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A Comparison of Fathers' and Mothers' Talk to Toddlers in Low-income Families

Meredith L. Rowe, *University of Chicago*, and David Coker, and Barbara Alexander Pan, *Harvard Graduate School of Education*

Abstract

The purpose of this study was to provide descriptive information about low-income fathers' and mothers' talk to toddlers and to re-examine the bridge hypothesis (Gleason, 1975) in light of current changes in family structure and childcare responsibilities. Thirty-three father–child and mother–child dyads were videotaped during semi-structured free play at home. Fathers' and mothers' talk to children did not differ in amount, diversity of vocabulary, or linguistic complexity as measured by mean length of utterance. However, fathers produced more wh-questions and explicit clarification requests, thus presenting more conversational challenges to children. Resident fathers employed more direct forms of prohibitives. Results suggest the need for closer examination of factors related to child-directed speech in varying family configurations.

Keywords: child-directed speech; pragmatics; father–child communication; family structure

Empirical research by social interactionists who see children's language as developing in the context of interactions with adults has focused almost exclusively on children's interactions with mothers. Despite the fact that few children in the United States are cared for solely by their mothers in the first few years of life, very little descriptive information is available about the language addressed to young children by fathers and other caregivers. This gap in the literature is particularly striking with respect to the language environments of children in low-income families, families in which shared caregiving by multiple adults may be more common (Casper & O'Connell, 1998). The present study was designed to provide descriptive information on the talk of fathers and mothers with young children in low-income families, and to re-examine the bridge hypothesis (Gleason, 1975) in light of recent changes in family structure and childcare responsibilities. Although it is our view that father–child talk deserves research attention in its own right, in this study we examine similarities and differences in father–child and mother–child talk so as to allow comparison with the few earlier studies of talk by fathers and mothers in middle-class families.

Correspondence may be sent to the first author at the University of Chicago, Department of Psychology, 5848 S. University Ave (G-317) Chicago, IL 60631-1584, USA. Email: *rowemer@uchicago.edu*

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Previous Research on Child-directed Speech by Fathers and Mothers

Although previous research on parental talk to young children has focused primarily on mothers, a few studies have examined similarities and differences in the ways middle-class fathers and mothers talk to their children. These studies have revealed differences in both quantitative and qualitative features of child-directed speech. First, there is some evidence that mothers talk more to their young children than do fathers. A recent meta-analysis of 18 studies carried out by Leaper, Anderson, and Sanders (1998) revealed more talk by mothers than by fathers ($d = .26$). In addition, mothers were found to talk more to daughters than to sons ($d = .29$) (Leaper *et al*., 1998).

Other research suggests that fathers may be more challenging communicative partners for children in that they demand more of children conversationally. When compared to mothers, fathers in Western middle-class samples produce more directives, more wh-questions, and more frequent requests for clarification in talk with children (Gleason & Greif, 1983; Leaper *et al*., 1998; McLaughlin, White, McDevitt, & Raskin, 1983; Tomasello, Conti-Ramsden, & Ewert, 1990). Although directives generally do not serve to elicit conversation from the addressee, in their indirect form they may present cognitive/linguistic challenges in interpretation (e.g., 'I could really use the ball' vs. 'Give me the ball'). Wh-questions are conversationally more demanding than are yes/no questions or statements, because they generally require that the child respond non-imitatively and verbally (rather than simply with a head nod, for example). Requests for clarification, as well, impose the conversational expectation that the child will take another turn and either repeat or modify the original utterance (though of course very young children often do not respond at all).

Based on the above differences in paternal and maternal talk, fathers have been considered more cognitively demanding conversational partners for their children. This phenomenon has been termed the 'bridge hypothesis', stemming from Gleason's (1975) discussion of how fathers serve as a bridge to the outside world. In this role, fathers give children experience conversing with more challenging communicative partners with whom they share less background knowledge. One explanation that has been put forth for fathers' more frequent requests for clarification is that they spend less time with their children and thus are less able to understand children's marginally intelligible utterances. One would expect, then, that fathers who spend less time with their children would ask more clarification questions and match their speech to their child's less closely than fathers who spend more time providing direct childcare. This is a hypothesis that has not yet been tested empirically.

There is already some suggestion in the limited existing research on fathers' child-directed speech that the patterns reported above may not be observable at all child ages or in all socioeconomic and cultural groups. For example, Davidson and Snow (1996) found that fathers in highly educated, middle-class families used less complex language than did mothers in conversation with their five-year-olds. Tenenbaum and Leaper (1997), studying parent–child dyadic conversations in Mexican-American families with four-year-old children, found that fathers asked conceptually less challenging questions than did mothers. Finally, the recent meta-analysis by Leaper and colleagues (1998) indicates that, across studies, effect sizes reflecting differences in the quantity of father and mother talk to children were larger among parents of infants and toddlers than among parents of older children. Because the studies reviewed in that paper were all conducted with middle-class, European-American families, socioeconomic and cultural differences were not addressed.

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With the exception of Tenenbaum and Leaper's studies of Mexican-American families (1997, 1998), most of the research in this area has focused on Western middle-class intact families in which mothers are assumed to be the primary caregivers. To better understand the applicability and the limitations of the bridge hypothesis, the research lens must be broadened to include examination of father and mother talk to children in families that differ in family structure and socioeconomic status. In addition, more research must be undertaken to investigate the possibility that fathers and mothers differ in the degree of attunement or conversational challenge they provide children of different ages.

Social Class and Educational Differences in Mother–Child Communicative Interaction

Over the past decade, research on adult–child communicative interaction has begun to investigate social class differences in mother–child verbal interaction (Hart & Risley, 1995; Hoff-Ginsberg, 1991; Pan & Rowe, 1999). Hoff-Ginsberg (1991) found that upper-middle-class mothers addressed more speech both to their children and to an adult interviewer than did working-class mothers, suggesting that there may be SES-related differences in adults' *general* verbal communicative styles. Furthermore, Pan and Rowe (1999) have shown that variation *among* low-income parents in the amount and diversity of speech they address to toddlers is related to maternal education.

Variation in amount and type of parental talk addressed to children in turn predicts children's later language abilities (Hart & Risley, 1995). In particular, Hart and Risley found that welfare-eligible mothers addressed less speech to their children than did either professional or working-class mothers and that these differences were related to children's vocabulary size at entry to preschool. However, their sample of welfare-eligible families consisted of only six families, making it difficult to assess variability among low-income families and thus potentially limiting generalizability of the results.

These studies document differences in maternal child-directed speech across and within social classes, as well as considerable variation across educational levels. In addition to social class, parents' caregiving responsibilities and practices may also impact the way that fathers and mothers talk to their young children. Next we consider how recent economic and social changes may have altered fathers' caregiving responsibilities, which in turn may have implications for how fathers talk with children.

The Changing Role of the Father

Throughout much of the twentieth century, the American popular conception of the father's role was dominated by the image of the breadwinner who shouldered few childcare responsibilities. The notion of fathers as co-parents, rather than simply as breadwinners began making its way into mainstream American consciousness in the 1970s (Pleck & Pleck, 1997; Tamis-LeMonda & Cabrera, 1999). Pleck (1997) claims that recent increases in fathers' involvement with children and their greater accessibility to children reflect the growing acceptance of fathers as co-parents. Changes in popular conceptions about the role of fathers seem to be associated with increased paternal involvement in childcare, which in turn reflects changing economic forces. Rising numbers of mothers in the workplace have made childcare a pressing issue for

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families across the socioeconomic spectrum (Tamis-LeMonda & Cabrera, 1999). In addition, work demands have changed. As the economy increasingly comes to favor service-industry jobs, nonstandard work hours become the norm. Alterations in work schedules occur most frequently in low-wage jobs, but many higher-wage sales and technical positions also involve nonstandard work hours. These changes have a profound impact on the fabric of home life and particularly childcare (Presser, 1995). Thus, as a result of both social and economic factors, the popular one-dimensional image of the father as the family breadwinner is changing, and fathers are spending more time caring for children. As patterns of childcare change, it is important that research on adult–child interaction be widened to include children's interaction with caregivers other than mothers.

Little research has addressed the interaction of fathers and children in families at lower income levels, despite the suggestion that fathers in such families may spend substantial time providing direct care and socialization for their children. Casper and O'Connell (1998), for example, have identified two work-related factors that influence the amount of time a father spends with his children. First, when a couple's work hours overlap less, fathers tend to spend more time caring for children. For example, if the mother and father work separate shifts, the father is frequently in charge of childcare while the mother works. Second, families at lower income levels rely on childcare by fathers more than families at higher income levels. These economic realities suggest the need to allocate more focused research attention to the communicative interaction of fathers and children in low-income families.

Purpose of the Present Study

Building on past research on paternal and maternal child-directed speech, on social class differences in parent–child interaction, and on the changing role of the father in recent history, the present study was designed to examine low-income fathers' and mothers' talk to toddlers. Our first goal was simply a descriptive one, to help provide a fuller picture of how fathers talk with their young children. We examine here father–child interaction in a group of low-income resident and non-resident fathers and father figures. As background information and to facilitate comparison with future studies of low-income fathers, we provide fathers' estimates of how much time they spend with their children and what kinds of activities they report engaging in with their children.

A second goal was to examine the bridge hypothesis in light of current economic conditions and variations in family structure. The bridge hypothesis, posited on the basis of child caregiving patterns in white, middle-class families of the 1970s, assumed that fathers spend less time than mothers with young children and thus are less familiar with their children's articulation and language level, share less background knowledge with the children, are less able to adjust their speech to the children's level, and thus serve as more challenging communicative partners to their children than do mothers. Logical extension of this argument would predict that non-resident fathers, or fathers who spend less time with their children, would be even less familiar than resident fathers with their children's language skills and thus would constitute the most challenging conversational partners. A comparison of the child-directed speech of resident and non-resident fathers and mothers in a sample of low-income families may help, first, to determine whether the differences observed in middle-class parents are generalizable to families of different socioeconomic background, and additionally,

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whether any differences observed relate to fathers' resident status or time spent with the child.

In summary, our specific research questions were: (1) How do low-income fathers and mothers interact verbally with their two-year-old toddlers? (2) What are the similarities and differences in fathers' and mothers' talk addressed to toddlers? (3) Does fathers' talk with toddlers differ depending on resident status or relate to amount of time spent with children? and (4) Are there relationships between mother–child and father–child measures of talk and/or between parental education and measures of talk?

Method

Participants

The sample for the current study was drawn from a larger study of 146 families participating in a longitudinal evaluation of the effectiveness of Early Head Start. Families were living in a predominantly rural area of New England. All families qualified for welfare and entered the study either during the mother's pregnancy or sometime before the target child's first birthday. Thirty-six fathers and father figures were identified by mothers and agreed to participate in videotaped interaction. Three of these families were eliminated from the current study because English was not the predominant language used in the home or because video quality was poor. Eighty-eight percent of the fathers were the biological fathers of the target child, and 82% of the fathers were resident fathers (i.e., lived with the mother and child). Mean years of education was 12.3 (range 9–19, $SD = 2.41$) for fathers and 12.1 (range 9–18, $SD = 1.62$) for mothers. Parents were white, native English speakers. The mean age of the children during mother–child interaction was 24.77 months (range = 23.03–28.13, $SD = 1.24$). The mean age of children at the subsequent father–child observation was 27.53 months (range = 23.55–32.02, $SD = 2.02$). Of the 33 children, 19 were girls and 14 were boys.

Procedure

For the larger study from which this sample was drawn, fathers and mothers were interviewed about their experiences as parents. Interviews lasted between 30 and 60 minutes and contained structured and open-ended questions. The interview questions asked about the family composition, parenting practices, child-rearing beliefs and the family's financial and social situation. For the current study we present a synthesis of the data regarding how fathers and mothers report spending their time when interacting with their toddlers.

Fathers and mothers were videotaped separately at home in dyadic interaction with their two-year-old toddlers during a book-reading and toy play session. All mother–child interactions took place prior to father–child interactions. To enable comparison, the father–child and mother–child interactions were structured around the same activities. In each session, the dyad was provided with three bags, the first containing a book and the remaining two containing age-appropriate toys. More specifically, mother–child dyads were given Eric Carle's *The Very Hungry Caterpillar* in bag one, a toy cooking set with stove, pots, and plastic food in bag two, and a model of Noah's ark including pairs of animals in bag three. Fathers and their children were given Eric Carle's *The Very Busy Spider* in bag one, a toy pizza with plates and a toy cell phone

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in bag two, and a toy farm that included animals, a farmer, and a tractor in bag three. Parents were asked to start with the first bag, then move on to the second, and finish with the third. Pacing and transition from one bag to the next during the ten-minute interaction was determined by the parent and child.

Transcription, Coding, and Analysis

Videotaped verbal and nonverbal behavior of parents and children was transcribed using the conventions of the Child Language Data Exchange System (CHILDES) (MacWhinney, 2000). The unit of transcription was the utterance, defined as talk by one speaker bounded either by transition in speaker, by grammatical closure, and/or by a pause of more than two seconds. A second transcriber verified all transcripts.

Automated computer analyses of the transcripts using the facilities of the CHILDES system yielded the following measures of father, mother, and child talk: (1) Parent word tokens—the total number of words spoken by each parent; (2) Child word tokens—the total number of child words spoken to each parent; (3) Parent and Child word types—the diversity of vocabulary (i.e., number of different words) used by fathers, mothers, and children; and (4) Parent and Child mean length of utterance (MLU)—mean utterance length in morphemes for father, mother, and child. Total number of words spoken by each parent was investigated because of previous research showing that mothers speak more to their children than do fathers. Although differences between mothers and fathers in utterance length were not found in previous research comparing parents of older children, MLU was included here because of reports in the literature that mothers shorten their utterances in speech with very young children. The number of different words used by fathers and mothers was used as an index of lexical diversity. A rough index of the number of questions asked by parents was generated by a count of utterances phrased in interrogative syntactic form and those marked by rising intonation.

Pragmatic features in parental speech examined included use of wh-questions, explicit clarification requests, directives (direct and indirect), and prohibitions (direct and indirect) (see Table 1). A wh-question was any request for information using the words *who*, *what*, *where*, *when*, *why*, or *how*. For purposes of this study, clarification requests were limited to *explicit* requests for the child to repeat or revise his/her utterance (e.g. *What?*, *What did you say?*). Parental attempts to get the child to perform an action were coded as either direct or indirect directives. Similarly, prohibitions expressing the parent's intent to stop or prevent a child behavior were subcategorized as direct or indirect.

Two of the authors independently coded 15% of the transcripts (half mother–child and half father–child). Coder agreement was 94% (Cohen's kappa = .87). Agreement for individual codes ranged from 77.7% (indirect directives) to 100% (requests for clarification, indirect prohibitions). Somewhat lower coder agreement for indirect directives reflects coders' occasional difficulty in determining whether indirect directives posed as questions were intended as questions or as commands.

Results

To answer the first research question about how low-income parents interact verbally with their toddlers, we present information on how fathers and mothers spend time with their children as well as descriptive statistics on parent word tokens, parent word

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Table 1. Pragmatic Speech Coding Scheme

Type of Speech Act	Definition	Example
Request for Information	Wh-questions framed with who, what, when, where, why or how.	'What are you doing?', 'Where does the cat go?'
Request for Clarificaton	Explicit request for child to repeat/revise utterance.	'What?', 'Say that again', 'Huh?'
Direct Prohibition	Prohibition expressed in the imperative.	'No', 'Stop', 'Don't', 'Wait a minute', 'Be careful.'
Indirect Prohibition	Prohibition expressed indirectly.	'You're not going anywhere.'
Direct Directive	Command expressed through the imperative.	'Give me the ball', 'Look' (unless it's clear the child is already looking).
Indirect Directive	Command expressed indirectly as a question or suggestion.	'Would you give me the ball?', 'I could really use the ball.'

types, parent MLU, and pragmatic features of talk for fathers and mothers considered separately. To address our second research question about similarities and differences in fathers' and mothers' talk with toddlers, we present the results of paired t-tests comparing fathers and mothers interacting with the same child, as well as two-way analysis of variance to investigate any effects of child gender. To address our third research question, we compare the talk of resident and non-resident fathers/father figures and examine relationships between time fathers spent with their children and paternal talk with toddlers. To address our final research question we explore patterns of association between mother–child and father–child talk measures as well as the relationship between language and parental education measures.

Frequency of Parent–Child Interaction and Activities

Fathers reported spending an average of 14.3 ($sd = 5.2$) hours a week with their children. Interestingly, there were no significant differences between resident and non-resident fathers in the amount of time they reported spending with their children per week. Comparable data on how much time mothers spend with their children were not available.

Fathers and mothers were asked about the frequency with which they engaged in particular activities with their children, including language-based activities such as singing, reciting nursery rhymes, reading, and telling stories. Most fathers and mothers reported engaging in one or more of these language-based activities with their young

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children on a daily basis. Thirty eight percent of fathers reported singing songs with their children, 25% reported singing nursery rhymes, 38% reading stories, and 28% telling stories to their children on a daily basis. Fathers who reported reading to their children also reported singing songs and nursery rhymes with them. Strikingly, between 6 and 28% of fathers reported never engaging in one or more of these activities. Also of note was that engagement in these activities was unrelated to the number of hours fathers reported spending with children. Daily engagement in language-based activities with children was widely reported by mothers: 88% reported singing songs, 74% singing nursery rhymes, 65% reading stories, and 50% telling stories one or more times a day. Mothers who reported reading stories with their children also reported telling their children stories, and singing songs and nursery rhymes with their children. Only between 3 and 10% reported never engaging in one or more of the language-based activities.

Fathers' and Mothers' Talk to Toddlers

Descriptive statistics on fathers' and mothers' talk to their toddlers are presented in Tables 2 and 3. Wide variability among both fathers and mothers was observed in amount of talk, diversity of vocabulary, total number of questions, number of wh-questions, and number of directives (both direct and indirect) produced in child-directed speech. Especially striking was variation in amount of talk (word tokens), diversity of vocabulary used (word types), number of questions overall, and wh-questions specifically.

Parents of both genders used prohibitives (direct and indirect) and explicit requests for clarification very infrequently. We note that some proportion of other parental questions (i.e., yes/no and intonation-marked questions) may be *implicit* requests for clarification. However, such moves do not pose the same level of conversational demand on the listener. Indeed, it is unclear whether children are able to distinguish between parental acknowledgments, recasts, and implicit requests for clarification/confirmation when each is marked by rising intonation; certainly adult coders have great difficulty in doing so. Furthermore, parents generally moved on, regardless of whether or not children responded to such moves.

Table 2. Descriptive Statistics for Lexical and Syntactic Measures (n = 33 families)

	Fathers			Mothers			
Measure	Mean	SD	Range	Mean	SD	Range	Paired t-stat
Parent word tokens	695.0	205.0	310–1203	697.0	232.0	296–1294	.06$^{n.s.}$
Parent word types	164.0	34.0	100–243	173.0	44.0	97–320	1.18$^{n.s.}$
Parent MLU	4.9	1.0	3.3–7.5	5.2	1.1	3.4–9.2	1.36$^{n.s.}$
Child word tokens	136.0	93.0	6–360	82.0	65.0	5–233	–4.66***
Child word types	50.0	26.0	3–112	33.0	24.0	3–88	–5.66***
Child MLU	2.0	0.8	1–3.6	1.7	0.5	1.0–3.1	–2.51*

~$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$; n.s. not significant

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Table 3. Descriptive Statistics for Pragmatic Measures (n = 33 families)

	Fathers			Mothers			
Measure	Mean	SD	Range	Mean	SD	Range	Paired t-stat
Total questions	65.7	28.2	17–138	53.2	23.5	6–96	−1.80~
Wh-questions	26.7	15.0	3–66	16.3	8.3	4–34	−4.02***
Total directives	28.4	19.0	1–82	29.9	20.3	2–78	0.35$^{n.s.}$
Direct directives	16.8	11.9	1–51	13.9	9.2	0–42	−1.16$^{n.s.}$
Indirect directives	11.7	10.1	0–46	16.0	14.7	0–58	1.85~
Total prohibitions	3.0	5.0	0–28	2.6	2.6	0–10	−0.50$^{n.s.}$
Direct prohibitions	2.4	4.8	0–27	1.7	2.1	0–9	−0.80$^{n.s.}$
Indirect prohibitions	1.0	1.0	0–3	0.9	1.5	0–6	0.85$^{n.s.}$
Clarification requests	0.8	1.6	0–6	0.1	0.3	0–1	−2.52*

~$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$; n.s. not significant

Fathers and Mothers as Conversational Partners

At the group level, fathers and mothers were more similar than different as conversational partners. Pairwise t-tests comparing father and mother speaking to their own child revealed only two significant differences, namely that fathers posed more wh-questions ($t(32) = -4.02$, $p < .001$) and more explicit requests for clarification ($t(32) = -2.52$, $p < .02$) than did mothers. As noted above, however, explicit requests for clarification were quite rare among all parents. There was a non-significant trend for mothers to produce more indirect directives than fathers ($t(32) = 1.85$, $p < .07$). There were no differences in how either fathers or mothers talked to daughters vs. sons. Results of a 2 × 2 ANOVA (parent gender × child gender) comparing mothers' and fathers' use of word tokens and word types with daughters and sons revealed no differences between the groups (father/daughter, father/son, mother/daughter, mother/son), thus concurring with paired t-test results. Although there were no differences in parental talk related to either parent or child gender, there were differences in child talk. Results of additional pairwise t-tests revealed that children addressed more talk ($t(32) = -4.66$, $p < .001$) and more lexically varied talk ($t(32) = -5.65$, $p < .001$) to their fathers than to their mothers. In addition, the mean length of child utterances addressed to fathers was greater than to mothers ($t(32) = -2.51$, $p < .02$) (see Table 2). Repeated measures ANOVA indicated no differences in any of the child talk measures related to the interaction of child and parent gender.

It is important to note, however, that children were significantly older during interactions with fathers than with mothers ($t(32) = -7.84$, $p < .0001$). To determine whether this age difference was associated with the aforementioned differences found in paternal and maternal speech or in child speech directed to fathers versus mothers, we calculated the length of time that elapsed between mother–child observation and the subsequent father–child observation. This variable was then correlated with the difference scores for the other variables in question, namely the pragmatic measures (i.e., parent wh-questions and requests for clarification), lexical measures (i.e., child tokens

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and child types), and syntactic measures (i.e., child mlu). There was no association between time elapsed and difference in paternal and maternal use of wh-questions or requests for clarification. There were significant positive associations between time elapsed and both children's talk to their fathers versus mothers ($r = .41$, $p < .02$) and the diversity of their vocabulary with each parent ($r = .35$, $p < .04$). However, the difference in children's use of syntax (measured as MLU) with fathers and mothers was not associated with time elapsed between maternal and paternal observations.

Given the wide variability observed among both fathers and mothers on multiple variables related to talk with toddlers, subsequent analysis examined patterns of association among measures. Here again, there were some similarities between fathers and mothers. For example, more talkative parents of both genders used more varied vocabulary ($r = .80$, $p = .0001$ and $r = .81$, $p = .0001$, fathers and mothers respectively). There were also areas of divergence, however. Talkativeness among mothers (word tokens) was moderately negatively associated with proportion of total prohibitions/tokens ($r = -.37$, $p = .04$), proportion of wh-questions/tokens ($r = -.34$, $p = .05$), proportion of direct directives/tokens ($r = -.41$, $p = .02$), and proportions of direct prohibitives/tokens ($r = -.38$, $p = .03$), whereas talkativeness among fathers was not significantly related to any of the pragmatic measures of talk.

Paternal Talk in Relation to Family Structure and Time Spent with Children

We expected that residential fathers would report spending more hours per week with their children than would non-residential fathers. In fact, in this sample, residential status was not related to time fathers reported spending with their children. Collapsing across residential status, fathers' report of time with their children was not significantly associated with any of the measures of father talk.

Contrary to our hypothesis that non-residential fathers would be more demanding conversational partners than resident fathers, there were few differences related to residential status on the language measures examined. However, non-resident fathers did use more indirect prohibitives than did residential fathers ($t(31) = 2.55$, $p < .02$).

Associations Between Parent–Child Talk

Relationships between fathers' and mothers' talk and children's word tokens, types, and MLU were examined to gain more information about the nature of the communicative interaction. Several aspects of child talk were significantly negatively related to the number of direct directives fathers produced (tokens: $r = -0.39$, $p < .05$; types: $r = -0.38$, $p < .05$; and MLU: $r = -0.46$; $p < .05$). Therefore, fathers seem to use fewer direct directives with those children who talk more, use more diverse vocabulary and produce longer utterances. These relationships were not found in regard to indirect directives. Total directives were negatively related to child MLU ($r = -0.38$, $p < .05$) and a non-significant trend in the same direction was observed for child tokens and types. Interestingly, there were no significant relationships found between maternal talk and any child talk measures.

Finally, for both fathers and mothers, educational attainment, measured in years, was negatively associated with use of direct forms of directives ($r = -.38$, $p < .05$ and $r = -.53$, $p < .01$ respectively). Mothers' education was also negatively associated with use of direct prohibitives ($r = -.41$, $p < .05$). In addition, more highly educated mothers used more diverse vocabulary during interaction with their toddlers ($r = .41$, $p < .05$).

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Discussion

Our results raise several questions about the prevalence, consequences, and possible determinants of paternal and maternal child-directed speech. Below we describe how fathers and mothers in this low-income sample talk with their children and compare our results to those reported earlier for middle-class samples. We also evaluate our results in relation to the bridge hypothesis proposed by Gleason (1975) and in light of the changing role of the father in recent times. Then we consider how family structure may influence the nature of parent–child communicative interaction. Finally, we discuss limitations of the current study and suggest directions for future research.

Paternal and Maternal Child-directed Speech

In the context of a semi-structured free-play activity, we observed wide variability among fathers and mothers on many measures of child-directed speech, including amount of talk, diversity of vocabulary, number of wh- and total questions posed, and number of direct and indirect directives produced. Although use of prohibitives and explicit clarification requests was relatively infrequent overall, there was nonetheless moderate variation, particularly among fathers in the sample. These descriptive results suggest that even among low-income samples that are relatively homogeneous in SES and ethnicity, there are substantial individual differences in child-directed speech worthy of further investigation. The extent of variation in these measures further underscores the need to examine variation within as well as across socioeconomic class.

We found no differences between fathers and mothers in amount of talk or in measures of linguistic complexity such as diversity of vocabulary and MLU, suggesting that parents are similar in the degree of accommodation they make to their two-year-olds' syntactic and semantic skills. In the domain of pragmatics, however, the results of our father–mother comparison mirror some of those found in middle-class samples, specifically that fathers produced significantly more wh-questions and requests for clarification than did mothers (Masur & Gleason, 1980; Rondal, 1980; Ratner, 1988). Our findings, however, also differ from some findings with middle-class families (Gleason & Greif, 1983; Tomasello *et al*., 1990) in that fathers in this sample did not produce significantly more direct directives than mothers, although the trends were in the predicted direction. It is important to interpret these similarities and differences cautiously, however, due to the differences in procedures between this study and previous studies discussed.

The role of directives in child-directed speech deserves further investigation. Previous research suggests that mothers in higher socioeconomic classes use directives of all types less frequently in talk to children than do working-class mothers (Hart & Risley, 1999; Hoff-Ginsberg, 1991). Additionally, in working-class families a negative relationship has been found between directives and conversation-eliciting utterances (Hoff-Ginsberg, 1991). One interpretation of this result is that parents of different SES levels have different goals for communicative interaction with their children, with some parents being primarily concerned with directing their children's behavior, while others aim to elicit talk from their children (Hoff-Ginsberg, 1991).

The fact that fathers in middle-class samples produce more directives than do mothers may also reflect differences in parental goals for communicative interaction with young children. However, in the current study, mothers' and fathers' use of direc-

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tives differed little, suggesting the possibility that low-income fathers and mothers may have more similar goals for communicative interaction with their toddlers than do middle-class parents. Even within this sample, however, the notion that parental goals are related to parental education level was supported, in that more educated mothers and fathers used fewer direct forms of directives with their children.

By posing more wh-questions to children and asking children to clarify themselves, fathers in this study seemed to constitute more challenging communicative partners than did mothers. Both wh-questions and clarification requests anticipate a verbal response from the child. Fathers' more frequent use of these pragmatic functions required children to assume more communicative responsibility in the interaction. Thus, the greater use of these pragmatic functions by fathers may place more linguistic and cognitive demands on the child. Indeed, children did talk more, use more diverse vocabulary, and produce longer utterances when interacting with their fathers. It is in this manner that fathers may serve as a bridge to the outside world.

Additional differences between paternal and maternal child-directed speech were evident through our results examining patterns of associations among speech measures. While both fathers and mothers who talked more also used more varied vocabulary, the amount of talk mothers addressed to their children was negatively associated with the proportion of total prohibitions, wh-questions, direct directives, and direct prohibitives per total amount of talk. Therefore, mothers who talked a lot tended to use fewer prohibitives, fewer direct directives, and fewer wh-questions than mothers who talked less. These associations were not found in fathers' child-directed speech. Rather, a different pattern of relationships was found for fathers. Specifically, fathers used proportionately fewer direct directives with those children who talked more, produced more varied vocabulary, and longer utterances.

In sum, the results presented here, with a relatively small sample, indicate that the bridge hypothesis based on research with middle-class families may also have some applicability to low-income families. In light of research indicating that low-income children on average are exposed to less language input from their parents than are their middle-class counterparts (Hart & Risley, 1995), the role of fathers as a linguistic bridge to the outside world may be particularly important for low-income toddlers' language development and transition from home to school. At the same time, the fact that similarities outnumbered differences in how fathers and mothers talked to their children may reflect the changing role of the father in recent decades.

Family Structure

One of our initial hypotheses was that fathers' residential status would be related to characteristics of fathers' speech to their toddlers. We reasoned that residential fathers might spend more time with their children and thus be more in tune with the children than were non-residential fathers. Contrary to our expectations, we found few differences in how much time resident and non-resident fathers reported spending with their children. Neither were there widespread differences in how residential and non-residential fathers communicate with their toddlers. However, non-resident fathers did use more indirect forms of prohibitives with their children. The use of these indirect forms poses more of a challenge to the child, suggesting either that the non-residential fathers are less in tune with their child's language abilities or that they are reluctant to use more blunt forms of prohibition. Several possible explanations for the paucity of differences related to father residential status present themselves.

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First, the small number of non-resident fathers in the current sample may have limited our ability to detect other differences. Alternatively, or perhaps additionally, resident and non-resident fathers in this sample by their own report spend roughly equivalent numbers of hours a week with their children.

Limitations and Directions for Future Research

This study suffers from a number of limitations. First, because mothers referred fathers/father figures for participation in the study, non-resident fathers who do not interact with their child's mother or who do not live nearby were unlikely to be included. Indeed, only 18% of the current sample was non-resident fathers. While perhaps reflecting the realities of children's lives (given the gatekeeping privileges mothers generally enjoy), this sampling bias may have limited variability both in the amount of time fathers/father figures reported spending with children and in the characteristics of paternal talk under observation. Future studies of father–child interaction in which fathers are recruited directly, rather than through mothers, are much needed. Furthermore, due to the fact that mothers referred fathers, there was often a substantial time difference between when children were observed with mothers versus with fathers. In addition, self-report of time spent with children may be suspect. Reliable information about how much time fathers and mothers spend in caregiving activities with their toddlers would permit more rigorous testing of hypotheses related to input factors.

Finally, although the fathers in this study were found to be more challenging communicative partners than were mothers in some respects, other studies with older children have found the reverse to be true (Davidson & Snow, 1996; Leaper *et al*., 1998; Tenenbaum & Leaper, 1997). As Davidson and Snow suggest, it may be that fathers are better able to adjust to their children's level of speech as children get older. Longitudinal studies following the same children (and parents) over time may help discriminate characteristics of fathers' and mothers' talk that are relatively constant (perhaps reflecting educational background, parenting beliefs, and/or gender-specific patterns of communicative interaction) from those that change over time as children's own language develops.

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