

Open Ended Questions: A Comparison of Mothers' and Fathers' Language Use during Play Time*

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Abstract

Parent level of education makes important contributions to the linguistic development of children (Hoff, 2003). This cross-sectional study focuses on the link between family socioeconomic status (SES) and child-directed speech and aims to investigate how parents' levels of education influence their language use in terms of their question types. Asking children good questions is a critical tool for developing their skills. In particular, open ended questions are believed to be useful for developing children's cognitive skills, as these questions encourage children express and elaborate upon their thinking, and to provide rationales for their thoughts (Lee, Kinzie, & Whittaker, 2012). They usually involve reasoning and judgment (Hargreaves, 1984). In addition to these, open ended questions are found to offer linguistic advantages for children. They help develop children's vocabulary. Since children are expected to think at higher levels when they enter school, open ended questions are important tools in engaging children in cognitively challenging conversations and promoting higher-order thinking in the preschool period. Within this context, this study is an attempt to explore how parents from different socioeconomic backgrounds guide their preschoolers with regard to their question types. Families differing in socioeconomic status were audiotaped in their homes for about 20 minutes while they were playing with their 5-year-old children. Results demonstrated that high SES parents asked more open ended questions and spoke to their children much more than low SES parents. These findings suggest that children of high SES families are introduced with higher-order thinking before school by their parents. Thus, high SES children who start school with better language skills are able to develop better literacy skills.

Keywords

Maternal Language Use, Paternal Language Use, Open Ended Questions, Child-Directed Speech

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1. Introduction

Over the last few decades there has been growing interest in research on parents and their involvement in children's lives. Child-directed speech, parental talk that is directed to the target child, has a positive effect on children's language skills. Especially the quality of mother-child interaction has been identified as an important element associated with child development. The supportive role of parents' child-directed speech is well documented and research has shown that parents' engagement with their children is related to children's linguistic and cognitive skills (e.g. Tamis-LeMonda, Bornstein, & Baumwell, 2001; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004; Landry, Smith, & Swank, 2006). Studies have shown that interactions between mothers and their young children are predictive of positive child cognitive and language outcomes (e.g. Hoff-Ginsberg, 1991; Tamis-LeMonda et al., 2004; Duursma, Pan, & Raikes, 2008; Pancsofar & Vernon-Feagans, 2006, 2010).

Most of the research on parent-child interactions has focused on mothers, and not fathers. However, recent studies on paternal language have shown that fathers are not just the bread winner and interactions between fathers and their young children are also predictive of positive child cognitive and language outcomes (e.g. Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004; Duursma, Pan, & Raikes, 2008; Pancsofar & Vernon-Feagans, 2006, 2010).

Family socioeconomic status (SES) also plays a very important role in children's linguistic development (Hoff, 2003). Several studies have found links between SES and early language development (Hart & Risley, 1995; Fish & Pinkerman, 2003). Hoff-Ginsberg (1998) found that high SES families used richer vocabulary of object labels. High SES mothers use longer utterances and more different words, in turn, their children have larger vocabularies; low SES mothers are found to talk less and use less varied vocabulary during interaction with their children (Hoff 2003). Heath (1983) and Ninio (1980) also indicated that parents from low SES talk much less to their children than high SES parents. According to Hoff, Laursen & Tardif (2002), mothers' talk to children differs as a function of SES; high SES mothers show more of the characteristics of maternal speech that are positively associated with language development than lower SES mothers. McCabe & Peterson (1991) and Peterson & McCabe (1992) also claim that differences in parental style of talking with young children affect children's later narrative style.

Studies examining maternal and paternal child-directed speech (Fernald, Taeschner, Dunn, & Papousek, 1989; Kavanaugh & Jirkovsky, 1982; Rondal, 1980; McRoberts & Best, 1997; Leaper, Anderson, & Sanders, 1998; Pancsofar & Vernon-feagans, 2006) have been very limited. Research comparing mother and father verbal input has found that fathers adopted a simplified speech register and spoke with a higher pitch (Fernald, Taeschner, Dunn, & Papousek, 1989). Golinkoff & Ames (1979) compared maternal and paternal language in a dyadic and triadic situation and found that in the dyadic situation, mothers and fathers produced similar number of utterances but in the triadic situation, the fathers produced fewer utterances than mothers. There are some other studies which have not found significant differences between the two parents on measures of total output (McLaughlin, White, McDevitt, & Raskin, 1983; Hladik & Edwards, 1984; O'Brien & Nagle, 1987).

In Turkey, although there are studies concerning the properties of Turkish maternal language (Küntay & Slobin, 1995, 1996, 2001, 2002; Küntay & Ahtam, 2004; Türkay, 2007; Cengiz, 2010, 2013; Cengiz & Çakır, 2012a, 2015), very little research examined paternal child-directed speech (Cengiz & Çakır, 2012b, 2016). Studies on fathers in Turkey usually examined fathers' attitude towards child care, perceptions of their fathering roles and their participation levels in child care (e.g. Bekman, 2001; Fişek, 2001; Taşkın & Erkan, 2009). There is almost no research to my knowledge comparing maternal and paternal language use compared to the number of studies in other countries. The purpose of the present study is therefore to compare mother and father language input to their preschoolers and focus on the link between parents' SES and their use of open ended questions within the context of *toy play*.

Open Ended Questions

Asking children good questions is a critical tool for encouraging essential skills such as observing, predicting, classifying, analyzing, inferring and communicating (Greenfield et al., 2009). Parents' skillful questions can motivate children's inquiries and support their higher-order thinking skills. Open-ended questions are believed to be particularly useful for developing children's cognitive skills, as these questions can encourage children to express and elaborate upon their thinking, and to provide rationales for their thoughts (Hargreaves, 1984; de Rivera, Girolametto, Greenberg, & Weitzman, 2005). Open-ended questions are likely to engage children in

higher-order thinking (Roth, 1996) and usually involve reasoning and judgment (Hargreaves, 1984). Open-ended questions have been found to offer linguistic advantages for children. They help develop children's vocabulary encouraging them to express their ideas, and they lead to extended conversation (Harlen, 1999).

An open-ended question is defined as a question to which a number of different answers would be acceptable. A closed-ended question is one that expects one possible response as its acceptable answer. It can be answered by "yes" or "no" with factual information. An important criterion for distinguishing between the two types of questions is, therefore, the number of potentially correct answers (Hargreaves, 1984).

Studies comparing mother and father language input in terms of questions found differences between parents (Leaper, Anderson, & Sanders, 1998; McLaughlin, White, McDevitt, & Raskin, 1983; O'Brien & Nagle, 1987; Rondal, 1980; Rowe et al., 2004). According to the findings of these studies, fathers raise proportionally fewer total questions, more open ended questions, and fewer closed ended questions than do mothers. In contrast, Malone and Guy (1982) found that fathers had a lower proportion of total questions, a lower percentage of open ended questions, and a higher percentage of closed ended questions than did mothers. However, other studies have not found a significant difference between fathers and mothers in terms of use of questions (Golinkoff & Ames, 1979; Hladik & Edwards, 1984; Hummel, 1982; Kavanaugh & Jirkovsky, 1982; Kruper & Uzgiris, 1987). Again, in their analysis of mothers' and fathers' language use, Leaper, Anderson & Sanders (1998) found that there were no differences in the use of questions.

Within the framework outlined so far, the purpose of this cross sectional study is to examine variations in open ended questioning of parents from different social class levels. While previous studies on parent-child interaction generally investigated language input of either mothers or fathers in contexts like book-reading, picture task, meal time and dressing, this study investigates the properties of both maternal and paternal language use by examining the interaction between parents and their preschoolers in the context of *toy play* with regard to parents' open-ended questioning. By comparing parents' language input during toy play; this study tries to find out how mothers and fathers use of questions differs depending on their SES. In this respect, this research tries to answer the following research question:

- Are there any SES-related differences between parents' language use including types of their questions in the context of *toy play*?

2. Method

2.1. Participants

Ten fathers, ten mothers and their five-year old preschoolers participated in this study. Families were married, with both parents living in the home. They all lived in İzmir and were native Turkish speakers. **Table 1** and **Table 2** present and overview of the characteristics of the participants. **Table 1** provides demographic information on the mothers and **Table 2** on the fathers contributing to this study. Low SES families had only a primary or

Table 1. Demographic characteristics of mothers.

Mothers	Age	Mother's education	Mother's employment	Family monthly income	
	1	35	College graduate	Instructor	More than 3000 TL (\$1050)
	2	36	Master's degree	Food engineer	More than 3000 TL (\$1050)
High SES	3	34	Master's degree	Instructor	More than 3000 TL (\$1050)
	4	34	College graduate	Instructor	More than 3000 TL (\$1050)
	5	33	Master's degree	Instructor	More than 3000 TL (\$1050)
	1	32	Primary school graduate	Housewife	Less than 1000 TL (\$350)
	2	39	Secondary school graduate	Housewife	Less than 1000 TL (\$350)
Low SES	3	30	Primary school graduate	Housewife	Less than 1000 TL (\$350)
	4	40	Primary school graduate	Housewife	Less than 1000 TL(\$350)
	5	36	Primary school graduate	Housewife	Less than 1000 TL (\$350)

Table 2. Demographic characteristics of fathers.

Fathers	Age	Father's education	Father's employment	Family monthly income	
High SES	1	34	College graduate	Businessman	More than 3000 TL (\$1050)
	2	36	Master's degree	Engineer	More than 3000 TL (\$1050)
	3	34	College graduate	Bank employer	More than 3000 TL (\$1050)
	4	34	College graduate	Instructor	More than 3000 TL (\$1050)
	5	35	PhD	Assist. Prof.	More than 3000 TL (\$1050)
Low SES	1	32	Primary school graduate	Worker	Less than 1000 TL (\$350)
	2	48	Secondary school graduate	Self-employed	Less than 1000 TL (\$350)
	3	29	Primary school graduate	Worker	Less than 1000 TL (\$350)
	4	54	Secondary school graduate	TV repairman	Less than 1000 TL(\$350)
	5	38	Primary school graduate	Self-employed	Less than 1000 TL (\$350)

secondary school education, and lived in suburban areas, whereas high SES families had completed four years of college or received a master's degree/PhD, and lived in more affluent districts of İzmir. All children attended nursery schools in their neighborhoods on weekdays.

As illustrated in **Table 1**, mother participants ranged in age from 30 to 40 years, with a mean of 34.9 years. The average age of high SES mothers was 34.4 and that of low SES mothers was 35.4.

The father participants ranged in age from 29 to 54 years, with a mean of 37.4 years. The average age of high SES fathers was 34.6 and that of low SES fathers was 40.2. While low SES fathers had only a primary or secondary school education, high SES fathers had completed four years of college ($n = 3$) or received a master's ($n = 1$) or doctoral degree ($n = 1$). The fathers were employed outside of the home.

2.2. Data Collection Procedure

Participants were selected by means of purposive and snowball sampling methods. The reason for the small number of participants is that fathers had little or no incentive to attend, or were not available due to their working hours. Difficulties in recruitment of fathers were also caused by suspicion of a project on testing intelligence. Therefore, mothers were enlisted to encourage their partners to participate. Mothers' encouragement and information on the study helped to ensure father participation. After obtaining the participants' consent to contribute to the research, the families were visited at home by the researcher.

Before the observational session, each mother and father was interviewed regarding her/his education, age and employment. The parents' gender, age, education and monthly income were recorded. After the interview process, each mother-child dyad was invited into a separate room. The picture below was shown to the mother-child dyads and they were told either to use the blocks to build what they saw in the picture or that they were free to construct whatever they wanted with the building blocks.

As illustrated in **Figure 1**, the toys used in this context were building blocks with a set of wooden blocks. The blocks had different colors and shapes and contained a little bell, ramps and glass marbles.

Mothers were instructed to play with their children for about 20 minutes the way they usually would do with the building blocks provided by the researcher. The only restriction was that they had to play in the field of the voice recorders and that they should use the toys provided. The mother-child dyads sat on the floor during the play session. The researcher placed two voice recorders on the floor and were not present in the room during the recording in order to make the mothers and children feel comfortable. Recording started when they had settled in the room, which was approximately one minute after they came into the room. If the child was distracted from playing or not willing to play, they were allowed to terminate the session and leave the room.

After the mothers played with their children, the fathers repeated the same procedure. *Problems in starting the play session again with the fathers were not observed. On the contrary, the children were very interested in the toys and wanted to play again with their fathers.*

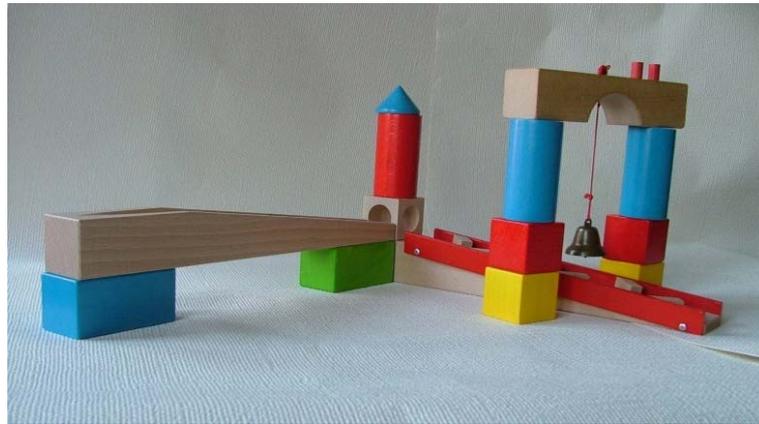


Figure 1. Toy blocks used in the study.

2.3. Data Analysis

All mothers, fathers and their five-year old children showed an interest in the interactive toy play session. Each interaction lasted between 06:00 and 36:00 minutes ($M = 15:00$ min.). These interactions were taped and then transcribed. In line with Rowe (2012), the unit of transcription was an utterance, and two or more independent clauses, occurring within the same conversational turn were considered as separate utterances. An utterance is defined as a conversational turn that contains one or more syntactic units and it is usually preceded and followed by a pause (Huttenlocher et al., 2010; Rowe, 2012).

Transcripts were analyzed and father's and mothers' utterances were ascribed to the corresponding type of questions. Thus, each utterance was categorized as open ended or closed ended question. Since the total number of utterances differs for high SES and low SES mothers, the results of this analysis are presented in raw numbers and also in percentages to show the distribution of utterances between the two groups. Statistics were performed on the results of total utterances and open ended question use to determine significance levels. Since the sample size of the study was small, a nonparametric test, two-independent-sample test, Mann Whitney U was applied using SPSS statistical packages (version 13.0). Statistical *significance* for all measures was deemed at $p < .10$ based on two-independent-sample test.

3. Results

This study aimed to examine the link between mothers' and father's socioeconomic status and their language use with regard to open ended questions. **Table 3** presents the raw numbers of utterances produced by mothers, fathers and their children during the toy play session.

As shown in **Table 3**, the analyses on the number of utterance revealed that fathers produced more utterances than mothers while playing with their children. In other words, fathers spoke to their children much more than mothers did. In accordance with the higher number of utterances of fathers, children also revealed an increase in the number of utterance while playing with their fathers. **Table 4** provides the statistics on mothers' and **Table 5** presents the statistical analyses on fathers' total utterances.

According to the results presented in **Table 4**, there was no significant difference ($p = .175 > .10$) in the use of total utterances between high SES and low SES mothers. However, a significant difference ($p = .047 < .10$) has been found between high and low SES fathers. In **Table 6**, the percentages and the raw numbers (in parentheses) of total utterances, open ended questions, and closed ended questions are given. Additionally, **Figure 1** provides an overview on the use of open ended questions of high SES and low SES mothers and fathers. Proportion of questions was the ratio of totalquestions to total verbal utterances. Questions consist of all utterances that ended in a question mark.

As shown in **Table 6**, high SES mothers produced 334 question (31%) and low SES mothers asked 159 questions (22%) during child-directed speech. While high SES mothers asked 136 (13%) open-ended question, low SES mothers produced 58 (8%) open-ended questions. In both parents the proportion of closed ended questions was higher than the proportion of open ended question.

Table 3. Overall distribution of mothers', fathers' and their children's total utterances during toy play.

	Total utterances	Total utterance of children
High SES mothers	1085	396
Low SES mothers	712	210
High SES fathers	1557	746
Low SES fathers	851	497

Table 4. Descriptive statistics on mothers' total utterances

	Group	N	Ranks	
			Mean Rank	Sum of Ranks
Total utterance	1	5	6.80	34.00
	2	5	4.20	21.00
	Total	10		

Test Statistics ^b	
	Total utterance
Mann-Whitney U	6000
Wilcoxon W	21,000
Z	-1.358
Asymp. Sig. (2-tailed)	.175
Exact Sig. [2*(1-tailed Sig.)]	.222 ^a

^aNot corrected for ties; ^bGrouping Variable: Group_No.

Table 5. Descriptive statistics on fathers' total utterances.

	Group	N	Ranks	
			Mean Rank	Sum of Ranks
Total utterance	1	5	7.40	37.00
	2	5	3.60	18.00
	Total	10		

Test Statistics ^b	
	Total utterance
Mann-Whitney U	3000
Wilcoxon W	18,000
Z	-1.991
Asymp. Sig. (2-tailed)	.047
Exact Sig. [2*(1-tailed Sig.)]	.056 ^a

^aNot corrected for ties; ^bGrouping Variable: Group_No.

Table 6. Overall distribution of mothers' and fathers' questions.

	Total Utterances	Total questions	Open ended questions	Closed ended questions
High SES mothers	1085	31% 334	13% (136)	18% (198)
Low SES mothers	712	22% 159	8% (58)	14% (101)
High SES fathers	1557	30% 459	12% (183)	18% (276)
Low SES fathers	851	25% 211	7% (55)	18% (156)

The same difference was also observed between high and low SES fathers. High SES fathers raised 459 questions (30%) and low SES fathers asked 211 (25%) questions during the toy play session. With the ratio of 18%, high SES fathers asked more closed ended questions than open ended questions (12%). In low SES fathers, the rate was 7% in open ended questions and 18% in closed ended questions.

Figure 2 presents the proportion of open ended questions used by mothers and fathers with a different socioeconomic background. As mentioned above and presented clearly in **Figure 2**, high SES parents asked more questions during the play time with their children. Descriptive statistics on the use of open ended questions is given in **Table 7** and **Table 8**.

As shown in **Table 7**, the comparison of high SES and low SES mothers' use of open ended questions was significant ($p = .028 < .10$). Thus, high SES mothers used more open-ended questions during their interaction with their children.

Table 8 presents the use the statistical analyses on open ended questions of fathers. In the analyses the p -value is .251 and the p -value is greater than the level of significance. Thus, the difference between the fathers' SES and the use of questions is statistically not significant ($p > .10$).

4. Discussion

This study aimed to compare maternal and paternal language use with a specific emphasis on open ended questions. Results gave an affirmative answer to the research question: "Are there any SES-related differences between parents' language use including types of their questions in the context of *toy play*?" The findings demonstrated that high SES mothers raised significantly more open ended questions during free play. Although it is statistically not significant, high SES fathers also used more open ended questions than low SES fathers while playing with their preschoolers. It can be said that by producing significantly more open ended questions, high SES parents introduced their children with higher-order thinking before entering school. The findings of this study support previous research on SES in terms of open ended questioning. In terms of SES, previous work on parents' speech has found that parents' language differed as a function of SES (Hoff, Laursen, & Tardif, 2002; Rowe, 2008). However, a big difference was not found between high SES mothers (13%) and fathers (12%) and also between low SES mothers (8%) and fathers (6%) on the uses of open ended questions. Both groups of parents introduced their children with a similar amount of questions. This finding is in accordance with previous research comparing parental language use (McLaughlin, White, McDevitt, & Raskin, 1983; O'Brien & Nagle, 1987; Leaper, Anderson, & Sanders, 1998).

Together with the use of open ended questions, this study also examined the total amount of utterances. According to the findings, the amount of child-directed speech differed between high SES and low SES parents. Both high SES mothers and fathers produced more utterances during the play session. This result is in line with the literature in this area which shows that the level of education, thus the socioeconomic status of parents has a positive effect on the verbal responsiveness of parents. It means that high SES parents spoke to their children much more than low SES parents which is in accord with Heath (1983) and Ninio (1980) in that parents from low SES talk much less to their children than high SES parents. It may be that because high SES parents had longer educational backgrounds and having longer educational background may raise awareness about the importance of *speaking* in child rearing. It may also be related with the ages of low SES parents. Since they were older than high SES parents, they might have felt too tired to speak much.

Another important finding of this study is that, contrary to what was expected and contrary to other studies,

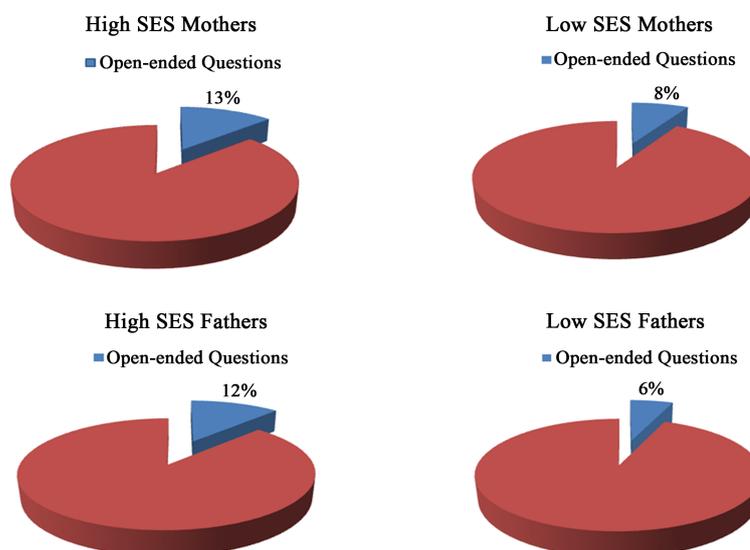


Figure 2. Use of open ended questions by mothers and fathers.

Table 7. Descriptive statistics on mothers' open ended questions.

	Group	N	Ranks	
			Mean rank	Sum of ranks
Open ended questions	1	5	3.40	17.00
	2	5	7.60	38.00
	Total	10		

Test Statistics ^b		Total_OQ
Mann-Whitney U		2000
Wilcoxon W		17,000
Z		-2.200
Asymp.Sig. (2-tailed)		.028
Exact Sig. [2*(1-tailed Sig.)]		.032 ^a

^aNot corrected for ties; ^bGrouping Variable: Group_No.

Table 8. Descriptive statistics on fathers' open ended questions.

	Group	N	Ranks	
			Mean rank	Sum of ranks
Open ended questions	1	5	4.40	22.00
	2	5	6.60	33.00
	Total	10		

Test Statistics ^b		Total_OQ
Mann-Whitney U		7000
Wilcoxon W		22,000
Z		-1.149
Asymp. Sig. (2-tailed)		.251
Exact Sig. [2*(1-tailed Sig.)]		.310 ^a

^aNot corrected for ties; ^bGrouping Variable: Group_No.

the amount of child-directed speech was higher in fathers than mothers. Fathers, especially the high SES fathers provided their children with a greater amount of parent talk which led to an increase of child engagement during toy play. So, children increased their conversational participation while playing with their fathers. This result is unexpected because previous research comparing mother and father language input (Golinkoff & Ames, 1979; Rondal, 1980; Leaper, Anderson, & Sanders, 1998; Pancsofar & Vernon-Feagans, 2006) found that mothers spoke more with their children than fathers. Several explanations seem possible. First, it is possible that the occupation of mothers may have affected the interaction behaviour with their children. Four of the high SES mothers were instructors working with university students for more than ten years. Thus, they may have employed a more teacher like, that is a didactic speech while playing which resulted in less interaction. In this respect, mothers might have turned the playing session into a teaching opportunity. Second, it is possible that because the fathers played after the mothers, the children were already familiar with the toys in the second play session and had a lot to explain and talk with their fathers which might have increased the amount of talk both in fathers and their children. Finally, the marbles and building blocks used in the toy play session might have attracted fathers more than mothers. As a result, fathers having fun and enjoying the playing time with their children might have talked more and thus increasing the parent-child interaction.

When considering the findings, its becomes clear that socioeconomic status of parents lead to an increase in the use of open ended questions and total amount of utterances. The amount of language input and open ended questions contribute importantly to the development of cognitive and language skills, providing their children with a head start in primary school when formal schooling starts. Research has shown that these children introduced with higher-order thinking before school by their parents today are the most successful students of tomorrow (Lee, Kinzie, & Whittaker, 2012).

5. Conclusions

The findings of this study provide evidence for the fact that child-directed speech is not only influenced by the gender of caregivers but also by the socioeconomic backgrounds of parents. However, a larger group of participants is necessary to identify quantity and quality of language differences between parents.

This study was limited in that sample size ($n = 20$ dyads) was small. Another limitation was the non-homogeneity of mothers' and fathers' personal characteristics. And finally, this study looked at the maternal and paternal language only within the context of toy play and in terms of open ended questions. Since it was a cross-sectional study and the sample was not representative especially with regard to parents' personal characteristics, the parents cannot be generalized to the general population of parents. Thus, generalization of the results requires some caution, and the limitations of the study should be borne in mind. On the other hand, this study can be regarded as having extended the existing Turkish literature on parent-child interaction and as having provided an important first step by comparing maternal and paternal language use which is a domain that has received relatively little attention in Turkey.

Future multidisciplinary studies are needed to investigate child-directed speech in different contexts with a greater number of participants. Since low SES children do not have the same quantity or quality of language exposure as children from high SES families by the time they enter school, there is a need to provide means for low SES children to be exposed to higher order thinking language. In this respect, working with low SES parents would be an effective way to prevent the language gap between low SES and high SES children. The properties of the child-directed speech that influence literacy skills of children should be more fully explored. Studies on parent-focused intervention could also be carried out on Turkish low SES parents. Intervention studies in other countries found that working with parents and raising awareness on child-directed speech can result in an increase in parent talk to children (e.g. Tannock, & Giralametto, 1992; Hemmeter & Kaiser, 1994; Yoder & Waren, 2002). Further research is necessary in Turkey, specifically longitudinal studies, to establish the pervasiveness of effects on parent input and to examine the extent to which the language gap resulting from low socioeconomic backgrounds can be prevented through this approach.

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