0.40
Toys assigned	4	180	1.04_a	1.06	0.08_a	0.08	0.16	0.16
Other	1	94	0.00_a	0.00	0.00_a	0.00	0.00	0.00

Note. A positive effect size indicates the average effect was greater for mothers of daughters than for mothers of sons. Z scores with different subscripts are significantly different ($p < .05$). Unwt. = unweighted scores; Wt. = weighted by sample size.
* $p < .05$.

Directive Speech Acts

Child Gender

Among those studies comparing mothers' directive language with sons and with daughters, the average effect size was $d = -.13$ (unweighted) or $d = -.05$ (weighted by adjusted sample size). Thus, across studies, there was minimal evidence for mothers' differential use of directives with daughters and with sons. As described below, however, child gender effects were obtained when particular moderator variables were taken into account. A positive effect size indicates that mothers tended to use more directives with daughters than with sons; a negative effect size indicates the reverse.

Other Moderator Variables

Publication characteristics. Publication status was a significant predictor variable ($Z = 2.40$, $p < .05$). As seen in Table 18, there was a smaller average effect size in top-ranked journals than in other sources. Author gender was not a significant moderator variable. There was a medium, negative correlation between year of study and effect size, $r(16) = -.37$, *ns*. Given the negative direction of the overall effect size, the correlation suggests that reports of gender differences in parent directive speech have actually become more likely over time.

Sampling characteristics. Child age level was a significant moderator of child gender effects on mothers' directive language. As seen in Table 18, the effect size was significantly larger for mothers of school-age children than for mothers of toddler-age children ($Z = 2.34$, $p < .01$). There was also a medium, negative correlation between children's age (in months) and Fisher's Z effect size, $r(16) = -.34$, *ns*. The correlation suggests a greater likelihood for differecnes among older children (because of the negative direction of the overall effect size). Length of observation was only weakly correlated with Fisher's Z effect size, $r(15) = .15$, *ns*.

Features of the interactive context. The observational setting was not related to differences in effect size. However, as seen in Table 18, the type of directions to the parent and the use of toys were significant moderators. A larger effect size occurred when a problem-solving task was used than when no specific directions were given, ($Z = 2.34$, $p < .01$). In addition, a larger average effect size was found when there was a choice of toys than when specific toys were assigned ($Z = 1.89$, $p < .05$). Furthermore, when there was a choice of toys, mothers tended to use more directives with sons than with daughters ($d = .23$).

Table 18
Effects of Moderator Variables on Mothers' Directive Language With Daughters Versus Sons

			Z for significance level		Effect size: Fisher's Z		Effect size: Cohen's d	
Predictor variable	k	N	Unwt.	Wt.	Unwt.	Wt.	Unwt.	Wt.
Overall	16	851	−1.33	−0.47	−0.06	−0.03	−0.13	−0.05
Publication source								
Top journal	13	807	-0.16_a	−0.16	0.02_a	0.00	0.04	0.00
Other source	3	44	-2.74_b*	−3.15*	-0.42_b	−0.50	−0.87	−1.03
Author gender								
Woman	10	571	-0.71_a	−0.32	-0.02_a	−0.01	−0.04	−0.03
Man	6	280	-1.26_a	−0.38	-0.14_a	−0.05	−0.28	−0.11
Observational setting								
Home	7	418	-1.29_a	−0.19	-0.12_a	−0.03	−0.25	−0.06
Lab	9	433	-0.64_a	−0.47	-0.02_a	−0.02	−0.03	−0.04
Child's age level								
Infant	1	36	0.00_a	0.00	$0.00_{a,b}$	0.00	0.00	0.00
Toddler	6	259	-0.24_a	−0.35	0.04_a	−0.01	0.09	−0.01
Preschool	5	261	-0.74_a	−0.18	$-0.09_{a,b}$	−0.03	−0.18	−0.05
Middle childhood	3	163	-1.78_a*	−0.48	-0.28_b	−0.09	−0.57	−0.18
Adolescence	1	132	0.00_a	0.00	0.00_a	0.00	0.00	0.00
Directions to parent								
Nonspecific	6	248	0.46_a	0.32	0.07_a	0.03	0.15	0.06
Problem solving	4	269	-1.54_b	−0.34	-0.21_b	−0.06	−0.41	−0.11
Other	6	334	$-1.37_{a,b}$	−0.63	$-0.10_{a,b}$	−0.05	−0.21	−0.09
Use of toys								
No toys used	3	172	-0.19_a	0.19	$-0.01_{a,b}$	0.01	−0.02	0.03
Choice of toys	2	50	1.02	0.44	0.24_b	0.11	0.48	0.23
Toys assigned	9	468	-1.58_a*	−0.41	-0.14_a	−0.05	−0.28	−0.09
Other	2	161	-1.21_a	−0.65	$-0.09_{a,b}$	−0.05	−0.18	−0.10

Note. A positive effect size indicates the average effect was greater for mothers of sons than for mothers of daughters. Z scores with different subscripts are significantly different ($p < .05$). Unwt. = unweighted scores; Wt. = weighted by sample size.
* $p < .05$.

DISCUSSION

The family typically is the context for children's first lessons in the meaning of gender. The meta-analyses reported here reveal some of the ways that children in two-parent families may witness different lessons in the ways that mothers and fathers define their roles through talk. Additionally, our results indicate that mothers tend to provide daughters and sons with different language experiences. Most importantly, however, the analyses suggest that gender effects are not fixed but, rather, depend largely on the interactive context.

We will now proceed with an overview and interpretation of our findings. First, we will consider the overall parent and child gender effects from the different meta-analyses. Afterwards, the influence of the various moderator variables will be discussed. Although several overall gender effects were observed, the analyses of the moderator variables indicated that the incidence and magnitude of these effects typically depended on several other factors. These include sampling and measurement characteristics as well as aspects of the interactive setting.

Parent Gender Effects

Overall effect sizes weighted by sample size for parent gender effects across all studies ranged from *negligible* with negative speech ($d = -.13$), informing speech ($d = .15$), and questions ($d = -.06$) to *small* with amount of talking ($d = .26$), directives ($d = .19$), and supportive speech ($d = .23$). As discussed in later sections, most of these effects were much larger in magnitude when other factors were taken into account. In general, mothers were more likely to demonstrate higher amounts of verbal interaction as well as to use more socioemotional speech (supportive and negative language). At the same time, fathers were more apt to use more instrumental speech (directives, informing, questions). In these ways, the meta-analyses indicate that mothers and fathers in the reviewed studies generally provided gender-typed role models for their children. Additionally, the observed patterns are consistent with Aries' (1987) narrative review as well as Anderson and Blanchard's (1982) meta-analysis of studies on gender differences in adults' communication behavior. Those authors similarly indicated a tendency for women to use more socioemotional communication and for men to use more instrumental communication.

One of the previously mentioned findings ran counter to our original prediction. On the basis of traditional characterizations of fathers as being more control oriented than mothers, we had initially anticipated more negative speech among fathers. In contrast, mothers tended to demonstrate more negative speech than did fathers. However, when negative speech is viewed as expressive behavior, our finding is consistent with prior reports associating women's speech with an expressive and socioemotional orientation (see Aries, 1987). Also, to the extent that mothers end up being the primary caregivers of children, they may be more apt to provide negative comments to their children than are fathers. Indeed, as discussed later, the magnitude of this effect was largest among younger children—when child care is most apt to be the mother's responsibility.

Child Gender Effects

Overall, child gender effects on mothers' language behavior ranged from *negligible* effect size associated with mothers' directives ($d = -.05$) to *small* effect sizes associated with mother's amount of talking ($d = .29$) and supportive speech ($d = .22$). In the cases of the latter two language variables, average means were higher with daughters than with sons. These overall effects are consistent with narrative reviews noting parents' greater emphasis on verbal interaction and affiliation with daughters than with sons (Block, 1983; Fagot & Leinbach, 1987; Gleason, 1979; Klann-Delius, 1981; Whiting & Edwards, 1988).

With all of the language variables, there were several significant moderator variables that tended to increase or decrease the magnitude of effect sizes. Of these, the moderating influences of sampling and measurement characteristics are considered next.

Sampling and Measurement Characteristics

Three sampling and measurement characteristics were tested as possible moderator variables: the child's age level, the length of the observation, and the operational definition for two language variables (amount of talking, questions).

Child Age Level

As expected, age level was an important moderator variable. Mother–father differences in supportive and negative language were larger with younger, toddler-age children ($d = .45$ and 1.25, respectively) than with older, school-age children ($d = 0$ for both languages). Perhaps these age differences reflect the traditionally greater involvement of mothers than fathers with younger children. Thus, verbal interaction and socioemotional (supportive and negative) speech may come more easily to mothers who are spending more time with their younger children than are fathers.

The child's age level was also a moderator of child gender effects on mothers' language behavior. Effect sizes associated with amount of talking were larger among mothers of toddler-age children than among mothers of toddler-age children ($d = .64$). The toddler years are both the period of greatest language learning (Greenfield, Reilly, Leaper, & Baker, 1985) as well as the time when children's gender identity and gender role knowledge are being formed (Huston, 1983). Thus, it is striking that this is also the time when mothers are making the most differentiation in the amount of verbal input directed toward daughters and sons. Perhaps mothers are enacting their own gender stereotypes by providing their daughters with more verbal input during these early years (Gleason, 1979). For whatever reason, the apparent outcome is that daughters receive more emphasis on verbal interaction than do sons. This may, in turn, be related to various reports that girls score higher than boys in verbal skills (Maccoby & Jacklin, 1974) and that girls' interactions are traditionally more talk oriented than are boys' interactions (see Leaper, 1994).

A different relationship occurred between child age level and effect sizes associated with mothers' use of directive speech. Specifically, the effect sizes associated with this language variable were larger with older than with younger children ($r = -.34$). Perhaps this reflects a pattern of mothers' gender typing

becoming more differentiated as children get older. With younger children, the primary distinction that mothers make between daughters and sons may be in terms of the *amount* of verbal interaction; however, with older children, mothers may differentiate between sons and daughters more in terms of the *type* of verbal interaction. This interpretation is consistent with studies of gender development, indicating that around middle childhood (approximately 7 years of age), children begin to develop their understandings of gender-typed social and personality characteristics (Huston, 1983). Thus, fostering independence in sons may involve using fewer directives, whereas encouraging closeness in daughters may involve making more supportive comments.

We hypothesized that mothers would use more directive speech with sons than with daughters. This prediction was based on the premise that mothers might use more directive speech with sons as a way to encourage self-assertion (Whiting & Edwards, 1988). Instead, we observed mothers of school-age children using more directive speech with daughters than with sons. Given the age level at which this difference was found, perhaps mothers were actually encouraging more autonomy in their sons by using *fewer* directives with them than with their daughters. In support of this interpretation, recent research suggests that power-assertive forms of parental influence may actually impede the development of autonomy in the child (Crockenberg & Litman, 1990; Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown,1987).

Length of Observation

The length of observation was tested as a moderator variable by analyzing the correlation between observation length and effect size. With a few of the language variables, larger effect sizes were associated with longer observation lengths, as expected. Thus, detecting gender effects may partly depend on allowing enough time for them to emerge in an interaction.

Operational Definition

Despite narrowing the variables we analyzed and obtaining high agreement in classifying language variables, we still noted much variation across studies in operational definitions and types of measures used. Unfortunately, there were only two language variables that we investigated with enough studies to consider operational definition as a moderator. They were amount of talking and questions.

For amount of talking, there were two definitions that were particularly associated with larger effect sizes. These were total words and rate of talking. In contrast, other measures such as mean length of utterance or duration of talking generally were not associated with gender differences. Thus, the relevant measure is amount of talking within a period of time rather than the complexity or total duration of talking. This appeared true in the analyses of mother–father differecnes in talking as well as comparisons of mothers' amount of talking to daughters versus sons.

With regard to mother–father differences in the use of questions, a different pattern occurred, depending on which type of question was examined. Fathers were more likely to use "wh-" questions and total questions than were mothers; however, mothers were slightly more likely to use "yes–no" questions than were fathers. Some researchers who have found this pattern of results within their own study have suggested that fathers are being more "cognitively stimulating" and challenging through their greater use of open-ended questions (Engle, 1980; McLaughlin et al., 1983). It also may reflect mens' traditionally greater instrumental orientation. The latter interpretation is also consistent with fathers' greater overall use of directive and informing speech acts.

In summary, the meta-analyses indicate that the likelihood of detecting gender effects on parents' behavior depends partly on the age of the child and the type of measure used. For example, apparently one would be more likely to observe child gender effects on mothers' amount of talking if the study looked at mothers' total words to infants or toddlers. As discussed next, there are additional factors associated with the research that may moderate the incidence and magnitude of observed gender effects.

Publication Characteristics

The next set of moderator variables that we investigated were the publication status, the first author's gender, and the year of the study. Although publication status appeared as a significant moderator variable in several of the meta-analyses, no clear pattern emerged. The moderating effect of author gender was most consistent regarding child gender effects on mothers' language. Author gender appeared as a significant moderator of gender effects in three comparison tests. In all three cases, the gender effect was larger if the first author was a man than if he or she was a woman. The results therefore suggest that the author's personal bias may somehow influence the kinds of results that are obtained. If there is a researcher bias operating here, it is not possible to know if it was either toward or against finding differences—or possibly both (see Beall, 1993).

There was general support for our hypothesis that there would be a decrease in gender-related effects on parents' language behavior over the years. Small-to-medium negative correlations were observed between year of study and effect size with most of the language variables. For example, reports of mother–father differences in directive speech appear to be less likely over the years. This pattern may reflect the greater participation of women in the work force, which may reinforce assertive styles of interaction as well as greater gender equality in marital relationships.

Features of the Interactive Context

Perhaps the most important overall finding from the meta-analyses was the extent that aspects of the interactive setting acted as moderators of effect sizes. Consistent with contextual-interactive models of gender (Beall, 1993; Caldera, Huston, & O'Brien, 1989; Deaux & Major, 1987; Leaper & Gleason, 1996; Leaper, Leve, Strasser, & Schwartz, 1995), the incidence of gender effects on parents' language behavior depended on the situation. The moderating influences of each of the reviewed features of the interactive context are discussed next.

Matching of mothers and fathers with children. The matching

of mothers and fathers with their children generally was not a significant predictor of parent gender effects on various parent language behaviors. As seen in the tables, the vast majority of studies looked at mothers and fathers on separate occasions with their children. Given that children in two-parent families experience their mothers and fathers both separately and at the same time, we encourage researchers to carry out more studies comparing both types of interactions (for example, see Gjerde, 1986).

The Observational Setting

Just as in the real estate business, our meta-analyses indicated that location is key. Specifically, the observational setting appeared as a significant moderator of gender effects. Most parent gender differences were more likely when the observations took place in the home than in the lab. This was found with the amount of talking, negative language, and informing language. The results suggest mother–father differences in language style were larger in the more naturalistic home setting. To the extent that many studies do take place in research laboratories, this result might help account for the many reports that do not find gender differences in parents' behavior (see Lytton & Romney, 1991; Maccoby & Jacklin, 1974). Thus, observing gender-typed parent behaviors appears to depend partly on the setting.

Directions to Parent

The assignment of either a problem-solving task or a relatively unstructured activity was another aspect of the context that influenced the magnitude of gender effects on parents' language. Most parent gender differences were larger when an unstructured activity was used than a problem-solving task. Thus, parent gender differences were *less* likely when the assigned activity was more constrained. This result is compatible with contextual–interactive models of gender typing that emphasize the importance of the activity structure as a mediator of gender-typed behavior (see Carpenter, 1983; Huston, 1985). In problem-solving tasks, the parent has fewer options in how she or he can define the activity. In less structured situations, however, the parent and child may end up doing any number of activities, and different activities may emphasize different behaviors. For example, a problem-solving task may lead mothers and fathers to talk in similar amounts, but when allowed to choose their own activity, mothers may choose activities that call for more talking than do fathers.

Mothers' differential use of directive language with daughters and with sons also depended on the activity setting. During problem-solving activities, mothers tended to use more directive and supportive language with daughters than with sons. Mothers' use of more directive speech with daughters in structured activities is consistent with Block's (1983) suggestion that parents are more intrusive and less encouraging of autonomy with daughters than with sons during problem-solving tasks. It is also compatible with Carpenter's (1983) research indicating that adults tend to impose more structure on daughters than on sons.

Use of Toys

Another way that the moderating influence of the activity structure was assessed was by comparing studies in which either no toys were used, a choice of toys was provided, or specific toys were assigned. As emphasized in recent studies, the type of toy or play activity that children and their parents use is often a better predictor of behavioral variations than either the parent's or the child's gender (Caldera et al., 1989; O'Brien & Nagle, 1987; Leaper & Gleason, 1996; Leaper et al., 1995). As expected, when parents and their children were asked to play with specific toys, the magnitude of mother–father differences in language behavior was smaller compared with when either there was a choice of toys or no toys were provided. This occurred with all of the language variables except questions. Thus, with one exception, parent gender differences in language style appear more likely in more naturalistic and unstructured situations.

The use of toys was also a significant moderator variable in relation to child gender effects on mothers' amount of talking and use of directives. In both analyses, the effect sizes were larger when there was a choice of toys provided than when specific toys were assigned. These results confirm other research that has found that when the type of toy used during parent–child play is controlled, it tends to reduce the incidence and magnitude of child gender effects on parents' behavior (Caldera et al., 1989; Leaper & Gleason, 1996). However, because parents typically encourage gender-typed play activities in their children (see Lytton & Romney, 1991), girls and boys are exposed to different situations that involve different styles of verbal interaction.

In summary, with a few exceptions, the meta-analyses indicated an overall trend for larger effect sizes when observations were based on more naturalistic and less structured interactive contexts. Thus, the incidences and magnitudes of parent and child effects on parents' language behavior depend on the interactive setting. These results suggest that laboratory studies or highly structured tasks may not be the best procedures for observing gender-typing processes unless one is particularly interested in the relation between specific situations and the parent's or child's behavior (e.g., Caldera et al., 1989). Additionally, the magnitude of gender effects on parents' behavior was likely underestimated in earlier meta-analyses (e.g., Lytton & Romney, 1991), when self-report measures, observations in the lab, and observations in the home were combined. Thus, meta-analyses using very broadly defined categories can lead to misleading inferences about the incidence of gender-differentiated socialization patterns (see Block, 1976, 1979, for a similar argument regarding narrative reviews). In contrast to Lytton and Romney's conclusions, the present results lend substantial support to the idea that parents play an important role in the gender typing of their children when contextual factors are taken into account.

CONCLUSIONS

Our analyses are distinct from Siegal's (1987) and Lytton and Romney's (1991) prior meta-analyses of parents' gender-typed behavior with their children in three important ways. First, the behaviors that were examined were more narrowly specified.

In particular, our analyses were limited to studies including observational measures of parents' language behavior. The earlier meta-analyses had combined observational and self-report measures as well as verbal and nonverbal behaviors. As a result, they may have cast too wide a net to detect more subtle gender effects. Second, we looked at parent gender effects in addition to child gender effects. Lytton and Romney limited their analyses to child gender effects. Siegal's meta-analysis did consider parent gender differences but specifically in relation to mother–father differences in the likelihood of treating sons and daughters differently. Also, Siegal looked at a much broader range of social behaviors and types of measures. Third, the present analyses targeted several aspects of the interactive context as possible moderator variables. These factors included the observational setting, the type of activity that was observed, and the assignment of toys in the task. Also, in the analyses of parent gender differences, another relevant contextual factor was the matching of mothers and fathers with their children. The results demonstrated that all of these factors influenced the incidence and magnitude of parent and child gender effects on parents' language behavior.

The present results lead to very different conclusions than those reached by Lytton and Romney (1991). We observed systematic gender-typing effects in both how mothers and fathers act differently with their children and in how mothers act differently toward their sons and daughters. Observation of these effects was moderated by a number of factors, including the particular language variable measured, the age of the child, the type of activity, and the setting. Nonetheless, when placed in the context of these factors, the overall inference is that gender-differentiated socialization patterns can be observed in parents' behavior with their children. The discrepancy between Lytton and Romney's and our findings suggests that meta-analyses based on broadly defined behaviors may obscure systematic differences in the socialization of girls and boys (see Fagot & Hagan, 1991, for a similar point).

Limitations

Although the present set of meta-analyses has its strengths, there are also the inevitable limitations that accompany any study. By narrowing our focus to observational measures of certain language variables, we necessarily reduced the number of studies available for inclusion in our meta-analysis. There was a corresponding cost for some of the analyses. First, there were few studies in which both the mother and the father were observed together with the child. Second, there were relatively few studies carried out with older children and adolescents. Third, there was not a sufficient number of available studies to perform a meta-analysis of child gender effects on fathers' behavior. Given Siegal's (1987) finding that fathers are more likely than mothers to treat daughters and sons differently, we would have liked to have considered the possible interaction between parent gender and child gender when examining parents' language behavior. As more studies of parent–child interaction begin to include fathers, this type of analysis will become possible. Fourth, although theoretically derived from the gender socialization research literature, our categories of language behaviors necessarily involved excluding categories of speech that other researchers may consider relevant in the study of gender socialization. Finally, although several significant moderator variables were identified, homogeneity tests indicated considerable variation across studies in effect sizes. The moderators that we investigated only begin to address the kinds of factors accounting for variations in parents' language behavior.

Toward a Contextual–Interactive Model

In closing, we would like to use our meta-analyses to articulate a contextual–interactive model of how different types of factors may influence parents' language behavior. First, it is necessary to acknowledge the moderating influences of characteristics of the research study. As we have seen, these include characteristics about the researchers themselves (e.g., the researcher's gender and possible corresponding biases) as well as the manner that they carry out their study (e.g., the measures and procedures that are selected). Just as Heisenberg's (1958) uncertainty principle in quantum physics acknowledges the inextricable link between the physicist's measurement and the phenomenon being observed, we must similarly acknowledge the various ways that social scientists have an impact on the behaviors they record (Brandt, 1982; Lerner, Skinner, & Sorrel, 1980).

The second set of moderators includes characteristics of the parent. For instance, we examined the parent's own gender as a moderator. However, a person's gender is only a proxy for other factors, such as their beliefs about appropriate gender role behavior as well as their accumulated preferences and habits tied to their own gender socialization (see Deaux & Major, 1987). It would be helpful to access these factors more directly in future studies (e.g., Weitzman, Birns, & Friend, 1985).

Next, a third set of moderators involves characteristics of the child. This includes the child's gender, age, and prior behavior. The meta-analysis took into account child gender and age but not child behavior. However, this factor has been addressed in some recent investigations using sequential analysis (Kerig, Cowan, & Cowan, 1993; Leaper et al., 1995). These studies have identified ways that gender effects on parents' behaviors depend partly on the child's prior behavior (see Fagot, 1978; Fagot & Hagan, 1991; Leaper et al., 1995, for further discussion of this point).

Characteristics of the immediate setting constitute a fourth set of moderators. In the present meta-analyses, we examined the moderating influences of the type of activity, the observational setting, and the presence of one or both parents in the interaction. The importance of these factors is emphasized in recent interactive models of gender typing (e.g., Caldera et al., 1989; Carpenter, 1983; Deaux & Major, 1987; Huston, 1985).

A final set of moderators involves characteristics of the family's sociocultural context. These include factors such as marital status (e.g., Leaper et al., 1995), maternal employment (e.g., Hoffman, 1989), income level (e.g., Brooks-Gunn, 1986), and cultural background (e.g., Leaper & Valin, 1996). Although we collected information pertaining to these kinds of factors for our meta-analysis, there was not sufficient variation across studies to make meaningful comparisons. By and large, the reviewed studies were carried out with middle-class, Caucasian, European American families. As researchers continue to investigate the relationship between these factors and parental gender typing, it will

become possible to examine them in future meta-analyses. In the meantime, we believe our analyses provide strong support for a contextual–interactive model of gender typing.

References

References marked with an asterisk indicate studies used in the meta-analyses.

Anderson, L. R., & Blanchard, P. N. (1982). Sex differences in task and social–emotional behavior. *Basic and Applied Social Psychology, 3,* 109–139.

Aries, E. (1987). Gender and communication. In P. Shaver & C. Hendrick (Eds.), *Review of personality and social psychology* (Vol. 7, pp. 149–176). Beverly Hills, CA: Sage.

*Austin, A. M. B., & Braeger, T. J. (1990). Gendered differences in parents' encouragement of sibling interaction: Implications for the construction of a personal premise system. *First Language, 10,* 181–197.

Bakeman, R., & Gottman, J. M. (1986). *Observing interaction.* New York: Cambridge University Press.

Beal, C. R. (1994). *Boys and girls: The development of gender roles.* New York: McGraw-Hill.

Beall, A. E. (1993). A social constructionist view of gender. In A. E. Beall & R. J. Sternberg (Eds.), *The psychology of gender* (pp. 127–147). New York: Guilford Press.

*Bee, H. L., Van Egeren, L. F., Streissguth, A. P., Nyman, B. A., & Leckie, M. S. (1969). Social class differences in maternal teaching strategies and speech patterns. *Developmental Psychology, 1,* 726–734.

*Bellinger, D. C., & Gleason, J. B. (1982). Sex differences in parental directives to young children. *Sex Roles, 8,* 1123–1139.

Block, J. H. (1976). Issues, problems, and pitfalls in assessing sex differences. *Merrill-Palmer Quarterly, 22,* 283–308.

Block, J. H. (1979). Another look at sex differentiation in the socialization behaviors of mothers and fathers. In F. L. Denmark & J. Sherman (Eds.), *Psychology of women: Future directions for research* (pp. 29–87). New York: Psychological Dimensions.

Block, J. H. (1983). Differential premises arising from differential socialization of the sexes: Some conjectures. *Child Development, 54,* 1335–1354.

Brandt, L. W. (1982). *Psychologists caught: A psycho-logic of psychology.* Toronto, Canada: University of Toronto Press.

*Brody, G. H., Pellegrini, A. D., & Sigel, I. E. (1986). Marital quality and mother–child and father–child interactions with school-aged children. *Developmental Psychology, 22,* 291–296.

*Brody, G. H., Stoneman, Z., & McCoy, J. K. (1992). Associations of maternal and paternal direct and differential behavior with sibling relationships: Contemporaneous and longitudinal analyses. *Child Development, 63,* 82–92.

*Bronstein, P. (1984). Differences in mothers' and fathers' behaviors toward children: A cross-cultural comparison. *Developmental Psychology, 20,* 995–1003.

Brooks-Gunn, J. (1986). The relationship of maternal beliefs about sex typing to maternal and young children's behavior. *Sex Roles, 14,* 21–35.

*Brundin, K., Rodholm, M., & Larsson, K. (1988). Vocal communication between parents and infants. *Early Human Development, 16,* 35–53.

*Caldera, Y. M., Huston, A. C., & O'Brien, M. (1989). Social interactions and play patterns of parents and toddlers with feminine, masculine, and neutral toys. *Child Development, 60,* 70–76.

Carpenter, C. J. (1983). Activity structure and play: Implications for socialization. In M. B. Liss (Ed.), *Social and cognitive skills: Sex roles and children's play* (pp. 117–145). New York: Academic Press.

*Cherry, L., & Lewis, M. (1976). Mothers and two-year olds: A study of sex-differentiated aspects of verbal interaction. *Developmental Psychology, 12,* 278–282.

*Clarke-Stewart, A. (1978). And daddy makes three: The father's impact on mother and young child. *Child Development, 49,* 466–478.

Cloran, C. (1989). Learning through language: The social construction of gender. In R. Hasan & J. R. Martin (Eds.), *Language development: Learning language, learning culture: Meaning and choice in language: Studies for Michael Halliday* (Advances in discourse processes, Vol. 27, pp. 111–151). Norwood, NJ: Ablex.

*Cohen, S., & Beckwith, L. (1976). Maternal language in infancy. *Developmental Psychology, 12,* 371–372.

Crockenberg, S., & Litman, C. (1990). Autonomy as competence in 2-year-olds: Maternal correlates of child defiance, compliance, and self-assertion. *Developmental Psychology, 26,* 961–971.

*Crockenberg, S., & Litman, C. (1991). Effects of maternal employment on maternal and two-year-old child behavior. *Child Development, 62,* 930–953.

Deaux, K., & Major, B. (1987). Putting gender into context: An interactive model of gender-related behavior. *Psychological Review, 94,* 369–389.

*DeLoache, J. S., & DeMendoza, O. A. P. (1987). Joint picturebook interactions of mothers and one-year-old children. *British Journal of Developmental Psychology, 5,* 111–123.

*Endsley, R. C., Hutcherson, M. A., Garner, A. P., & Martin, M. (1979). Interrelationships among selected maternal behaviors, authoritarianism, and preschool children's verbal and nonverbal curiosity. *Child Development, 50,* 331–339.

Engle, M. (1980). Family influences on the language development of young children. *Women's Studies International Quarterly, 3,* 259–266.

*Fagot, B. I. (1978). The influence of sex of child on parental reactions to toddler children. *Child Development, 49,* 459–465.

Fagot, B. I., & Hagan, R. (1991). Observations of parent reactions to sex-stereotyped behaviors: Age and sex effects. *Child Development, 62,* 617–628.

Fagot, B. I., & Leinbach, M. D. (1987). Socialization of sex roles within the family. In D. B. Carter (Ed.), *Current conceptions of sex roles and sex typing* (pp. 89–100). New York: Praeger.

*Field, T. (1978). Interaction behaviors of primary versus secondary caretaker fathers. *Developmental Psychology, 14,* 183–184.

*Frankel, M. T., & Rollins, H. A., Jr. (1983). Does mother know best?: Mothers and fathers interacting with preschool sons and daughters. *Developmental Psychology, 19,* 694–702.

*Fraser, C., & Roberts, N. (1975). Mothers' speech to children of four different ages. *Journal of Psycholinguistic Research, 4,* 9–16.

Gjerde, P. F. (1986). The interpersonal structure of family interaction settings: Parent–adolescent relations in dyads and triads. *Developmental Psychology, 22,* 297–304.

Gleason, J. B. (1979). Sex differences in the language of children and parents. In O. Garnica & M. King (Eds.), *Language, children, and society* (pp. 149–157). Oxford, England: Pergamon.

Gleason, J. B. (1987). Sex differences in parent–child interaction. In S. U. Philips, S. Steele, & C. Tanz (Eds.), *Language, gender, and sex in comparative perspective* (pp. 189–199). Cambridge, England: Cambridge University Press.

*Golinkoff, R. M., & Ames, G. J. (1979). A comparison of fathers' and mothers' speech with their young children. *Child Development, 50,* 28–32.

Golombok, S., & Fivush, R. (1994). *Gender development.* New York: Cambridge University Press.

Greenfield, P. M., Reilly, J., Leaper, C., & Baker, N. (1985). The structural and functional status of single-word utterances and their relation-

ship to early one-word speech. In M. Barrett (Ed.), *Children's single-word speech.* London: Wiley.

*Greenglass, E. R. (1971). A cross-cultural comparison of maternal communication. *Child Development, 42,* 685–692.

*Greif, E. B. (1980). Sex differences in parent–child conversations. *Women's Studies International Quarterly, 3,* 253–258.

*Greif, E. B., & Gleason, J. B. (1980). Hi, thanks, and goodbye: More routine information. *Language in Society, 9,* 150–166.

*Grotevant, H. D., & Cooper, C. R. (1985). Patterns of interaction in family relationships and the development of identity exploration in adolescence. *Child Development, 56,* 415–428.

*Gunnar, M. R., & Donahue, M. (1980). Sex differences in social responsiveness between six months and twelve months. *Child Development, 51,* 262–265.

*Halverson, C. F., & Waldrop, M. F. (1970). Maternal behavior toward own and other preschool children: The problem of "ownness." *Child Development, 41,* 839–845.

Haslett, B. (1983). Communication functions and strategies in children's conversations. *Human Communication Research, 9,* 114–129.

Heisenberg, W. (1958). *Physics and philosophy.* New York: Harper & Row.

*Hladik, E. G., & Edwards, H. T. (1984). A comparative analysis of mother–father speech in the naturalistic home environment. *Journal of Psycholinguistic Research, 13,* 321–332.

Hoffman, L. W. (1989). Effects of maternal employment in the two-parent family. *American Psychologist, 44,* 283–292.

*Hunter, F. T., McCarthy, M. E., MacTurk, R. H., & Vietze, P. M. (1987). Infants' social-constructive interactions with mothers and fathers. *Developmental Psychology, 23,* 249–254.

Huston, A. C. (1983). Sex-typing. In P. H. Mussen & E. M. Hetherington (Eds.), *Handbook of child psychology: Vol. IV. Socialization, personality, and social development* (pp. 387–467). New York: Wiley.

Huston, A. C. (1985). The development of sex-typing: Themes from recent research. *Developmental Review, 5,* 1–17.

*Jacobs, B. S., & Moss, H. A. (1976). Birth order and sex of sibling as determinants of mother–infant interaction. *Child Development, 47,* 315–322.

*Kerig, P. K., Cowan, P. A., & Cowan, C. P. (1993). Marital quality and gender differences in parent–child interaction. *Developmental Psychology, 29,* 931–939.

Klann-Delius, G. (1981). Sex and language acquisition: Is there any influence? *Journal of Pragmatics, 5,* 1–25.

Kuczynski, L., Kochanska, G., Radke-Yarrow, M., & Girnius-Brown, O. (1987). A developmental interpretation of young children's noncompliance. *Developmental Psychology, 23,* 799–806.

*Langlois, J. H., & Downs, A. C. (1980). Mothers, fathers, and peers as socialization agents in sex-typed play behaviors in young children. *Child Development, 51,* 1217–1247.

*Laosa, L. M. (1980). Maternal teaching strategies in Chicano and Anglo-American families: The influence of culture and education on maternal employment. *Child Development, 51,* 759–765.

Leaper, C. (1986). *The sequential patterning of agency and communion in children's talk: Differences associated with age, speaker, gender, and partner gender.* Unpublished doctoral dissertation, Department of Psychology, University of California at Los Angeles.

Leaper, C. (1991). Influence and involvement in children's discourse: Age, gender, and partner effects. *Child Development, 62,* 797–811.

Leaper, C. (1994). Exploring the consequences of gender segregation on social relationships. *New Directions for Child Development, 65,* 67–86.

Leaper, C., & Gleason, J. B. (1996). The relationship of play activity and gender to parent and child sex-typed communication. *International Journal of Behavioral Development, 19,* 689–703.

*Leaper, C., Hauser, S. T., Kremen, A., Powers, S. I., Jacobson, A. M., Noam, G. G., Weiss-Perry, B., & Follansbee, D. (1989). Adolescent–parent interactions in relation to adolescents' gender and ego development pathway: A longitudinal study. *Journal of Early Adolescence, 9,* 335–361.

Leaper, C., Leve, L., Strasser, T., & Schwartz, R. (1995). Mother–child communication sequences: Play activity, child gender, and marital status effects. *Merrill-Palmer Quarterly, 41,* 307–327.

Leaper, C., & Valin, D. (1996). Predictors of Mexican-American mothers' and fathers' attitudes toward gender equality. *Hispanic Journal of Behavioral Sciences, 18,* 343–355.

Lerner, R. M., Skinner, E. A., & Sorrel, G. T. (1980). Methodological implications of contextual/dialectical theories of development. *Human Development, 23,* 225–235.

*Lewis, M. (1972). State as an infant–environment interaction: An analysis of mother–infant interaction as a function of sex. *Merrill-Palmer Quarterly, 18,* 95–121.

*Ling, D., & Ling, A. H. (1974). Communication development in the first three years of life. *Journal of Speech and Hearing Research, 17,* 146–159.

Lips, H. M. (1993). *Sex and gender: An introduction* (2nd ed.). Mountain View, CA: Mayfield.

Lott, B., & Maluso, D. (1993). The social learning of gender. In A. E. Beall & R. J. Sternberg (Eds.), *The psychology of gender* (pp. 99–123). New York: Guilford Press.

Lytton, H., & Romney, D. M. (1991). Parents' differential socialization of boys and girls: A meta-analysis. *Psychological Bulletin, 109,* 267–296.

Maccoby, E. E., & Jacklin, C. N. (1974). *The psychology of sex differences.* Stanford, CA: Stanford University Press.

*Mannle, S., & Tomasello, M. (1987). Fathers, siblings, and the bridge hypothesis. In K. E. Nelson & A. van Kleeck (Eds.), *Children's language* (Vol. 6, pp. 23–41). Hillsdale, NJ: Erlbaum.

*Masur, E. F., & Gleason, J. B. (1980). Parent–child interaction and the acquisition of lexical information during play. *Developmental Psychology, 16,* 404–409.

*McGillicuddy-DeLisi, A. V. (1988). Sex differences in parental teaching behaviors. *Merrill-Palmer Quarterly, 34,* 147–162.

*McLaughlin, B., Schutz, C., & White, D. (1980). Parental speech to five-year-old children in a game-playing situation. *Child Development, 51,* 580–582.

*McLaughlin, B., White, D., McDevitt, T., & Raskin, R. (1983). Mothers' and fathers' speech to their young children: Similar or different? *Journal of Child Language, 10,* 245–252.

Miller, P. M., Danaher, D. L., & Forbes, D. (1986). Sex-related strategies for coping with interpersonal conflict in children aged five to seven. *Developmental Psychology, 22,* 543–548.

*Minton, C., Kagan, J., & Levine, J. A. (1971). Maternal control and obedience in the two-year-old. *Child Development, 42,* 1872–1894.

Mullen, B. (1989). *Advanced BASIC meta-analysis.* Hillsdale, NJ: Erlbaum.

*Mullis, R. L., & Mullis, A. K. (1985). Comparison of mothers' and fathers' speech with that of their school-age children. *Perceptual and Motor Skills, 60,* 567–574.

*Mullis, R. L., Murray, L. W., & Mullis, A. K. (1990). Parent–child problem solving in dyads and triads. *Child Study Journal, 20,* 263–278.

*Noller, P. (1978). Sex differences in the socialization of affective expression. *Developmental Psychology, 14,* 317–319.

*Noller, P. (1980). Cross-gender effects in two-child families. *Developmental Psychology, 16,* 159–160.

*O'Brien, M., & Nagle, K. J. (1987). Parents' speech to toddlers: The effect of play context. *Journal of Child Language, 14,* 269–279.

*Pedersen, F. A., Cain, R. L., Jr., Zaslow, M. J., & Anderson, B. J. (1982). Variation in family experience associated with alternative

family roles. In L. M. Laosa & I. E. Sigel (Eds.), *Families as learning environments for children* (pp. 203–222). New York: Plenum.

*Pellegrini, A. D., Brody, G. H., & Stoneman, Z. (1987). Children's conversational competence with their parents. *Discourse Processes, 10,* 93–106.

Philips, S. (1980). Sex differences and language. *Annual Review of Anthropology* (Vol. 9, pp. 523–544). Palo Alto, CA: Annual Reviews.

*Phillips, J. R. (1973). Syntax and vocabulary of mothers' speech to young children: Age and sex comparisons. *Child Development, 44,* 182–185.

*Rasku-Puttonen, H. (1983). Parent–child communication in families of different educational backgrounds. *Scandinavian Journal of Psychology, 24,* 223–230.

*Reese, E., & Fivush, R. (1993). Parental styles of talking about the past. *Developmental Psychology, 29,* 596–606.

*Rondal, J. A. (1980). Fathers' and mothers' speech in early language development. *Journal of Child Language, 7,* 353–369.

*Roopnarine, J. L., & Adams, G. R. (1987). The interactional teaching patterns of mothers and fathers of their popular, moderately popular, or unpopular children. *Journal of Abnormal Child Psychology, 15,* 125–136.

Rosenthal, R., & Rosnow, R. L. (1984). *Essentials of behavioral research: Methods and data analysis.* New York: McGraw-Hill.

*Rothbart, M. K., & Rothbart, M. (1976). Birth order, sex of child, and maternal help-giving. *Sex Roles, 2,* 39–46.

Ruble, D. N., & Martin, C. L. (1997). Gender development. To appear in W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology (5th ed.): Vol. 3. Social, emotional, and personality development* (pp. 933–1016). New York: Wiley.

*Schaffer, H. R., & Crook, C. K. (1979). Maternal control techniques in a directed play situation. *Child Development, 50,* 989–996.

Schieffelin, B. B., & Ochs, E. (1986). Language socialization. *Annual Review of Anthropology, 15,* 163–191.

Sheldon, A. (1992). Conflict talk: Sociolinguistic challenges to self-assertion and how young girls meet them. *Merrill-Palmer Quarterly, 38,* 95–117.

Siegal, M. (1987). Are sons and daughters treated more differently by fathers than by mothers? *Developmental Review, 7,* 183–209.

*Stoneman, Z., & Brody, G. (1981). Two's company, three makes a difference: An examination of mothers' and fathers' speech to their young children. *Child Development, 52,* 705–707.

*Stuckey, M. F., McGhee, P. E., & Bell, N. J. (1982). Parent–child interaction: The influence of maternal employment. *Developmental Psychology, 18,* 635–644.

Tannen, D. (1990). *You just don't understand: Women and men in conversation.* New York: Morrow.

Tannen, D. (1994). *Gender and discourse.* New York: Oxford University Press.

*Tauber, M. A. (1979). Sex differences in parent–child interaction styles during a free-play session. *Child Development, 50,* 981–988.

*Thoman, E. B., Leiderman, P. H., & Olson, J. P. (1972). Neonate–mother interaction during breast feeding. *Developmental Psychology, 6,* 110–118.

*Tomasello, M., Conti-Ramsden, G., & Ewert, B. (1990). Young children's conversations with their mothers and fathers: Differences in breakdown and repair. *Journal of Child Language, 17,* 115–130.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (Edited by M. Cole, V. John-Steiner, S. Scribner, & E. Souberman). Cambridge, MA: Harvard University Press.

*Weinraub, M., & Frankel, J. (1977). Sex differences in parent–infant interaction during free play, departure, and separation. *Child Development, 48,* 1240–1249.

Weitzman, N., Birns, B., & Friend, R. (1985). Traditional and nontraditional mothers' communication with their daughters and sons. *Child Development, 56,* 894–898.

West, C., & Zimmerman, D. H. (1985). Gender, language, and discourse. In T. A. van Dijk (Ed.), *Handbook of discourse analysis: Vol. 4. Discourse analysis in society* (pp. 103–124). London: Academic Press.

Whiting, B. B., & Edwards, C. P. (1988). *Children of different worlds: The formation of social behavior.* Cambridge, MA: Harvard University Press.

Received July 5, 1995
Revision received October 29, 1996
Accepted October 29, 1996 ■