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THE EFFECT OF INFANT GENDER ON LANGUAGE USED BY ADOLESCENT MOTHERS

A Thesis

Presented for the

Master of Arts

Degree

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ABSTRACT

The purpose of this descriptive study was to examine language used by mothers interacting with their infants (under a year of age) to determine if mothers of males tended to talk differently to their infants than mothers of females. Four adolescent mothers (mean age 16) and four young mothers (mean age 21) were each videotaped for fifteen minutes while interacting with their infants. The following measures were used to evaluate the language used by mothers: mean length of response, type-token ratio, and an utterance classification system based on The Maternal Language Classification Scale developed by Mahoney and Peterson (1980). The results of this study suggest:

1. Mothers of males do tend to talk differently than mothers of females. Mothers of males tend to differ from mothers of females in the use of certain types of utterances and in the diversity of their vocabulary.
2. Adolescent mothers tend to be less verbal during interactions with their infants than young mothers.
3. Certain types of utterances (verbal play and utterances which seek the child's attention) tend to be influenced when an observer is present in the room.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
	Maternal Interaction and Language Development	1
	Maternal Interaction, Infant Gender, and Language Development	2
	Adolescent Maternal Interaction, Infant Gender, and Language Development	3
	The Problem	3
	Statement of the problem	3
	The purpose of the study	3
	Definition of Terms	4
	Question	4
II.	REVIEW OF LITERATURE	5
	Mature Mother-Infant Interaction and Language Development	5
	"Motherese"	5
	Social Class	8
	Age of Infant	9
	Maternal Interaction, Infant Gender, and Language Development	10
	Adolescent Mother-Infant Interaction and Language Development	12
III.	METHODS AND PROCEDURES	15
	Subjects	15
	Data Collection	16
	The mother-infant dyad	16
	Post observation	18
	Instrumentation	18
	Analysis of Data	19
	Transcription	19
	Mean length of response and type-token ratio	19
	Categorization of utterances	19
	Coder reliability	20
IV.	RESULTS AND DISCUSSION	21
	Results	21
	Data	21
	Number of utterances	21
	Mean length of response and type-token ratio	23
	Utterance types more prevalent among mothers of males	23
	Utterance types more prevalent among mothers of females	26

CHAPTER PAGE

IV. (continued)

Utterance types which differed for adolescent and young mothers 28
Post-observation questions 28
Differences between observation sessions 28
Discussion 32
Maternal Interaction and Infant Gender 32
Mean Length of Response (MLR) 32
Type-Token Ratio 33
Utterance Types 33
Adolescent Mothers Versus Young Mothers 35
Differences between Observation Sessions 36
Limitations of the Study 37
Implications for Further Study 38

V. SUMMARY AND CONCLUSIONS 39

Summary 39
Conclusions 39

REFERENCES 41

APPENDICES 45

Appendix I. Definitions of Utterance Types 46
Appendix II. Subjects: Biographical Information 53

LIST OF TABLES

TABLE		PAGE
1.	Raw Data Concerning Mothers and Their Infants	22
2.	Mean Scores for Mothers of Male and Female Infants	24
3.	Mean Length of Response (MLR) and Type-Token Ratio (TTR) as a Function of Maternal Age	24
4.	Types of Utterances More Prevalent Among Mothers Talking to Their Male Infants	25
5.	Types of Utterances More Prevalent Among Mothers Talking to Their Female Infants	27
6.	Raw Data Concerning Post-observation Questions	29
7.	Raw Data Concerning Observation Sessions I, II, and III Given in Percentages	30

CHAPTER I

INTRODUCTION

Adolescent pregnancy has become a significant phenomenon in our society. In 1987, a National Research Council panel estimated that within the United States approximately one million teenagers would become pregnant, resulting in 400,000 abortions, 130,000 miscarriages, and 470,000 live births (Scientific American, 1987). Studies indicate that of those pregnancies resulting in live births 93-97 percent of adolescent mothers will opt to keep their infants (Landerholm, 1984; Levine, Coll, and Oh, 1985). With the high incidence of adolescent motherhood, a concern develops as to the nature of mother-infant interaction among this group of very young mothers as compared to mother-infant interaction among older mothers. Of particular interest is its relationship to the amount and type of linguistic stimulation presented to the infants.

1. MATERNAL INTERACTION AND LANGUAGE DEVELOPMENT

The importance of mother-child linguistic interactions is well documented. For example, Snow (1977) reported that:

> (a) Language acquisition is the result of a process of interaction between mother and child which begins early in infancy . . . . which is crucial to cognitive and emotional development as well as language acquisition.
>
> (b) Language acquisition is guided by and is the result of cognitive development (pp. 31-32).

Ramey, Farran, Campbell, and Finkel (1978) also concluded that, "Maternal language seems to be a critical factor in infant cognitive development, both as to when and how it is used . . ." (p. 421). Other authors note that during interactions with their infants, mothers seem to alter their language and speak what is often termed "motherese" (Kaye, 1980; Newport, Gleitman, and Gleitman, 1977; Phillips, 1973). Motherese has been characterized as having a higher pitch, special patterns of intonation, reduced complexity, restricted lexicon, and limited semantic functions (Kaye, 1980; Owens, 1984; Sachs, 1977). Lastly, Robin and Josse (1984) suggested a relationship exists between what a mother says to her child and the mother's concept of her child.

2. MATERNAL INTERACTION, INFANT GENDER, AND LANGUAGE DEVELOPMENT

Robin and Josse stated, "a very early sex differentiation of the baby is perceptible through significant variation in verbal and non-verbal behaviour of the mother" (p. 168). For example, Brown (1975) found that mothers of boys, three days after giving birth, talked more to their infants than did mothers of girls. The findings of Cherry and Lewis (1976), however, indicated that mothers of girls talked more, asked more questions, more often repeated utterances, and used longer utterances than mothers of boys. Additionally, the mothers of boys were found to use more directives. In summary, Cherry and Lewis (1976) suggested their data supported the position that mothers provide a richer language learning environment for girls than for boys, but as noted above,

this is contradicted by Brown (1975). Thus, a conflict exists in the influence of gender in the linguistic interaction of mature mothers with their infants.

3. ADOLESCENT MATERNAL INTERACTION, INFANT GENDER, AND LANGUAGE DEVELOPMENT

This investigator found no research pertaining directly to the influence of gender in the linguistic interaction of adolescent mothers and their infants. Ruff (1987) found black adolescent mothers acted in a more positive manner with their infants if the infants were female. Ruff (1987) suggested, "this may be due in part to the fact that the adolescent is in the midst of expanding her male-female relationships and her personal struggle may affect her feelings toward her male child" (p. 252). Other authors have noted that there is a heightened awareness of sex differences during adolescence (Muuss, 1968; Williams, 1977).

4. THE PROBLEM

Statement of the Problem

Given the adolescent's heightened awareness of sex differences, it is of particular interest to explore this influence of gender on the adolescent mothers' linguistic interaction with their infants.

The Purpose of the Study

The purpose of this study was to investigate the language used by adolescent mothers and young mothers interacting with their infants

in order to determine if adolescent and young mothers tend to talk differently to their male infants than to their female infants. Type-token ratio, mean length of response, and a modified version of the Maternal Language Classification Scale (Mahoney and Peterson, 1980--see Appendix I) were used to examine maternal language.

5. DEFINITION OF TERMS

Type-token ratio provides an indication of the diversity of vocabulary used. The ratio is obtained by counting the total number of different words and dividing the sum by the total number of words expressed (Miller, 1981).

Mean length of response is a measure of average length of utterance obtained by dividing the number of words by the total number of utterances (Clark, 1982).

6. QUESTION

This descriptive study asks the question: Do adolescent mothers and young mothers tend to talk differently to their male infants than to their female infants?

CHAPTER II

REVIEW OF LITERATURE

1. MATURE MOTHER-INFANT INTERACTION AND LANGUAGE DEVELOPMENT

"Interaction with a mother figure, with the resulting attachment, is essential for health development" (Ainsworth, 1973, p. 77). As mentioned earlier, an area in which mother-infant interaction is critical is language acquisition. Ainsworth (1973) noted, ". . . vocalization [in infants] is a species-characteristic behavioral system . . . most readily elicited by auditory stimuli, especially the female voice" (p. 23).

Ainsworth's research emphasizes the importance of a mother's interaction with her infant. Maternal interaction is necessary for optimal development of the infant.

2. "MOTHERESE"

Mothers' speech research indicates mothers speak differently to their infants and very young children than they do to other listeners (Snow, 1972; Snow, 1977; Snow, Arlman-Rupp, Hassing, Jobse, Joosten, Vorster, 1976; Ringler, 1981). Ferguson (1977) suggested mothers' use of simplified speech with infants may have three functions. First, the structure of baby talk (or motherese) aids in communication. It is ". . . in large part a response to the need for improved

communication when one of the participants has only a limited ability to use language normally" (p. 232). Secondly, motherese aids in the teaching of language. Complexity is gradually restored as the child acquires more language. Finally, socialization may be encouraged through the use of simplified speech to infants (Ferguson, 1977). The simplified speech register used to address infants provides ". . . a means of identifying the social roles which the child must learn as requiring differential behavior in his society" (p. 232).

Research suggests mothers make the following alterations in the complexity, rate, pitch, rhythm, and intonation of their speech when talking to very young children. Specifically, mothers use:

1. shorter sentences (Ringler, 1981)
2. slower rate (Ringler, 1981, Vorster, 1975)
3. higher pitch (Ringler, 1981)
4. a lexicon which is a distinct subset of the available lexicon (Vorster, 1975)
5. concrete terms (Ringler, 1981)
6. fewer plurals and pronouns (Ringler, 1981), and
7. more repetition (Ferguson, 1977).

Snow (1972) found when comparing maternal speech to two-year-olds with maternal speech to ten-year-olds that speech was simpler when directed to the young child. Furthermore, the modifications the mother made in her speech seemed to relate to the reactions of the child. Newport, Gleitman, and Gleitman (1977) found motherese to be highly intelligible with only four of every hundred utterances

being unintelligible contrasted with 9 percent of adult-directed utterances. In Snow's study mothers were asked to engage their child in a series of tasks (e.g. making up and telling the child a story). Task difficulty did not appear to contribute to the mother's use of simplified speech (Snow, 1972). Although difficulty of the task does not seem to have much effect on the mother's speech, the kind of task does seem to (Snow, 1977b). In reviewing mothers' speech research, Snow (1977b) reported that speech appears to be simpler during caretaking activities than during free play. Snow et al. (1976) found maternal speech to be most complex during book reading. Sherrod, Friedman, Crawley, Drake, and Devieux (1977) reported the large majority of maternal utterances to prelinguistic infants are "grammatically complete sentences" (p. 1664). Whether or not the mother can see and hear the child respond seems to affect the complexity of the mother's speech (Snow, 1972). Snow found when a child was audible and visible to the mother less complex speech and shorter utterances were used than when the mother did not see or hear the child's responses. In addition, experienced mothers were only slightly better than nonmothers who were not often in the company of children at predicting modifications in speech style needed by young children. Snow et al. (1976) found the most frequently occurring sentence type used by mothers of the working, lower-middle, and academic-middle classes when talking to their two-year-olds was the declarative. Moerk (1978) stated ". . . mothers are actively and intensively teaching language skills to their children . . . (p. 573). "Language skills are taught in the

home with almost two instances of teaching for every three minutes of interaction . . ." (p. 544). Ringler (1981) emphasized turntaking is one important lesson the mother begins early. The mother uses the baby's action as the baby's conversational turn. For example, if the baby smiles the mother may ask the baby if he/she is happy (Ringler, 1981).

Mothers' use of simplified speech in interacting with their infants, motherese, is a well documented phenomenon. Research indicates the importance of motherese as it relates to socialization and language learning of infants. Research findings also suggest a mother's interaction is guided by the reactions of the infant, as perceived by the mother.

3. SOCIAL CLASS

Tulkin and Kagan (1972) studied 30 middle class mothers (middle class meaning at least one parent was a college graduate and the father was a professional) and 26 working class mothers (working class meaning neither parent had attended college, and at least one parent was a high school drop-out) and their 10-month-old daughters in their homes. Results indicated middle class mothers were more likely to provide their infants with a greater variety of verbal stimuli. No class difference was observed in the frequency with which prohibitions occurred. Kaye (1980) found mothers with more education (college education versus high school) spoke to their babies with longer, more varied utterances. Snow et al. (1976) found that when talking to their two-year-olds imperatives

were used significantly more by working class (primary education) mothers than lower middle (some secondary education) or academic middle (some post-secondary education) class mothers. Significantly more interrogatives were used by lower middle class mothers. A tendency for academic middle class mothers to use more wh-questions than yes-no questions was noted.

Social class appears to have an effect on maternal language. The greatest effects seem to be associated with maternal education level. Research findings indicate that complexity of language increases with the mother's education (longer utterances, more diverse vocabulary, higher-level questions). There is a need for further research on maternal language that distinguishes between the social classes more clearly.

4. AGE OF INFANT

Sherrod et al. (1977) found mean length of maternal utterances to infants was affected by the age of the infant. The findings for mean length of utterance (MLU) were:

four-month infant: MLU of mother = 4.2

six-month infant: MLU of mother = 4.3

eight-month infant: MLU of mother = 3.6

Thus, mothers tended to use simpler language with eight-month infants than with four- or six-month infants. Sherrod et al. suggested this reduction in utterance length occurs because older prelinguistic infants are responsive to simpler utterances more frequently than to complex utterances. In contrast Snow (1977) found mean length

of utterance did not change significantly for two middle class mothers and their first-born daughters during the time the infants were 3-18 months old. It is possible that Snow's study did not use enough subjects to reflect a change in mean length of utterance. On the other hand, Sherrod et al. (1977) studied different mothers and infants for each age level; therefore, it may be that their results represent individual differences in the mothers rather than a change connected with the infants' development. Phillips (1973) found no significant differences in maternal speech of 8-month-old and 18-month-old infants using 10 measures including type-token ratio. Slee (1983) found no developmental change in temporal patterning of mother and infant vocalization during the time the infant was six to eight months old.

Research findings are not in agreement as to the effect of infant age on maternal language. Most findings suggest maternal language directed to the young infant 3 to 18 months does not change. Further research is needed to verify this position.

5. MATERNAL INTERACTION, INFANT GENDER, AND LANGUAGE DEVELOPMENT

Cherry and Lewis (1976) commented, ". . . few studies have directly addressed the question of sex-differentiated patterns in adults' speech to the language learning child . . ." (p. 276). These investigators also found there was a lack of research in this area. Studies which have looked at differences in maternal language addressed to male and female infants report conflicting findings.

Cherry and Lewis (1976) studied 12 upper middle class white mothers and their two year olds (six male, six female). They reported mothers of girls are more likely to ask questions, use repetition, and use longer utterances as measured by mean length of utterance. In studying mothers when their infants were 6, 13, and 26 weeks old, Kaye (1980) found mothers of girls used longer and more varied utterances than those used by mothers of boys. As mentioned before, Cherry and Lewis suggested mothers may provide a richer language learning environment for girls. In discussing their results, Cherry and Lewis stated:

> The significant differences observed are all of the mothers' behavior rather than the children's. This suggests that it is the mothers who are responding differentially to their children as a function of their sex (p. 281).

Similarly, Robin and Josse (1984) reported mothers of males and mothers of females exhibit significant variations in their verbal interaction with their infants. Brown (1975) studied interaction of inner-city black mothers with their newborn infants. In contrast to Cherry and Lewis, Brown (1975) reported mothers talked more to their newborn males. Brown, however, noted mothers talked more to heavier infants, which may have influenced the main effect for gender. In studying middle class mothers with infants ages 8, 18, or 28 months, Phillips (1973) found no significant differences in maternal speech to male versus female infants; although a tendency for mothers of females to use more diverse language was noted. Kaye (1980) found mothers of females were using longer and more

diverse utterances than mothers of males when talking to their infants.

Thus, the influence of gender in the linguistic interaction of mature mothers remains unclear. Contradictory research findings make this an area in need of further study.

6. ADOLESCENT MOTHER-INFANT INTERACTION AND LANGUAGE DEVELOPMENT

In a review of literature on adolescent mothers, Elster, McAnarney, and Lamb (1980) reported adolescents are not knowledgeable in how language develops in infants. Furthermore, they suggested adolescent mothers tend to be more negative and punitive in attitudes they exhibit toward their children.

Elster et al. reported, "Many of the adolescent mothers we see clinically do not seem to appreciate that parenting requires intense, prolonged, sensitive interaction" (p. 498). This is the type of interaction considered critical for the infant's language and cognitive development (Ainsworth, 1973; and Snow, 1977).

Baldwin and Cain (1980) reported, "All analyses show deficits in cognitive development of children (especially male children) born to teenagers . . ." (p. 34). Ruff (1987) stated that her findings suggest a relationship between infant gender and maternal behavior of adolescent mothers. Ruff reported adolescent mothers behave more positively toward their female infants than toward their male infants. The maternal language used by adolescent mothers has not been extensively studied. Studies which have been conducted reveal some, but not extensive differences between the language

used by adolescent mothers interacting with their infants and that of mature mothers. Clark (1982) studied 18 black adolescent mothers who were all living with parents or grandparents and who were regarded "as a positive part of that family" (p. 84). Infants ranged in age from 3 to 19 months. Clark found no significant differences in the language used by 10 adolescent mothers aged 16-18 as compared to eight adolescent mothers aged 14-15. Clark reported these mothers, in interacting with their infants, were using "short, simple sentences, a higher incidence of imperatives and question forms, a higher degree of repetition and a variety of prosodic features. These same features have been attributed to mature mothers . . ." (p. 81). Mean length of utterance used by the adolescent mothers ranged from 1.68-4.80, with the mean for all adolescent mothers being 2.77. In their study of mature mothers and two year olds, Cherry and Lewis (1976) reported a mean length of utterance of 4.40 from mothers of girls and 3.68 from mothers of boys. Snow (1977a) also reported maternal mean length of utterance between 3.6 and 4.4. Clark found adolescent mothers with infants three to six months talked primarily about attributes or feelings with their infants (e.g. "You're smart"). Similarly, Snow (1977a), in her study of mature mothers and their three-month-old infants reported that during interaction , mothers responded to 100 percent of the infant's "burps, yawns, sneezes, coughs, coo-vocalizations, smiles, and laughs" (p. 12). For infants 10-19 months, Clark reported adolescent mothers discussed toys and play. Levine et al. (1985) found no significant differences for adolescent versus nonadolescent mothers in the total

number of verbalizations used during face-to-face interaction between mothers and their eight-month-old infants with no objects present. A significant difference was found, however, between adolescent mothers and nonadolescent mothers when the mothers were engaged in a teaching task. During teaching tasks, adolescent mothers verbalized less to their infants than nonadolescent mothers. In a study of adolescent and nonadolescent mothers with their three-day-old infants, McAnarney, Lawrence, Aten, and Iker (1984) stated, "The relationship between adolescent maternal age and the vocalizations expressed by the mother to her infant should also be explored further" (p. 362).

Research findings suggest adolescents are not optimally prepared to mother. Differences between maternal interaction of adolescent mothers and mature mothers may exist, especially during teaching tasks. Some researchers have indicated that male infants of adolescents may suffer more effects of their mothers' age than female infants. Previous studies have not compared adolescent mothers' speech to female infants with adolescent mothers' speech to male infants.

CHAPTER III

METHODS AND PROCEDURES

The present study is designed to determine whether adolescent mothers and young mothers tend to differ in the type of utterances they use or in the amount of verbalization they use during mother-female and mother-male interaction. Utterance types are determined according to a modified version of the Maternal Language Classification Scale developed by Mahoney and Peterson (1980). Mean length of response and type token ratio were calculated to quantify the mothers' verbalizations. The investigation was conducted with subjects who are being served by the Young Adult Parents Program, Big Brothers/Big Sisters, Young Women's Christian Association programs, and the Department of Human Services. Program managers reported infant stimulation had not been addressed in their programs with the subjects participating in this study. This chapter contains a discussion of the subjects, methods of obtaining data, and methods of analyzing data.

1. SUBJECTS*

Subjects were eight lower class, white mothers and their 3- to 11-month-old infants (mean age five months). Two age groups

*See Appendix II for more detailed information concerning each mother.

of mothers were used. Four of the mothers were adolescents 17 years old and younger (mean age 16). Two of the adolescents had male infants and two had female infants. The other four were young mothers 21 years of age and over (mean age 21). Two of the young mothers had males and two had females. Specific ages of mothers and infants can be seen in Appendix II. Although there was not a large difference in age between the two groups of mothers, there was a noticeable difference in maturity. The mothers who were 21 years old and older appeared more aware of their infant as an individual.

2. DATA COLLECTION

The Mother-Infant Dyad

Each mother-infant dyad was videotaped via remote telemetry in a large playroom at the Pediatric Language Clinic, Department of Audiology and Speech Pathology at The University of Tennessee. Informed consent of videotaping was obtained prior to the experimental session.*

A large blanket was spread out on the floor of the room used for the study in order to encourage the mother to stay within the range of the camera. A mirror, two busyboxes, and some large plastic blocks were set out in the room. After a brief warm-up period to

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*Several studies have been done in which adolescent mothers were informed before the session that their interactions with their infants would be videotaped. Researchers did not report any complications related to this pre-session mention of videotaping (Landerholm. 1984; Levine et al., 1985; McArarney et al., 1984).

allow the mother and child to adjust to the environment, the study was begun.

Instructions Regarding the Three Observational Sessions:

Each mother-infant pair was videotaped for three five-minute sessions. Preceding Observations One and Three each mother was given a basket containing three toys and told: "I would like you and your baby to play with all of the toys in the tub. You may play with them in any order, but please play with all of them."

Observation Session Number One:

The mother and infant were left alone for five minutes. In addition to the toys already set out the mother was given six pink and blue shower curtain rings, a stuffed mouse, and a rotating busybox. This format was used in order to allow the mother to interact with her infant uninfluenced by the direct presence of an observer.

Observation Session Number Two:

The examiner returned to the room and provided the mother with a new set of toys: a stuffed bear, a ringstack, and a rattle. This format was used in order to insure that the mother-infant interaction was occurring. The examiner used the following prompts to direct the mother:

1. See if he/she is interested in the bear. Tell him/her about it.
2. See if you can get him/her interested in the rings. See if he/she will hold one.
3. Tell her about what you're doing.

Observation Session Number Three

Each mother and infant were left alone for five minutes. The mother was given popbeads, a ball, and a rattle in addition to the toys already present. This format was used in order to check context validity.

Post Observation

In order to judge how representative the data collected on each subject may be, the mothers, before leaving the clinic, were asked the following questions developed by Randall (1975):

1. "Did you feel comfortable during the time you were here?"
2. "Do you feel that your baby felt comfortable during the observations?"
3. "Do you think your baby played much like he (she) does at home?"
4. "Was there anything about the room or its furnishing that you might change to make people feel more at ease?"

3. INSTRUMENTATION

Videotapes were made using a Sony black and white camera AVC-1400, a Sony videotape recorder AV3600, a Panasonic monitor WV763, and a Vega Electronics microphone 35A. Maxell tapes were used.

4. ANALYSIS OF DATA

Transcription

The 15-minute videotaped interactions of each mother and child were orthographically transcribed by the examiner and a professional speech-language pathologist. Any differences in the transcriptions were resolved when the tapes were reviewed again to insure accuracy. In order to provide a context for the recorded utterances, a brief commentary pertinent to the behavior of the mother and child followed some utterances (e.g. "child starts to cry").

Mean Length of Response and Type-Token Ratio

Type-token ratio and mean length of response were also calculated individually. Mathematical computations were then recalculated a third time. One hundred percent reliability was obtained.

Categorization of Utterances

The language used by the subjects was further analyzed using a modified version of the verbal stimulation section from the Maternal Language Classification Scale developed by Mahoney and Peterson (1980). As in Mahoney and Peterson, the unit of analysis used was the utterance. An utterance was considered to be any verbalization that was preceded or followed by a distinct pause (one second or greater).

The utterances were categorized under four major groupings (behavior requests, information requests, giving information, social speech) and then broken down further into the more specific categories

shown in Appendix I. Utterances which did not belong to one of the categories and utterances addressed directly to the examiner were coded as "other." Two percent of all utterances coded were coded as other.

Coder Reliability

Two professional speech-language pathologists and the examiner coded the utterances produced by the subjects. To increase reliability, each coder categorized utterances transcribed from two practice tapes. Disagreements on categorization of utterances among the three raters were resolved as follows: If at least two raters agreed on the classification of an utterance, then their classification was used. If all three raters disagreed, the utterance was considered uncodable and discarded. On this basis, two utterances were considered uncodable and discarded. The overall agreement between raters over 1,605 utterances was 99 percent.

CHAPTER IV

RESULTS AND DISCUSSION

1. RESULTS

The verbal interaction used by adolescent and young mothers with their infants was studied using a series of descriptive measures. Mean length of response was used to study the mean number of words per utterance that mothers used with their young infants. Type-token ratio was included in order to examine the diversity of vocabulary used by adolescent and young mothers. Mean length of response and type-token ratio were based on 50 utterances as outlined by Miller (1981). The samples were taken from the middle of each mother's 15-minute sample of verbal interactions. A language classification scale was used to study the frequency with which certain types of utterances occurred during the mother-infant interaction. The complete scale can be found in Appendix I. Results using the scale are presented as the percentage that a category of verbal utterance occurred out of the total number of utterances.

2. DATA

Number of Utterances

The total number of utterances used by each mother during her 15-minute videotaped interaction with her infant is shown in Table 1. The mean number of utterances used by mothers of males was 192.

Table 1. Raw Data Concerning Mothers and Their Infants

Mother	Infant Gender	Infant Age	Maternal Age	Other Children	MLR	TTR	No. of Utter-ances
1	male	3 mos.	15:2	0	3.82	.36	116
2	male	5 mos.	16:8	0	3.0	.28	103
3	male	3 mos.	21:4	1	3.48	.39	298
4	male	11 mos.	21:4	0	3.8	.37	250
5	female	4 mos.	16:4	0	3.1	.34	172
6	female	3 mos.	17:0	0	3.38	.35	195
7	female	8 mos.	21:5	0	3.6	.41	257
8	female	7 mos.	22:9	2	2.94	.38	214

The mean for mothers of females was 209. The four adolescent mothers used fewer utterances than the four young mothers; a mean of 147 utterances by adolescent mothers as opposed to a mean of 255 utterances by young mothers.

Mean Length of Response and Type-Token Ratio

Results obtained for mean length of response and type-token ratio are shown in Table 2. The average mean length of response was 3.52 for adolescent and young mothers of females. When organized according to maternal age, data concerning mean length of response showed the average mean length of response for adolescent mothers of males and females was 3.33. This was smaller than the average mean length of response of 3.46 that was obtained for young mothers of males and females (see Table 3).

Type-token ratio provides an indication of diversity of vocabulary. Mothers of males had obtained a mean type-token ratio of .35. Mothers of females had a mean type-token ratio of .37. When looking at type-token ratio according to maternal age, adolescent mothers had a mean type-token ratio of .33. A larger type-token ratio of .39 was obtained for young mothers.

Utterance Types More Prevalent Among Mothers of Males

Mothers of males used a higher percentage of simple questions, labels, and post-completers (functioning as turn taking) than did mothers of females (see Table 4). For definitions of utterance types see Appendix I: 2a, 3c, 4f). Nineteen percent of the total utterances used by mothers of males were simple yes/no questions;

Table 2. Mean Scores for Mothers of Male and Female Infants

	Mothers of Males	Mothers of Females
Mean length of response	3.52	3.26
Type-token ratio	.35	.37
Mean number of utterances	192	209

Table 3. Mean Length of Response (MLR) and Type-Token Ratio (TTR) as a Function of Maternal Age

Mother	Maternal Age	Infant Age	Infant Gender	MLR	TTR	Total No. of Utterances
1	15:2	3 mos.	male	3.82	.36	116
2	16:4	4 mos.	female	3.1	.34	172
3	16:8	5 mos.	male	3.0	.28	103
4	17:0	3 mos.	female	3.38	.35	195
Mean for adolescents				3.33	.33	147
5	21:4	11 mos.	male	3.8	.37	250
6	21:4	3 mos.	male	3.48	.39	298
7	21:5	8 mos.	female	3.6	.41	257
8	22:9	7 mos.	female	2.49	.38	214
Mean for young mothers				3.46	.39	255

Table 4. Types of Utterances More Prevalent Among Mothers Talking to Their Male Infants (Given as the Percentage Occurring Among Each Group of Mothers)

Utterance Type	Mothers of Males	Mothers of Females
2a. Simple information request	19	11
3c. Giving a label	10	4
4f. Post-completer	4	2

whereas, 11 percent of all utterances used by mothers of females were simple questions. Ten percent of all utterances used by mothers of males compared to 4 percent of all utterances used by mothers of females were labels. Post-completers comprised 4 percent of all utterances used by mothers of males and 2 percent of those used by mothers of females.

Utterance Types More Prevalent Among Mothers of Females

Mothers of females used a higher percentage of utterances that: sought the child's attention, were open-ended questions, requested a label, gave information (both simple and more elaborate), and that were verbal play (see Table 5). For definitions of utterance types see Appendix I: 1d, 2b, 2c, 3a, 3b, and 4a. Seven percent of the utterances used by mothers of females sought the child's attention, as compared to 4 percent of utterances used by mothers of males. Five percent of the utterances used by mothers of females, as compared to 3 percent of utterances used by mothers of males were open-ended questions. Greater differences were found in the area of giving information. Mothers of females gave more simple (10 percent) and elaborate (11 percent) information to their infants than mothers of males (simple--5 percent, elaborate--7 percent). Fifteen percent of the utterances used by mothers of females fell under the category of verbal play. Eight percent of the utterances used by mothers of males were coded verbal play.

Table 5. Types of Utterances More Prevalent Among Mothers Talking to Their Female Infants (Given as Percentage Occurring in Each Group of Mothers)

Utterance Type		Mothers of Males	Mothers of Females
1d.	Seek attention	4	7
2b.	Elaborate request	3	5
2c.	Request label	2	5
3a.	Give simple information	5	10
3b.	Give elaborate information	7	11
4a.	Verbal play	8	15

Utterance Types Which Differed for Adolescent and Young Mothers

Overall, mothers of females used more commands (22 percent) than did mothers of males (20 percent). When mothers are grouped by maternal age, however, adolescent mothers of males had a 9 percent increase over adolescent mothers of females in their use of commands: 26 percent as compared to 17 percent. Young mothers showed the reverse trend. Young mothers of females had a 9 percent increase over young mothers of males in their use of commands: 23 percent as compared to 14 percent.

Post-observation Questions

Table 6 shows the responses each mother gave to the post-observation questions. All the mothers felt their babies were comfortable and played as they normally did during the experimental sessions (questions 2 and 3). The mothers had no suggestions for making the room more comfortable (question 4). The youngest mother (C.A. 15:2) participating in the study reported she had been a "little uncomfortable."

Differences between Observation Sessions

Raw data concerning the verbalizations of all mothers for each five-minute observation session are presented in Table 7.

Observation Session 1--Mother and Infant Alone:
During the first observation session the mothers talked more to their infants than they did during the subsequent sessions. The mean number of utterances of session I was 71 as opposed to a mean

Table 6. Raw Data Concerning Post-observation Questions*

Subject	Question 1	Question 2	Question 3	Question 4
1	no	yes	yes	no
2	yes	yes	yes	no
3	yes	yes	yes	no
4	yes	yes	yes	no
5	yes	yes	yes	no
6	yes	yes	yes	no
7	yes	yes	yes	no
8	yes	yes	yes	no

*Question 1: "Did you feel comfortable during the time you were here?"

Question 2: "Do you feel that your baby felt comfortable during the observations?"

Question 3: "Do you think your baby played much like he (she) does at home?"

Question 4: "Was there anything about the room or its furnishings that you might change to make people feel more at ease?" (from Randall, 1975).

Table 7. Raw Data Concerning Observation Sessions I, II, and III Given in Percentages

Utterance Type	Session I	Session II	Session III
1d. Seek attention	5	7	5
2b. Elaborate request	4	2	7
2e. Request nonverbal action	1	5	7
3c. Give label	10	6	9
4a. Verbal play	16	9	7
Mean number of utterances (all types)	71	63	64

to a mean of 63 in observation session II and a mean of 64 in observation session III.

Observation Session II--Examiner Present:

During the second observation session, mothers sought their infants' attention more frequently, used more labels and less verbal play. Seven percent of the mothers' utterances during this session sought their infants' attention compared to 5 percent of the utterances for sessions I and II. Mothers showed a decreased use of labels--6 percent compared to 10 percent of the utterances for session I and 9 percent for session III.

Nine percent of the utterances used in session II were categorized as verbal play; whereas, 16 percent of the utterances in session I and 17 percent of the utterances in session III fell into this category.

Observation Session III--Mother and Infant Alone:

During the third observation session mothers used more elaborate questions, requested more nonverbal behavior from their infants, and gave their infants more elaborate information.

Seven percent of the utterances used by mothers during the third session were requests for elaborate information. Four percent of the utterances in session I and 2 percent of the utterances in session II were requests for elaborate information. Mothers requested their infants perform nonverbal actions in 7 percent of their utterances during session III. Requests for nonverbal actions were used in 1 percent of utterances occurring during session I and 5 percent of utterances occurring during session II.

3. DISCUSSION

The results of this study suggest adolescent and young mothers tend to talk differently to their male infants than to their female infants. Maternal age also appears to affect the way mothers interact with their infants.

4. MATERNAL INTERACTION AND INFANT GENDER

The findings of this study suggest that mothers with female infants talk more (mean = 209 utterances) to their infants than mothers of male infants (mean = 192). This finding is consistent with results obtained by Cherry and Lewis (1976); however, it is in contradiction to Brown's (1975) finding. Brown's sample differed from the subjects of this study in race and in age of the infants. The infants in Brown's study were extremely young (three days old). Brown also reported her findings may have reflected the baby's weight (males tended to be heavier) rather than gender. These subject variables may have contributed to the different findings.

5. MEAN LENGTH OF RESPONSE (MLR)

The mothers of males participating in this study used longer utterances (MLR = 3.52) than the mothers of females (MLR = 3.26). The mean length of response for mothers of males falls within the range of mean length of response for mothers of males that was reported by Phillips (1973). Phillips reported a mean length of response of 3.56 for mothers of eight-month-old males and a mean

length of response of 3.47 for mothers of 18-month-old males. Phillips further reported that upon comparison of these results to a replication of her study with mothers and their female infants no significant differences were found between the mean length of response for mothers of males and mothers of females. Kaye (1980) and Cherry and Lewis (1976) reported findings that suggest mothers of females use longer utterances than mothers of males. This area may need to be examined further, controlling for social class, infant age, and maternal education, in order to help resolve these contradictory findings.

6. TYPE-TOKEN RATIO

The findings of this study suggest mothers of females tend to use a more diverse vocabulary than mothers of males. Kaye (1980) and Phillips (1973) also noted a tendency of mothers of females to use more diversity of vocabulary. Thus, mothers appear to be stimulating a more diverse vocabulary in their female infants than in their male infants.

7. UTTERANCE TYPES

Mothers of males tended to stimulate their infants with different types of utterances than mothers of females. Cherry and Lewis reported mothers of females used a higher percentage of questions than mothers of males. Cherry and Lewis made no differentiation between types of questions. The findings of this study indicated mothers of males tend to use a higher percentage of yes-no questions than mothers of females. Mothers of females had a higher percentage

of open-ended questions and requests for labels than mothers of males. The mothers of females participating in this study engaged their infants in more vocal play than mothers of males. Robin and Josse (1984) referred to this type of vocalization as a "pressing request." In a pressing request, the mother is producing sounds she hopes the infant will imitate. The sounds being encouraged are ones the mother believes the infant can produce; hence the mother is "pressing" the infant to vocalize. By frequently encouraging production of a sound in the infant's repertoire, mothers appear to be placing more conversational demands on their infants.

When asking questions known to be beyond the infant's capability to answer, mothers of females are frequently asked open-ended questions; whereas, mothers of males are more frequently asked simple yes-no questions. In this type of questioning, mothers of females may have been laying the groundwork for greater cognitive stimulation of their female infants, especially if this tendency were continued as the child grew older.

Mothers of females also tended to seek their infants' attention before talking to them further. Perhaps having the infant's attention would increase the likelihood of eliciting verbalization from the infant and of teaching the infant his or her importance in a verbal exchange. Thus, another area in which mothers of females seem to place more demands on their infants is in attending.

Mothers of females tended to give their infants more simple and more elaborate information than mothers of males. Mothers of females may have generated more elaborate information by providing

their infants with the answers to the open-ended questions they posed.

Simple information appeared most often in the form of affirmation ("yeah"). The greater use of this type of utterance by mothers of females lends support to Ruff's (1987) finding that adolescent mothers of females acted in a more positive manner than adolescent mothers of males.

Mothers of males used post-completers (Hmm?, Huh?) more frequently than mothers of females. Post-completers usually followed questions asked by the mothers. Mothers of females were more likely to follow their questions with verbal play or informative statements answering the question than with post-completers.

8. ADOLESCENT MOTHERS VERSUS YOUNG MOTHERS

Adolescent mothers of females verbalized more to their infants than adolescent mothers of males. Adolescent mothers of both sexes verbalized less than young mothers of either sex. This finding lends support to Levine et al.'s (1980) finding that adolescent mothers verbalized less to their infants during teaching tasks. The design of this study tended to encourage mothers to teach their infants how each set of toys could be manipulated. This finding also supports the assertion of Elster et al. (1980) that adolescent mothers do not appreciate the need for prolonged and intense interaction with their infants. This study found males of adolescent mothers to be receiving the least verbal stimulation. This lack of verbal stimulation may contribute to the cognitive deficits of

males born to adolescent mothers reported by Baldwin and Cain (1980).

While adolescent and young mothers were found to use the same percentage of commands, the distribution between mothers of females and mothers of males differed when the data were examined according to maternal age. These differences may reflect the need for categorizing commands into more than one category. Mahoney and Peterson (1980) divided commands into those that are said with strong emphasis versus those which are more suggestive in tone.

9. DIFFERENCES BETWEEN OBSERVATION SESSIONS

For observation sessions I and III the mothers were left alone with their infants. These two observation sessions did not produce the same results. Mothers talked more and used simpler language during observation session I than during either observation session II or III.

A possible explanation for these differences is that session I still reflected a time during which the mother and infant were adjusting to their new surroundings. Although a warm-up period was allowed for, it may not have been long enough to allow the mother and child to full adjust to the setting. Many of the infants had been asleep and were still in the process of waking up. Session I may reflect the mothers' attempt to calm their infants and help them adjust to the new surroundings. The mothers themselves may have been somewhat preoccupied by the new environment. The increase in the use of more elaborate types of language during session III

may reflect the adjustment of the mother and infant to the environment.

The presence of the examiner in the room during session II did appear to influence the type of verbal interaction used by the mothers. Mothers sought their infants' attention more frequently and did not engage in verbal play as often with the examiner present.

10. LIMITATIONS OF THE STUDY

Sample size is an obvious limitation of this study. Due to the small sample size statistical tests could not be performed; therefore, the results can only be viewed as tendencies that may warrant further study.

Difficulty in locating subjects prevented the use of a larger sample. Many of the agencies working with the population needed for this study declined to get involved. Many agencies stated they did not have the time to help the examiner in locating subjects. The local health department was unable to participate on the basis of departmental policy that prohibited their involvement in research projects.

An attempt was made to use mothers over 25 years of age rather than young mothers. The older mothers of this social class that were contacted were not willing to participate in the study. One mother stated she did not wish to be videotaped. Others did not give reasons. Attempts to advertise for the needed population were made to no avail.

Since the age difference between the adolescent mothers and young mothers is not so great, comparisons based on maternal age of the adolescents could not be as closely examined.

11. IMPLICATIONS FOR FURTHER STUDY

The following areas are suggested for further study:

1. A replication of this study involving a larger sample size of adolescent mothers and mature mothers (25 years and over).
2. A similar study comparing middle class adolescent and mature mothers.

CHAPTER V

SUMMARY AND CONCLUSIONS

1. SUMMARY

The purpose of this study was to determine whether or not differences exist in the length or types of utterances used by adolescent and young mothers during mother-male infant interaction and mother-female infant interaction. Each mother was videotaped for 15 minutes while interacting with her infant. Maternal language was examined using mean length of response, type-token ratio, and a modified version of The Maternal Language Classification Scale (Mahoney and Peterson, 1980).

2. CONCLUSIONS

The present investigation suggests mothers of males do tend to talk differently to their infants than mothers of females talk to their infants. Although a causal inference cannot be made, the findings of this study lend support to Cherry and Lewis' (1978) position that mothers of females provide a richer language learning environment than mothers of males. In comparing adolescent mothers to young mothers the tendency for adolescent mothers to verbalize far less was noted. This finding may reflect an observation made by Elster et al. (1980) that adolescent mothers may not appreciate

that parenting requires prolonged, intense, and sensitive interaction.

REFERENCES

REFERENCES

Ainsworth, M. (1973). The development of infant-mother attachment. In Caldwell, B. M., & Riccuiti, H. N. Review of Child Development Research, 3, Chicago: University of Chicago Press, 1-85.

Baldwin, W., & Cain, V. S. (1980). The children of teenage parents. Family Planning Perspectives, 12, 34-44.

Brown, J. V., Bakeman, R., Snyder, P., Fredrickson, W. T., Morgan, S. T., & Helper, R. (1975). Interactions of black inner-city mothers with their newborn infants. Child Development, 46, 677-686.

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

Clark, B. S. (1982). Verbal communication of adolescent mothers to their infants. Doctoral Dissertation, George Peabody College for Teachers of Vanderbilt University.

Elster, A. B., McAnarney, E. R., & Lamb, M. E. (1983). Parental behavior of adolescent mothers. Pediatrics, 71, 494-503.

Ferguson, C. A. (1977). Baby talk as a simplified register. In Snow, C., & Ferguson, C. (Eds.). Talking to Children. New York: Cambridge University Press.

Kaye, K. (1980). Why we don't talk "baby talk" to babies. Journal of Child Language, 7, 489-507.

Landerholm, E. (1984). Teenage parenting skills. Early Child Development and Care, 13, 351-364.

Levine, L., Coll, C. T. G., & Oh, W. (1985). Determinants of mother-infant interaction in adolescent mothers. Pediatrics, 75, 23-29.

McAnarney, E. R., Lawrence, R. A., Aten, M. J., Iker, H. P. (1984). Adolescent mothers and their infants. Pediatrics, 73, 358-362.

Mahoney, G., & Peterson, G. (1980). Maternal language classification scale. ERIC Document, 184-718, 1-17.

Miller, J. F. (1981). Assessing Language Production in Children: Experimental Procedures. Baltimore: University Park Press.

Moerk, E. L. (1978). Determiners and consequences of verbal behaviors of young children and mothers. Developmental Psychology, 14, 537-545.

Muuss, R. E. (1968). Theories of Adolescence (2nd Ed.). New York: Random House.

Newport, E. L., Gleitman, H., & Gleitman, L. R. (1977). Mother, I'd rather do it myself: some effects and non-effects of maternal style. In Snow, C. E., & Ferguson, C. A. Talking to Children. New York: Cambridge University Press, 109-149.

Owens, R. E. (1984). Language Development: An Introduction. Columbus: Charles E. Merrill Publishing Company.

Pavenstedt, E. (1965). A comparison of the childbearing environment of upper-lower and very lower-lower class families. American Journal of Orthopsychiatry, 35, 89-98.

Phillips, J. R. (1973). Young children: Age and sex comparisons. Child Development, 44, 182-185.

Ramey, C. T., Farran, D. C., Campbell, F. A., & Finkelstein. N. W. (1978). Observations of mother-infant interactions: Implications for development. In Minifie, F. D., & Lloyd, L. L. Communicative and Cognitive Abilities--Early Behavioral Assessment. Baltimore: University Park Press.

Randall, T. M. (1975). An analysis of observer influence on sex and social class differences in mother-infant interaction. ERIC Document 114, 204.

Robin, M., & Josse, D. (1984). Maternal language and the development of successive infant identities. Early Child Development and Care, 17, 167-176.

Ringler, N. M. (1981). The development of language and how adults talk to children. Infant Mental Health Journal, 2, 71-83.

Ruff, C. C. (1987). How well do adolescents mother? The American Journal of Maternal/Child Nursing, 12, 249-253.

Sachs, J. (1977). The adaptive significance of linguistic input to prelinguistic infants. In Snow, C. E., & Ferguson, C. A. Talking to Children. New York: Cambridge University Press, 51-61.

Science and the citizen. (1987). Scientific American, 256, 85.

Sherrod, K. B. Friedman, S., Crawley, S., Drake, D., & Devieux, J. (1977). Maternal language to prelinguistic infants: Syntactic aspects. Child Development, 48, 1662-1665.

Slee, P. T. (1983). Mother-infant vocal interaction as a function of emotional expression. Early Child Development and Care, 11, 33-44.

Snow, C. E. (1972). Mothers' speech to children learning language. in Bloom, L. (Ed.), Readings in Language Development. New York: John Wiley & Sons.

Snow, C. E. (1977a). The development of conversation between mothers and babies. Journal of Child Language, 4, 1-22.

Snow, C. E. (1977b). Mothers' speech research from input to interaction. In Snow, C., & Ferguson, C. Talking to Children. New York: Cambridge University Press, 31-49.

Snow, C. E., Arlman-Rupp, A., Hassing, Y., Jobse, J., Joosten, J., and Vorster, J. (1976). Mothers' speech in three social classes. Journal of Psycholinguistic Research, 5, 1-20.

Tulkin, S. R., & Kagan, J. (1972). Mother-child interaction in the first year of life. Child Development, 43, 31-41.

Vorster, J. (1975). Mommy linguist: the case for motherese. Linqua, 37, 281-312.

Williams, J. H. (1977). Psychology of Women: Behavior in a Biosocial Context. New York: W.W. Norton & Company, Inc.

APPENDICES

APPENDIX I

DEFINITIONS OF UTTERANCE TYPES
(Adapted from Maternal Language Classification Scale
Mahoney and Peterson, 1980)

Verbal Stimulation--Language addressed toward a child in which there is no apparent intentional relationship between the form and content of the maternal utterance and the form and content of a preceding child utterance.

1. Behavior Requests--Utterances which influence a child to perform or not to perform certain physical acts by the use of imperative, interrogative, or declarative statements. Behavior requests focus on the activity of the child rather than what the child thinks or feels.

   1a. Command--A direct request for child to perform a certain act. Commands are generally in the imperative mood.

   e.g., 1. Do something.
   2. Put the ring on the peg.
   3. Give me your shoes.
   4. Listen.

   1b. Prohibition--A direct request for a child not to perform a a certain act. Prohibitions are in the imperative mood and are demanding rather than suggestive. A prohibition is prohibitive rather than punitive.

   e.g., 1. Don't do that.

2. You'd better not hit me.

3. No, no, no.

1c. Prompt--An indirect request for the child to perform or not to perform a certain act. A prompt can only be an interrogative or declarative statement. The tone is one of suggestion rather than demand.

e.g., 1. You could put the ball in the corner, couldn't you?

2. Can you do what I'm doing?

3. Good boys don't do that. (Prohibitive, not punative.)

± 4. Why don't you do that?

1d. Seek Attention--A request for the child to give his attention to the speaker or an object. Seek attention is often employed as a perparation for the mother to interact verbally with the child.

2. Information Request--A request for the child to process cognitive, linguistic, or personal-social information. Information requests are most often interrogative, although some categories include declarative and imperative forms.

2a. Seek Simple Information--Information requests in which the required response is a simple affirmation or negation. Utterances which require an imitative response rather than a simple "yes" or "no" should be coded as elicit information.

e.g., 1. Did the truck fall down?

2. Is the book blue?

3. Does the doggie go "bow wow"?

2b. Seek Elaborate Information--Request information from the child in which the child must respond with an utterance other than "yes" or "no". Elaborate questions are of the form "who, when, why, where, how." "What" questions are included when they do not require that the child merely provides a label of a specific object, attribute, person, or event.

e.g., 1. What do you want?

2. How many toes do you have?

3. What does a dog sound like?

2c. Request Labels--Request the name of a specific person, object, attribute, or event which is within the child's perceptual range. The mother may or may not point to the object.

e.g., 1. Who is that? (while pointing to a picture)

2. What is that?

3. What color is that?

2d. Elicit Imitation--An explicit request for the child to repeat a sound, word, or phrase. Utterances which consist of the sound, word, or phrase without the explicit request should not be coded in this category.

e.g., 1. Can you say "doggie"?

2. Johnny, say "kitty".

2e. Seek Nonverbal Response--A request for the child to either denote or depict some information by the use of gestures.

e.g., 1. Where is your nose?

2. How does a dog look mad?

3. Show mommy where the pig is (while looking at a picture).

3. Give Information--Utterance is intended to provide cognitive or personal-social information to the child without any explicit or implicit demand that the child respond verbally to the utterance.

3a. Simple information--Utterance provides cognitive or personal-social information by simple affirmation or negation. Simple affirmations or negations which have a directing value rather than a praising or punitive value are also included in this category. Examination of intonation and context of the utterance is essential in this instance.

e.g., 1. Yes.

2. That's right (when directive, <u>not</u> praise is the intent).

3. Good (when directive, <u>not</u> praise is the intent).

3b. Elaborate Information--Utterance provides the child with information concerning the cognitive or personal-social dimensions of persons, objects, attributes, or events. Elaborate information is intended to be a general category which includes most all utterances whose primary function is to provide cognitive or personal-social information.

e.g., 1. Snoopy sleeps on top of his house

2. You are going to break it if you hit it too hard.

3. The ring is round.

4. I don't like this book.

3c. Label/Deixis--The utterance provides the child with the name of a specific person, object, attribute, or event in the child's perceptual field and may be accompanied by a pointing gesture.

e.g., 1. That's a ball.

2. This is a horsie.

3. Doggie.

4. That's a ball.

5. There's a ball.

4. Social Speech--Utterances which pertain to emotions, feelings, or social relationships, rather than to objects, events, specific attributes, or personal-social rules.

4a. Verbal Play--Stereotyped, repeated, or onomatopoetic sounds, words, or phrases. Songs and sounds for activities are included in this category. Emphasis is on the social value rather than the informational value of the utterances.

e.g., 1. Zoom.

2. Whoosh.

3. Meow.

4. Peek-a-boo!

4b. Feeling--Utterances which express empathy, mood, or interpersonal attitudes of the mother or child. Feelings generally give or request information dealing with affect (i.e., emotions) rather than with the child's thoughts or perceptions.

e.g., 1. I do love you.

2. Do you love me?

3. I feel good today.

4. Are you bored?

4c. Motivate--Utterance which elicits or maintains interest or positive affect. Motivate may create a positive atmosphere by introducing joy and happiness. Putting the child in a positive mood by teasing or tickling, informing the child that what he is doing is interesting or exciting, or expressing interest or moral support for what the child is doing should be coded as motivate. Note that it is important to examine the intonation and context of the utterance when considering this category.

e.g., 1. You can do it.

2. This is fun!

3. What a beautiful doll!! (excitedly).

4. Come on. (In the context of motivating the child to do something.)

4d. Praise--Utterance is intended to inform the child that what she is doing or has done is commendable. Praise always has

the tone of positive affect. The emphasis of praise on the child rather than the act.

e.g., 1. Good girl!!!

2. Look what Sally did!! (in the context of praise rather than directing attention).

3. Good! (praise value rather than directive value).

4e. Punish--Utterance is intended to tell the child that what he is doing or has done is reprehensible. Punishment usually has the tone of negative affect. The emphasis of punishment is on the child rather than the act. Note that utterances in this category are <u>not</u> imperatives.

e.g., 1. Bad boy. (A social consequence of an undesirable act.)

2. I am going to spank you for that.

4f. Post-completer--A minimal encourager used by the mother to mark the infant's turn.

e.g., 1. Huh?

2. Yeah?

3. Hmm?

4g. Role Play--An utterance in which the mother indicates she is taking the infant's conversational turn and expressing what she believes the infant feels.

e.g., 1. Say, I haven't heard that before.

2. Say, I like looking at this.

APPENDIX II

SUBJECTS: BIOGRAPHICAL INFORMATION

Subjects resided in the following East Tennessee cities: Knoxville--one subject, Oak Ridge--three subjects, Clinton--two subjects, Lenoir City--two subjects. The educational level of the mothers ranged from completion of the seventh grade to completion of the twelfth grade (mean for adolescent mothers 9.25, mean for young mothers, 10.75--overall mean tenth grade). Three of the adolescent mothers were single. One of the adolescent mothers was married, but her husband had recently left her and the baby. Three of the young mothers were married and one was divorced.

Pavenstedt (1965) made a distinction between upper-lower and lower-lower class families. Although Pavenstedt's study involved East Coast families living in large urban areas, the subjects of this study were southern families living in small urban areas. Pavenstedt's descriptions can still be applied to make a upper-lower class and lower-lower distinction.

The subjects of this study can be classified into an upper-lower class grouping. Housing was in general poor, but clean. The environment seldom contained any books, but toys were in view. All mothers had some direction they intended to pursue in order to better their future. The mothers were proud of their infants. They were quick to point out new "tricks" their child could do.

The mothers of this study can be separated from the lower-lower class in the cleanliness of their homes. Pavenstedt remarked of the lower-lower class ". . . bits of food and dirty dishes were found anywhere and the smell of urine often pervaded . . ." Pavenstedt also remarked lower-lower class mothers seldom change their infants. All subjects of this study brought a diaper bag with them and a large number of them changed their infant during the time they were with the examiner. Pavenstedt wrote of the "intensity of distrust and suspicion" of the lower-lower class. The subjects of this study were asked to allow a stranger to transport them and their infants about 25 miles, in most cases, to the university clinic where the study was conducted. Their participation, therefore, involved a trust of middle-class society that would not have characterized the lower-lower class. The examiner had seven mothers 21 years of age and older who, after initially agreeing to participate, were not at their homes when the examiner arrived to pick them up. It is possible that these were lower-lower class mothers who, unable to say no over the phone, found their own way to avoid participation.

Date seen: 10-30-87
Time: 1:30
Mother's birthdate: 8-25-72 C.A. 15:2
Baby's birthdate: 5-10-87 C.A. 3 mos. 13 days
Infant's gender: male
Mother's education: 10th grade
Other children: 0

Residence

This adolescent mother was in the foster care of a divorced aunt. They lived in a small low-income house with the adolescent's infant son and the aunt's school-age son. The house was in need of repair both inside and out. Some attempts at decorating had been made. Upon the examiner's arrival the infant was seated in a baby swing with a string of toys in his view.

Present Status

The mother was single and had never married. She had gone to court in order to receive foster care placement with her infant. Her aunt was keeping her son while she attended high school during the day. She received AFDC (aid to families with dependent children).

Behavior in Transit

The mother and infant were ready to go upon the examiner's arrival. The mother spoke little during the trip other than to ask the examiner to stop at a store so she could buy cigarettes. She held a blanket up to shield her infant's face from the sun during much of the half hour trip. Upon returning to home, she told the examiner that she, "had a good time."

Intelligence

As determined through our interactions, it would appear that maternal intelligence was in the normal range.

2
Date seen: 11-1-87
Time: 1:00
Mother's birthdate: 4-6-71 C.A. 16:8
Baby's birthdate: 5-10-87 C.A. 5 mos. 21 days
Infant's gender: male
Mother's education: 7th grade
Other children: 0

Residence

This adolescent mother and her infant son live with the mother's parents, ten-year-old sister, and an uncle. The house was small for six people, but appeared to be in fairly good order from the outside.

Present Status

The mother was single and had never been married. She had successfully completed the 7th grade and failed the 8th grade. Pregnancy had preempted her second try at the 8th grade. She had worked for eight months at a nursing home until har baby was born. At the time of her participation in this study she was involved in the Young Adult Parent Program and working on a G.E.D.

Behavior in Transit

The mother spoke little; but she did inform the examiner that this was only her second trip to Knoxville. Her first trip had been the month before to visit her infant who was hospitalized with pneumonia.

Intelligence

As determined through our interactions, it would appear that maternal intelligence was in the normal range.

3
Date seen: 11-20-87
Time: 1:00
Mother's birthdate: 7-27-71 C.A. 16:4
Baby's birthdate: 7-6-87 C.A. 4 mos. 14 days
Infant's gender: female
Mother's education: 10th grade
Other children: 0

Residence

This adolescent mother and her infant were residing in a one room apartment. The apartment was cramped, but fairly clean. Until a few days prior to her participation in the study, the apartment had also been shared by the baby's father who was married to the adolescent mother.

Present Status

Her husband having just left, this mother was in a visible state of crisis. She had no job and was receiving no aid, since her husband had worked. The mother had completed the 11th grade. She was preparing to take the infant for a two week visit with a married sister in Alabama.

Behavior in Transit

The mother relayed her situation to the examiner.

Intelligence

As determined through our interactions, it would appear that maternal intelligence was in the normal range.

4
Date seen: 11-27-87
Time: 1:00
Mother's birthdate: 6-27-66 C.A. 21:5
Baby's birthdate: 3-18-87 C.A. 8 mos. 10 days
Infant's gender: female
Mother's education: 9th grade
Other children: 0

Residence

This young mother lived with her husband and infant in a small well-kept house. The living room had been decorated for Christmas.

Present Status

The mother was a housewife. She had completed the 9th grade. Her husband did construction work. She reported winters were always hard and necessitated going on foodstamps. She was also receiving financial aid through WIC (Women, Infants, Children). This mother was the only subject to question the examiner about why "low-income" mothers were being used. She asserted that she loved her baby as much as any mother.

Behavior in Transit

The mother chatted freely with the examiner and with her infant. She discussed the plans she and her husband had to better their financial condition.

Intelligence

As determined through our interactions, it would appear that maternal intelligence was in the normal range.

5
Date seen: 12-7-87
Time: 10:00
Mother's birthdate: 8-19-66 C.A. 21:4
Baby's birthdate: 9-18-87 C.A. 3 mos. 18 days
Infant's gender: male
Mother's education: 12th grade
Other children: male 1-11-86 C.A. 1:10

Residence and Present Status:

The examiner met this subject and infant at the church where the Young Adult Parent Program was held. The examiner, therefore, did not visit the subject's home. The mother lived with her husband and two sons. She had a 12th grade education. Her husband had recently been laid off from the factory job. He was actively looking for another job.

Behavior in Transit

The mother was gregarious, talking both with her infant and the examiner.

Intelligence

As determined through our interactions, it would appear that maternal intelligence was in the normal range.

6
Date seen: 12-15-87
Time: 1:00
Mother's birthdate: 8-19-66 C.A. 21:4
Baby's birthdate: 1-14-87 C.A. 11 mos.
Infant's gender: male
Mother's education: 10th grade
Other children: 0

Residence

This young mother lived with her husband and son in a small house owned by the husband's parents. The house was badly in need of repair. The inside was rundown, but clean.

Present Status

Both parents were unemployed. The infant's father had suffered a knee injury and been unable to work for some time. The mother had a 10th grade education. She was seven months pregnant with her second child at the time she participated in the study.

Behavior in Transit

The mother was gregarious. She expressed to the examiner her concern for her family's financial situation and the plans she and her husband had to better the situation.

Intelligence

As determined through our interactions, it would appear that maternal intelligence was in the normal range.

7
Date seen: 12-16-87
Time: 1:00
Mother's birthdate: 11-25-70 C.A. 17
Baby's birthdate: 9-1-87 C.A. 3 mos. 15 days
Infant's gender: female
Mother's education: 10th grade
Other children: 0

Residence

This adolescent mother and her infant were residing with the adolescent's mother, brother, and new step-father. They were living in the step-father's home. The house was well-kept.

Present Status

The adolescent had completed the 10th grade and was involved in the Young Adult Parent Program. She was pursuing her G.E.D. and working part-time at Wendy's, a job she acquired with the help of the program leader. She was in the process of applying for government aid.

Behavior in Transit

The mother chatted freely with the examiner, but ignored her infant. The mother revealed friction existed between her and her mother. She had been forbidden to see the infant's father, but she was secretly continuing to do so.

Intelligence

As determined through our interactions, it would appear that maternal intelligence was in the normal range.

8
Date seen: 1-3-88
Time: 2:00
Mother's birthdate: 3-25-65 C.A. 22:9
Baby's birthdate: 5-26-87 C.A. 7 mos. 7 days
Infant's gender: female
Mother's education: 12th grade (GED)
Other children: male 3:30-84 C.A. 3:9
male 3-4-85 C.A. 2:10

Residence

This young mother and her three children were residing temporarily with her parents. The house was in good condition and well-kept, but it was apparent that the children's grandmother was in charge.

Present Status

The mother had returned to her parents' home during her pregnancy with her third child. She was subsequently divorced from the children's father. The mother has completed her G.E.D. She is employed part-time at Burger King and receives AFDC. Her sons are ages 2 and 3 years.

Behavior in Transit

The mother was talkative and amused her infant during the trip.

Intelligence

As determined through our interactions, it would appear that maternal intelligence was in the normal range.

VITA

Ellen Smith was born in Knoxville, Tennessee on February 17, 1964. She graduated from Oak Ridge High School in 1982. She attended Centre College in Danville, Kentucky and Albert-Ludwigs Universitat in Freiburg, West Germany as an undergraduate. She completed a Bachelor of Arts in German at Centre College in 1986.

She entered the graduate program in speech-language pathology at The University of Tennessee-Knoxville in April 1986. In March 1988, she completed the requirements for a Master of Arts in speech-language pathology.