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THE RELATIONSHIP BETWEEN MOTHERS' PRONOMINAL MODIFICATIONS
AND CHILDREN'S ACQUISITION OF PRONOMINAL REFERENCE

by

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Abstract

This study investigated the pronominal modifications used by mothers when addressing their young children and their children's acquisition of pronominal reference. The questions examined were: (a) how extensively do mothers replace conventional English pronouns with nouns or unconventional pronouns when speaking to their children? (b) are there individual differences in the degree to which conventional pronouns are avoided? (c) what are the reference systems used by young children? and (d) do the systems of reference used by mothers influence their children's language in any way? Speech samples from eight children and their mothers were collected in two one-half hour sessions, separated by an interval of from three and one-half to seven months. At the time of the first session, four children were in Stage I (Brown 1973) and four were in early Stage II. By the second session the first four children had progressed to Stage II and the others to Stage III. Each session contained three situations, each approximately ten minutes in length. In both sessions ten minutes was spent dressing the child and ten minutes reading a book. In addition, the first session contained a period of free-play and the second a discussion of a set of photographs of the mother and child. Three types of analyses were performed. The first examined the mothers' use and avoidance of personal pronouns at Session 1, and the children's systems of nominal and pronominal reference at Session 2. The second was a correlational analysis between the measures of maternal speech at Session 1 and child speech at Session 2. Finally, differences between the individual reference systems of the mothers and children were examined. The results showed that two types of substitution processes replacing conventional pronouns could

be found in the mothers' speech. The most common process, called 'objectification', was the use of proper nouns or kinship terms for first or second person pronouns. First person plural pronouns or third person pronouns were also used as replacements for first or second person pronouns, although less frequently. When using conventional pronouns, mothers used the second person more often than the first, and subjective case pronouns more often than objectives or possessives. The use of second person reference decreased as the age of the child increased. Children at Stage II used nominal and pronominal reference to approximately the same extent, but by the time Stage III was reached pronominal reference was used almost five times more often than nominal reference. Children were sensitive to the reference systems used by their mothers. Their use of individual pronouns changed over time as their mothers' use of the same forms changed. It was also found that children's use of nominal reference was positively related to the mothers' use of objectification at an earlier time. The more objectifications used by a mother, the slower her child would be to encode referents in a pronominal mode only. Two explanations of the interrelatedness of maternal and child reference systems are possible. Following the explanation given by Newport, Gleitman and Gleitman (1977), the maternal speech may have had an effect on children's acquisition of personal reference because the latter is a language-specific aspect of speech. Alternatively, it may be that children are sensitive to only those aspects of the input language, such as mother's reference systems, which vary from speaker to speaker.

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Chapter 1. Introduction

In recent years there have been numerous investigations into the characteristics of the language used by mothers to address young children. Studies have shown that speech to young children is simpler than conversational speech between adults, as measured by MLU (cf. Drach 1969, Fraser and Roberts 1975, Phillips 1973, Snow 1972), type-token ratio (Drach 1969, Broen 1972, Phillips 1973, Remick 1976), the number of complex sentences used (Pfuderer 1969, Snow 1972) and semantic complexity (Cross 1978, Snow 1977). Also, a special lexicon of baby talk words, generally derived from adult lexical items, exists in most languages (Ferguson 1964). Lastly, the prosodic characteristics of child-directed speech differ from those used when addressing adults (Garnica 1977, Remick 1976). The above studies, and many others like them, have demonstrated that the language children hear is not nearly as 'meagre and degenerate' (Chomsky 1968, p. 88) or 'fragmentary' (Chomsky 1977, p. 7) as has been suggested.

While the above studies suggest a speech register shared by all speakers, several fairly recent studies have reported stylistic differences of individual mothers. In the first important study of this kind, Nelson (1973) identified two types, which she calls referential and expressive. This classification is based upon variation within the lexical and grammatical parameters of speech. Referential mothers talk mainly about objects in the child's environment, ask questions a great deal of the time, and are relatively concise in what they have to say. Expressive mothers, on the other hand, spend much more time commenting on the child's behaviour and tend to be more discursive. Children may be classified as referential or expressive, although mothers and their children do not

necessarily have similar styles. Lieven (1978a, 1978b) found a marked difference in the turn-taking abilities of three mother-child dyads. The members of one dyad responded more often to each other's questions and commands and were more likely to respond appropriately to a preceding utterance than those of the other two dyads. A study examining voice onset time has found evidence of phonological variation in mothers' speech. Baran, Zlatin Laufer and Daniloﬀ (1977) investigated the adult and child-directed speech of three mothers of children who were not yet producing meaningful speech. One mother had a slower rate of speech and showed a significant difference in the number of measurable stop consonants produced in the two contexts than the other two mothers. The authors suggested that this particular mother was encoding voice onset time more often in her child-directed speech, i.e. was being more careful in her production of stop consonants.

Given that mothers adjust their speech, and that they may vary in the extent to which they do it, most recent research has been concerned with the reasons for these changes, and the effects on the child. Ferguson defines three main types of baby talk processes; simplifying, clarifying and expressive. Simplifying processes are those which substitute simple unmarked sounds for more difficult ones, harmonize vowels, reduce inflections, and replace personal pronouns by kinship terms or proper nouns. These processes are not necessarily universal, since they depend both upon the structure of the target language and the baby talk system developed by a particular speech community. The second set of processes are those which clarify particular aspects of language for the child. Clarifying processes include repetitions, exaggerations of intonation contours, and slow, clearly

enunciated speech. The third type, the expressive and identifying processes, are the most commonly recognized components of baby talk. These are processes such as the use of hypocoristic and diminutive affixes, euphonisms, higher pitch and 'softening' of particular speech sounds, which may all be adaptations to the child's way of speaking.

Reviewing Ferguson's article, Brown (1977) claims that simplification and clarification processes both result from a desire to communicate with the child and to be understood, and that both may be combined under a more general communication-clarification function of baby talk. A consequence of these intentions may be that some aspects of language are taught to the child, although Brown stresses that language teaching is not a conscious, primary intention of mothers.

Specific research has investigated the determinants in the child's speech which lead to maternal speech modifications. Cross (1975, 1977) studied the verbal interactions of 16 mothers and their second-born children in hour long play sessions, examining both the child's productive and receptive abilities. Correlations between the maternal and child variables showed that mothers were more sensitive to the children's receptive abilities than to age or productive ability. Mothers' MLU's were maintained at a level slightly above their children's but other syntactic variables did not seem to be consistently related. Van Kleeck and Carpenter (1979) on the other hand, found that while children's receptive abilities may have had some influence on mothers' speech modifications, this certainly was not the major factor involved.

Another issue that can be raised concerns the effects of mothers' speech on the child's linguistic development. This question has been examined in a number of fairly recent longitudinal studies. Ringler (1978) examined relationships between the speech of ten mothers when their children were approximately two years of age, and the children's speech at age five. She found that the mothers who used the largest number of words per proposition when their children were two years of age had children with larger receptive vocabularies and who produced more phrases containing four critical items at five years. The use of adjectives was positively correlated with expressive ability at five, while the number of content words addressed to the child was negatively correlated with this same variable. The proportion of imperatives used to the child at two was negatively correlated to the child's MLU at age five. Although cause and effect could not be assigned, it was apparent that even over a three year span, some consistent relationships could be found between a mother's speech and her child's.

The most important study of the relationships between maternal speech and the linguistic abilities of young children was performed by Newport, Gleitman and Gleitman (1977). Speech samples from 15 mothers and their daughters were collected at two time periods, six months apart. At the time of the first session the children were divided into three age groups: 12-15 month olds, 18-21 month olds and 24-27 month olds. The children's speech was analyzed for syntactic complexity and total vocabulary size for both sessions. A growth rate measure was then computed by finding the difference between these scores at the two sessions. A growth rate measure was then computed by finding the difference between these scores at

the two sessions. Correlations were calculated, relating stylistic and syntactic aspects of the mothers' speech to the child's growth rate, age and linguistic ability, after partialling out the child's age and linguistic ability at the initial session. The findings suggest that certain language specific aspects of children's speech, such as the number of inflections used per noun phrase and the acquisition of auxiliaries and modals, were influenced by the mothers' speech. Children's use of complex sentences, considered by Newport et al. a language universal measure, was not affected by aspects of the mothers' language use. The authors believed that the production of complex sentences was dependent upon growth of the child's own cognitive and linguistic abilities, not the linguistic environment provided by the mother. The second major finding was that features of the mothers' language could only be helpful to the child if they fit the child's listening biases. Mothers' use of deixis, for example, was instrumental in the child's acquisition of noun phrase inflections. A sentence like 'those are ballet slippers' would direct the child's attention to the noun phrase and hopefully to the plural inflection as well.

A similar but more recent study was performed by Furrow, Nelson and Benedict (1979). At the beginning of the study, the seven children who participated were 1;6, with MLU's of 1.0 to 1.4. The second session took place nine months later when the children were 2;3. The mothers speech was analyzed using a number of semantic and syntactic measures that had been used in previous studies, and the children's speech was analyzed using a subset of those used in the Newport et al. study. Correlations were computed between the mothers' speech characteristics at the first

session and the children's at the second. Furrow et al. found that complexities in the mothers' speech were negatively correlated with the children's language development. The greater number of words, pronouns and verbs per utterance used by a mother, the slower her child's linguistic development. Pronouns were considered syntactically more complex than their noun alternatives, while verbs were less concrete and consequently more difficult to learn than nouns. The factors positively related to language growth were interjections and the number of nouns per utterance. Furrow et al. also attempted to determine if mothers' speech to children differed from normal adult-to-adult speech in just those characteristics that should be beneficial to the child. It was predicted that for variables which have a lower mean in adult-to-child speech, there would be negative correlations between mothers' use of this variable and children's language growth. The opposite should be true of variables which have lower mean frequencies in adult-to-adult speech. Unfortunately, adult-to-adult speech samples were not obtained from the mothers in this study, and the predictions were based on means reported in studies by Newport (1977) and Phillips (1973). Eleven of the 12 correlations were in the predicted direction, although only five were significant. Furrow et al. conclude that some of the characteristics which cause child-directed speech to differ from speech addressed to adults facilitate language growth.

There are a number of problems with the type of study that has been designed to examine the effects of mothers' speech on language acquisition. One is that the effects are often investigated by means of significant correlations found between measures of maternal and child speech. The nature of correlations is such that the presence of possible confounding

variables make it extremely difficult to assume a cause and effect relationship between any two primary variables. A researcher may usually only speculate on the direction of possible effects. In studies of verbal interaction confounding variables may be numerous, due to naturalistic settings and the assumptions that are often made. For example, it is often assumed that the mother is the most important source of input in the child's environment. This may no longer be true, especially in the academic environments that are so often studied.

A second major difficulty concerns the features of baby talk that are investigated, and the amount of specific information that is given on any one feature. A very limited number of features, usually grammatical in nature, have been the focus of a great many studies. These are often examined only as part of a larger research question, and so information on specific features is lacking. Specific characteristics of the child-directed speech code must be examined in greater detail if we are to determine why these characteristics exist, and if and how they influence the process of language acquisition.

Studies of the effect of the linguistic environment on the child have been too few to determine whether features of baby talk may be classified according to their effects, as well as by function. Two features may be the result of adults attempting to clarify or simplify language for the child, but may have totally different ways of influencing the child's speech. Newport, Gleitman and Gleitman (1977), for example, propose that only language-specific aspects of the child's speech, or those features that relate to the surface representations of speech, may be influenced

by maternal input. This kind of proposal, however, only begins to answer the above question. It is also necessary to determine which aspects of the mother's speech may have an effect, and whether there are different kinds of language-specific effects. And, just as importantly, whether semantic, syntactic and phonological features differ in the kinds of effects they produce.

The Present Study

In this study, the feature of baby talk which replaces the conventional pronouns of English with nouns or unconventional pronouns was examined. Ferguson (1977) classified the process replacing first and second person pronouns by nouns of kinship terms as a simplification process of baby talk. It is simplifying to the extent that the adult pronominal system is reduced to a level more easily handled by children. Several questions regarding this feature were addressed:

1. To what extent does this characteristic exist as a general feature of English baby talk?
2. What are the systems of personal reference used by young children?
3. Do all mothers avoid conventional pronouns to the same extent?, and
4. Does the reference system used by a mother have an effect upon the language-learning child?

In order to investigate these questions samples of mother-child verbal interaction at two times were collected. Two groups of children, at different ages and linguistic levels, and their mothers participated. The feature of pronoun avoidance was examined in detail in the maternal samples to determine the extent to which individual mothers differ in the use of this feature. The kinds of pronominal reference used by children

was also examined, again noting individual differences. In Newport, Gleitman and Gleitman (1977) it was found that variation in maternal speech styles was still in evidence when the variation caused by the different ages and linguistic abilities of the children being addressed was partialled out. In the present study, different styles were immediately apparent because the children within each group were approximately the same age and had comparable linguistic abilities. Newport et al. also found that children's growth rates differed, even when their ages and linguistic ability were partialled out. Again, because the age and linguistic level of the children in the two groups of the present study were approximately the same, it was possible to examine these differences. The reference systems used by children at the two times were examined, allowing measures of growth to be determined. To investigate the final question above, correlations between the maternal and child variables were calculated, although the relationships found are subject to the previously mentioned limitations. The correlations were to demonstrate the kinds of relationships that existed between (1) a mother's use and avoidance of pronouns at the first session and the child's general linguistic ability at this time, (2) the mother's use and avoidance of pronouns at the first session and the child's use of pronominal and nominal reference at the second session and, (3) the child's use of pronominal and nominal reference at the second session and his or her general linguistic ability at that time. It was predicted that there would be negative correlations between mothers' avoidance of pronouns and the measures of children's speech, and that there would be positive correlations between mothers' use of pronouns and measures of the children's speech. No predictions were made as to the direction of

the relationships between mothers' pronominal systems at the first session and the children's at the second. It was predicted that measures of the child's use of pronominal reference would be positively related to general speech measures, while the relationship between nominal reference and measures of general linguistic ability would be in the opposite direction.

A final caveat regarding the term 'baby talk' must be inserted here. This term has been used with a number of distinct meanings in the literature. In one sense baby talk refers to the speech of very young children, usually with special reference made to the kinds of words used. A second meaning refers to the speech used by adults to address children, but with special reference to the lexical items, hypocoristic affixes and higher pitch that is often indicative of this special register. These are often considered the characteristics that may be consciously controlled. For example, when a mother protests the use of baby talk, it is usually these features which she will try to avoid when conversing with her child. The final meaning also refers to the speech of adults to children, but may be used even if it is not characterized by special lexical items or paralinguistic features. In this sense the term 'baby talk' is interchangeable with 'child-directed speech', 'adult-to-child speech' or 'speech modifications'. In the present study 'baby talk' will be used in this third sense, mainly because of the difficulties involved in separating those features of adult-to-child speech which are used consciously and with intent from those that seem to be controlled by some internal notion of how one speaks to a child.

In summary, three sets of analyses were performed in the present study:

1. An in depth analysis of mothers' use and avoidance of pronouns at one point in time and an in depth analysis of children's systems of nominal and pronominal reference at a later date,

2. A correlational analysis between measures of maternal and child speech,
3. An analysis of the differences between individual mothers and children on measures of their pronominal systems.

Chapter 2. The Acquisition of Pronominal Reference

The English Pronominal System

Deixis is the system of pointing out or indicating objects or people in relation to discourse participants. Deictic terms include pronouns, demonstratives, adverbs of place, come and go, etc. Person deixis is the system which determines the relationship between the persons referred to in an utterance and the speaker and hearer. By using a particular personal pronoun it is possible to indicate the relationship between an utterance and the speaker, listener or person talked about, or to refer back to a person mentioned in an earlier utterance.

In the present study the system of person deixis used by mothers when speaking to their children and the system used by young children will be studied. The particular focus will be the non-conventional personal pronouns that are used to refer to either the speaker or hearer. I will not be examining 'anaphora', the system of syntactic cross-referencing of pronouns and their referents. Children's early utterances generally refer to concrete elements in the immediate environment, and thus do not contain complex anaphoric elements.

One of the major complexities of the English personal deictic system concerns the problem of 'shifting reference' (Bruner 1974/5, Clark 1978, Jespersen 1964). It is usually assumed that words refer to persons, objects, events or ideas in the real world. In order that the speaker of any one language understands other speakers, these referents are necessarily fixed and stable. When a word is used the speaker's mental representation of that word must be approximately the same as the listener's.

Personal pronouns, however, have been called 'shifters' because they do not have fixed referents. I, in ordinary discourse, refers to the person who is at that moment speaking and you is used by the speaker to refer to the person spoken to:

Thus the indicators I and you cannot exist as potentialities; they exist only insofar as they are actualized in the instance of discourse, in which, by each of their own instances, they mark the process of appropriation by the speaker.

(Benveniste 1971, p. 220).

A knowledge of the reciprocal roles involved in discourse is necessary before one can possibly determine the referents of either of these pronouns.

The personal pronouns of English are given in Table 1. (Since this study focuses solely on the personal pronouns used when children and their mothers refer to themselves or to each other, the neuter pronoun it will not be dealt with at all). Each pronoun has different forms as its grammatical role within a sentence changes. Three different cases, subjective, objective and possessive, are marked, showing the relationship between the pronouns and the verb of the sentence. The subjective case is used only when the pronoun occurs directly before the main verb in the surface representation of a sentence. If the pronoun is preceded by a preposition, if it is a direct or indirect object, or if no verb is present, the objective case is used:

Table 1. The English personal pronouns.

	Subjective	Objective	Possessive	
			Prenominal	Substitutional
<hr/>				
Singular				
First Person	I	me	my	mine
Second person	you	you	your	yours
Third person	he, she	him, her	his, her	his, hers
Plural				
First person	we	us	our	ours
Second person	you	you	your	yours
Third person	they	them	their	theirs

I fed the horse

The horse was fed by me.

She'd go if she could.

He wants her to go.

He gave me the book.

He gave the book to me.

Q. Who did this?

A. I did.

Q. Who did this?

A. Me.

The genitive or possessive case generally has two forms: the prenominal when the pronoun precedes a noun, and the substitutional when the pronoun replaces an entire noun phrase:

This is my blanket.

This is mine.

Where is her new dress?

Where is hers?

The Child's Acquisition of English Pronouns

Few empirical studies have investigated how children acquire the full pronominal system of a language, although a large number have looked at specific problems influencing this acquisition. Many of the early studies examined the pronouns produced by large numbers of children (e.g. Davis 1930, Goodenough 1938, McCarthy 1954) while the more recent ones have looked in detail at the pronominal systems of individual children (e.g. Huxley 1970, Strayer 1977).

Many of these authors have observed that children initially use proper nouns or kinship terms in place of pronouns, and that this usage may continue long after some pronouns have been learned. Menyuk (1969), for example, notes that the two children she studied used names to refer to themselves and kinship terms such as Mommy or Daddy to refer to others until approximately $2\frac{1}{2}$ years of age. Strayer (1977, 1979) found these same forms in the speech of her young subjects. She proposes that the use of nouns for pronouns allows the child to overcome the reference confusion, since proper nouns do have fixed and stable referents.

Children vary a great deal in the extent to which they make use of nominal reference. Bellugi (1971) studied speech samples from Adam, and found that he was using his name much more often than the first person pronoun at 28 months. Huxley (1970) found that one of the two children in her study often substituted names for both I and you, and did so until more than three years of age. Sentences such as the following occurred frequently in this child's speech: 'Douglas give letter', 'Douglas able to stand it up', 'Douglas want this' (Huxley 1970, pp. 160-161). The

second child in the study (Katriona) used substitutions of this kind much less frequently. Bloom, Lightbown and Hood (1975) studied four children who were using one of two systems of reference. The two boys, Eric and Peter, encoded the majority of objects pronominally in their early multi-word speech. The girls, Kathryn and Gia, used a predominantly nominal system of encoding. Their nominal encodings included forms such as proper nouns and kinship terms. By the time an MLU of 2.5 was reached, all four children expressed affected-objects nominally and agents pronominally.

In a chapter on norms of development, Gesell and Armatruda (1947) state that by 30 months of age children have generally ceased using nominal reference when referring to themselves. The transition from nominal to pronominal reference may take several months or even years, and may often be visible in children's dialogues. Both Adam and Gia used two versions of a sentence in a single conversation, one with nominal encoding, the other pronominal: 'Adam write/I write', 'Mommy read/You read' (Brown 1973, p. 211), 'Gia lie down/I lie down' (Bloom et al. 1975, p. 20). Douglas, from Huxley's study, first produced I at 31 months but often substituted other pronouns or his name until 39 months of age. Katriona used I at the beginning of the study when she was only 27 months, and by 34 months had it well established in her system. Strayer (1977) gives 22.2 months as the mean age when four subjects first produced I. The children studied by Sully (1895) produced I initially at anywhere from 19 to 29 months. Each of these authors agrees that I is the first personal pronoun used appropriately by children.

There has been very little research in the order of acquisition of the full pronominal system of English, or the age at which individual pronouns, other than I, are learned. Markey (1928) discusses a number of trends that characterize the way children learn pronouns. He states that there is a tendency for:

1. "The personal pronouns to appear in the order: 1. first person; 2. second person; 3. third person".
2. "The subject-pronoun to appear before the possessive pronoun in each case".
3. "The subject 'I', 'we' and 'they' to appear before object 'me', 'us' and 'them'". (Markey 1928, p. 77).

Based on the age when eight children first produced pronouns, Markey gives the following order of acquisition of first and second person pronouns: I, you, me, my, your. Strayer (1977) gives a slightly different order based on the mean age at first production for four children: I, my, me, you (subject), your, you (object). In a study by Morehead and Ingram (1973) the order of acquisition of personal pronouns was related to the linguistic level of the children. Using 15 normal subjects, it was found that I was acquired first, when children had an MLU of slightly over 2.00, at approximately 20 months of age. Me and my were acquired next, by an MLU of approximately 2.75 (21 months) followed by you, your, she and them at an MLU of approximately 3.70 (33 months). We, he, they, us, you, him and his were acquired by the time an MLU of approximately 4.5 was attained, and the rest had been learned by the time the children's MLU's were approximately 5.5. Thus all three authors would agree that the first and second person pronouns are among the first acquired.

There are three main difficulties that children may encounter in learning the pronominal system of English. The first concerns the acquisition of the I-you subsystem. Clark (1978) and Shipley and Shipley (1969) discuss two hypotheses children may adopt to understand personal pronouns. The first is called 'absolute' comprehension. If the child understands pronouns in an absolute manner, he will assume that each pronoun has a specific fixed referent. Since parents are heard using I to refer to themselves, their children may assume that I means the same thing as Mommy or Daddy. Since you is used by the parents to refer to the child, the child may first assume that it is merely a substitute for the child's own name. The second hypothesis is that of 'relative' comprehension, where the child immediately recognizes the shifting nature of the system. I refers to the speaker, whether it be a parent or the child, and you to the listener or addressee. Strayer (1977) gives three stages in the development of this hypothesis. At first the child recognizes you when it is used to address the child, and can use I correctly in self-reference. At the second stage, the child realizes that I can also refer to the mother when she is speaking and you to her when she is listening. Only at the final stage does the child generalize these rules and conclude that I refers to the person talking and you to the listener.

There are reports of children who appear to have initially chosen the first of these two hypotheses (Clark 1978, Cooley 1908, Jespersen 1964, Sully 1895, VanderGeest 1975). These children produce sentences like the following: 'Will I tell a story?' instead of 'Will you tell a story?' (Jespersen 1964, p. 124), 'That's your chair' instead of 'That's my chair' (Jespersen 1964, p. 124), 'I carry you' instead of 'You carry me' (Cooley

1908, p. 352). This kind of confusion can occur between 23 and 30 months of age, persisting sometimes as long as three to four months. The majority of children do, however, choose the correct hypothesis. Strayer (1977) found that even though all four of her subjects made pronoun reversals at some time, they were very rare. Reversals were made more often when referring to themselves than when referring to others. Shipley and Shipley (1969) note that only one child of the twenty in their study made this type of error consistently. Huxley found no reversals in the speech samples from her two subjects.

The second stumbling block children may encounter is the pronominal case system. Not only do children have to deal with the problem of shifting reference, but they also must learn that most pronouns have a number of different case frames and several specific forms. As Bellugi (1971) points out, a simple positional analysis of adult sentences will not teach a child how and when to use a specific form. I, the subject pronoun, may occur both initially, as in 'I am going now', or sentence medially, as in 'Bob wants to know if I am going'. The most common case error made by children is the substitution of objective pronouns for subjectives. This type of error has been noted by Bellugi (1971), Brown (1973), Huxley (1970) and Ingram and Webster (1972). Subjective pronouns are used correctly by most children by approximately three years of age, although Hatch (1969) found some preference for objective pronouns in imitation tasks performed by older children. Pre-kindergarten and pre-second graders were asked to imitate reversible sentences of which half had the correct pronoun and half had either a subject pronoun in an object slot, or an object pronoun in a subject slot. It was found that the

children changed an incorrect subjective case pronoun in object position significantly more often than an objective pronoun in a subject slot. Several of the pre-kindergarteners even changed correct subjective case pronouns into the objective case.

Reviewing the literature on children's errors in case-marking, Tanz (1974) found that these errors could be explained by two of the operating principles proposed by Slobin (1973). The first principle is 'avoid exceptions' (Slobin 1973, p. 205). Since the objective form of the pronoun occurs in more syntactic positions than the subjective, the most economical assumption is that the objective case forms are the underlying ones. On this basis rules can be formulated to account for the occurrence of subjective pronouns. The second operating principle is 'pay attention to the ends of words' (Slobin 1973, p. 191). If the child can apply such a strategy to words, Tanz suggests that a similar rule can be applied to larger constituents such as phrases or sentences. The child will then select the objective form of the pronoun as basic, since its position at or near the end of phrases will make it more perceptually salient. Mackie, a child studied by Gruber (1969), appeared to have chosen the objective form as the basic or more generalizeable one. In this child's speech, objective pronouns and nouns were grouped together to function as topics, with the unmarked subjective pronouns functioning as comments. This distinction was made through distributional and intonational differences between the two groups of lexical items. Gruber suggested that Mackie, and perhaps other children, do not recognize subjective pronouns as actual noun phrases or subjects of sentences, but rather as introductory particles or verbal inflections.

The third type of mistake children may make in their use and understanding of pronouns is that of gender. Two experiments, one by Ingram and Webster (1972) and the other cited in Wales (1979) used an experimental paradigm involving the manipulation of dolls to study pronominal errors. In the Ingram and Webster study, two groups of subjects, normal and linguistically deviant, were tested for comprehension and production of he, she, him and her. The normal subjects ranged in age from 3;0 to 4;5 while the ages of the deviant children ranged from 5;9 to 7;8. It was found that almost half the comprehension errors made by normal subjects were of gender distinction. In the deviant group, gender errors were even more prevalent, occurring in 31.8% of instances where pronouns were used. With the production task, he was used as a substitute for she by normal subjects, but she was never substituted for he. Him and her were used as substitutions for one another. Wales (1979) tested solely for the comprehension of personal pronouns, using two groups of children with mean ages of 4;6 and 6;0. Both groups found third person references more difficult than either first or second. Gender was interpreted correctly 85% of the time.

The Pronominal System of Baby Talk

The use of personal pronouns in child-directed speech has been examined recently by Strayer (1977, 1979) and Wills (1978). Wills (1978) investigated the speech addressed to one child learning French and English and to four monolingual English speakers. This study focused on the kinds of reference used by parents that were departures from the conventional system of pronominal reference. The most frequent departures from this system were the following: (where S=Sender and R=Receiver)

Objectification	S \rightarrow 3P
	R \rightarrow 3P
Unification	S \rightarrow <u>we</u>
	R \rightarrow <u>we</u>
Disassociation	S \rightarrow ϕ
	R \rightarrow ϕ

The substitution of third person pronouns, proper nouns or kinship terms for first and second person singular pronouns (rules 1 and 4) is called objectification. This process may be further broken down into the components: S or R \rightarrow kinship term or name, and S or R \rightarrow 3rd person pronoun. This division allows one to study the process replacing a first or second person pronoun by a noun separately from the process replacing a first or second person pronoun by a non-conventional pronoun. Kinship terms replace I more frequently than third person pronouns, although both may occur in a single sentence, e.g. 'You come to mean old mama, she'll put it on ya', 'Mommy's got holes in her shoes' (Wills 1978, p. 278). Substitutions for second person pronouns were the most frequent type of baby talk reference found by Wills.

The process of objectification, according to Wills, obscures the individual roles of sender and receiver by placing them in the larger category of people referred to by name. This blurs the distinction between the parent and child, at least in a linguistic sense. By objectifying pronouns the parent also allows the child to hear his or her own name more often and to learn that everyone may be addressed in a number of ways.

Ferguson (1964, 1977) and Jespersen (1964) report that objectification is a cross-cultural phenomenon.

In Serbo-Croatian, adults frequently use kinship terms in place of pronouns, often doing so until the child is more than four years of age (Jocić 1978). It is unusual for Japanese parents to begin using first and second person pronouns until long after their children have reached school age (Fisher 1970). Objectification has further been attested in Marathi (Kelkar 1964), Romanian (Avram 1967) and Dutch (VanderGeest 1975). In a comparative study of English and Spanish baby talk, Blount and Padgug (1977) found that although parents in both cultures often used nouns to replace pronouns when speaking to their children, this process occurred more frequently in Spanish than English. Both VanderGeest and Jocić believe that objectification is an adaptation to the child's limited linguistic system, aimed at facilitating the child's understanding. Jespersen disagrees, claiming that the child's understanding may be aided at that moment: 'but on the other hand the child in this way hears these little words [pronouns] less frequently and is slower in mastering them'. (Jespersen 1964, p. 123).

Wills' next category, comprising rules 2 and 6, is called unification. This process replaces the adult I and you by the first person plural pronoun, we. Unification blurs the distinction between the child and the parent as separate entities, emphasizing instead the dyadic unit as a whole. This kind of substitution is most often used in formulaic utterances such as: 'There we go!', 'We'll see ya later', or 'Up we go!'. Unification reportedly occurs in both Serbo-croatian (Jocić 1978) and Romanian (Avram 1967).

Disassociation, which deletes either first or second person pronouns (rules 3 and 5), de-emphasizes both the entity and role of the participants

in a dialogue. The deletion of sender most often occurs in ritualized games such as 'gotcha', where the mother attempts to involve her child as much as possible in the activity at hand. Second person pronouns are frequently deleted in narratives describing the child's activities, as the mother attempts to involve herself in the action.

Strayer (1977, 1979) has also investigated parents' use and avoidance of I and you, along with their children's acquisition of these two pronouns. She found that when parents were conversing with their children, you was used more frequently than I by parents while children used I more frequently than you. Parents used personal pronouns more often than names when referring to either the child or to themselves. Children, on the other hand, used personal pronouns more often than names when referring to themselves, but names more often than second person pronouns when referring to adults. The non-linguistic contexts of I- and you-class utterances differed significantly. Adult utterances containing I tended to describe ongoing activity and required a response from the child only 14% of the time. You-class utterances were generally directed towards the child, and required verbal responses from the child almost half the time.

Very little is known about the influence of linguistic input on the child's acquisition of personal pronouns, with the exception of the early acquisition of I and you. It is not known if the order in which pronouns are acquired is related to some aspect of the input language such as frequency of use, or whether the order is determined by innate mechanisms. Although the use of noun substitutions and non-conventional pronouns has been studied in adult speech to children, it has not been determined whether

these kinds of substitution processes influence the amount of nominal reference or the kinds of pronominal errors made by children. And lastly, it is not known if differences in children's pronominal systems are caused by differences in the linguistic input that is heard. The present study was undertaken to shed light on these questions. Since the reciprocal relationship between the I-you subsystems used by children and adults has been investigated by Clark (1978), Shipley and Shipley (1969) and Strayer (1977, 1979), this aspect was largely ignored here.

Chapter 3. Method

Subjects

Two groups of subjects, all living in the greater Vancouver area, participated in the study. Each group was comprised of four mother-child dyads, all of which participated in two naturalistic sessions. The ages, MLU's, upper bounds and ratios of lexical types over utterances produced for the eight children are given in Table 2. This table also gives the number of utterances produced by each mother and child at the two sessions. The ratio of lexical types over utterances produced, designated as LT/U, was developed for the purposes of this study. This measure represents the ratio of total number of lexical items in the child's vocabulary to the number of utterances produced at that session. It was designed to measure the child's vocabulary size, taking into account possible differences in sample size.

Using the mean MLU's from Table 2 it can be seen that at the initial session the children from Group 1 were in Stage I and those from Group 2 were in early Stage II (see Brown 1973). At the time of the second session Group 1 children were in late Stage II, and Group 2 children were in Stage III.

Since one of the purposes of this study was to examine individual differences in children's and mothers' speech, no attempt was made to control for family or socio-economic variables. Seven of the children came from two parent families. At least one of each child's parents had completed some level of post-secondary education, and in six out of eight dyads, both parents had further education. Three of the eight mothers did not work

Table 2. Measures of general linguistic ability for two groups of children and number of utterances produced by two groups of dyads at two sessions

Parameters		Group 1		Group 2	
		Session 1	Session 2	Session 1	Session 2
Children					
Age	Mean	1;5	2;1	2;4	2;8
	Range	1;4-1;7	2;0-2;3	2;2-2;6	2;6-2;10
MLU	Mean	1.33	2.13	2.39	2.89
	Range	1.13-1.53	1.55-2.95	2.09-2.74	2.68-3.16
Upper bound	Mean	3	6	7	13
	Range	3-4	4-8	5-9	8-19
LT/U	Mean	.20	.43	.50	.55
	Range	.13-.23	.42-.52	.44-.56	.46-.65
Utterances produced	Mean	326	295	261	451
	Range	246-430	157-394	176-427	243-568
Mothers					
Utterances produced	Mean	629	497	489	657
	Range	584-687	207-741	225-684	361-823

during the day. The remaining five either worked part-time or were attending university. The children of the university and working mothers all attended day-care at least half-time. All parents had been living in Canada for at least eight years; six had been born in Canada, the remaining two in the United States. Four of the children had no siblings, and one had twin sisters born while the study was in session.

Materials

Photographs of the mother and her child, both alone and playing together, were taken by the experimenter. At least seven pictures were taken of each of the dyads, and the mothers were asked to supplement this set with pictures of their own if possible. The photographs, which were taken approximately one week before the second session took place, were presented to each of the mothers for use at this session. It was expected that the presence of these pictures would encourage the members of each dyad to talk about themselves and hence to increase the use of speaker and hearer reference.

Richard Scarry's Best Work Book Ever (1963) was supplied by the present author for use at the second session. This book contains a large number of vocabulary items with matched pictures, supplemented by stories about day-to-day life. The mothers were asked to read certain prose sections to the child and to attempt to have the child name particular objects and people in the book. The passages and words that the mothers were to try to elicit were circled in red ink.

Procedure

Speech samples from the eight children and their mothers were collected in two one-half hour sessions. Each session contained three conversational situations, each approximately ten minutes in length. In the first sessions, speech samples were collected while the mother dressed the child, during free-play and while reading a book. Mothers were asked to spend ten minutes playing with their child in whatever way was the most natural for the free-play situation. The books for the book-reading situation were supplied by the mothers, and they were usually ones the child was familiar with. The second session took place approximately seven months after the first for Group 1 dyads, and approximately $3\frac{1}{2}$ months later for Group 2 dyads. The interval between sessions was shorter for Group 2 dyads since it was felt that the older children would be advancing linguistically at a faster pace than the younger children. Since the length of this interval is essentially arbitrary, no claim is being made that the same amount of growth would take place for both groups of children. The second session contained a dressing situation and a book-reading situation, along with a ten minute period during which the mother and her child were to discuss the photographs supplied by the experimenter. The book used for the second session was the one supplied by the experimenter.

The investigator was not present at any of the sessions, but supplied a tape recorder so that the mothers could do the tape recording themselves. Each was given instructions concerning the use of cassette recorders and the volume and tone controls were preset. Although this method of taping may cut down on the amount of contextual information available to the

investigator or transcriber, it was felt that a more natural sample of mother-child interaction would take place if a stranger was not present. Mothers were asked to tape each of the three conditions for each session within a 48 hour period.

On the day the tape recorder was picked up, after the first session, a 15 minute interview with the mother was tape recorded. During the interview, the experimenter asked the mother eight questions concerning the kind of verbal interaction she and her child usually engaged in, and her use of and feelings toward baby talk. These interviews represented samples of adult-to-adult speech that could be compared to the samples of adult-to-child speech. Four experimenters, including the author, were involved in the data collection for Group 1 dyads at Session 1. These same four experimenters conducted the interview sessions for the four mothers from Group 1. All subsequent interviews and home visits were carried out by the author.

Analyses

Tapes from all 16 sessions were transcribed either phonetically, when a child's production did not match the target word, or in standard orthography, when it did. Three of the first sessions were transcribed by the experimenters conducting these sessions, although the tapes were checked and corrected where necessary by the author. A maximum of 350 maternal utterances per situation were analyzed. This had an effect on speech samples from two mothers, and in these cases the analyses do not include utterances from the mother or her child after this cut-off point. The number of utterances analyzed for mothers and children are given in

Table 2. The first 100 maternal utterances addressed to the experimenter were analyzed in the interview session.

The number of first and second person pronouns and the 'objectifications' and 'unifications' used by the two groups of mothers at Session 1 were determined. Objectifications occurred when a proper noun, kinship term or third person pronoun was used when a first or second person pronoun would have been used in adult discourse. For example, if a mother said 'Mommy do it for you', one instance of objectification would be counted. Instances of objectification were divided into two categories: nominal and pronominal. Nominal objectification occurred when a name or kinship term was used where conventional usage required a first or second person pronoun. Pronominal objectification occurred when a third person pronoun was used where a first or second person pronoun would have been used conventionally. An example of a pronominal objectification would be a mother saying to her child, 'Mommy said that she'd do it for you', meaning that the mother would be doing something for the child. 'Unifications' occurred when the mother used any of the first person plural pronouns, we, us, our or ours, when a first or second person pronoun would normally occur in adult speech. If a mother said 'Let's put you to bed now', one instance of unification would be counted. For purposes of presentation the instances of unification were combined with the instances of pronominal objectification under the category 'pronominal substitutions'. Instances of Wills' 'disassociation' were excluded from the analysis for two reasons. First, it was almost impossible to decide whether the pronoun which was omitted referred to the speaker or to the listener or hearer. Secondly,

it was very difficult to determine if the utterance in question was an imperative or if there was in fact a missing pronoun in a declarative or interrogative sentence. The number of pronoun omissions that could indisputably be isolated was so small that it would have been meaningless to include them in the analysis.

All instances of first or second person pronouns used by the two groups of children at the second session were isolated. In addition, the number of particular pronominal forms used by each child at this session were determined. If, for example, a child used the pronoun I six times, the pronoun me twice and the pronoun you (subjective) a total of four times, then he or she would have used a total of three pronominal forms or types. The difference between these measures of pronoun frequency and number of pronominal forms is a difference of tokens versus types. First and second person pronominal forms were included in number of pronominal forms. The number of kinship terms or names that were used where a pronoun would have been used in adult-to-adult discourse were also calculated for the children at Session 2. These are presented in the category 'nominal reference'. If a child, for example, said 'John do it', when an adult would have said 'Ill do it', one case of nominal reference would have been counted. The number of non-standard pronouns used by each child at Session 2, such as the use of a third person pronoun in self-reference, were also determined.

In order to calculate a measure of pronominal growth for each child, the number of pronouns used and the number of pronominal forms used at Session 1 were also found for each child. Since the children from Group 1

were using mainly single-word utterances at the initial session it was almost impossible to investigate nominal reference as it is being studied here. Therefore only the growth of pronominal reference from one session to the next was examined for both groups of children. This measure of growth was the difference in the number of first, second and third person pronouns used by a child at Sessions 1 and 2, as well as the difference in the number of pronominal types used at Sessions 1 and 2.

Three major sets of correlations were calculated for these data. The first group related the frequency with which mothers used pronouns, nominal objectifications and pronominal substitutions at Session 1 and certain measures of the child's linguistic ability at Session 1. The child measures were those of MLU, upper bound and LT/U, as well as the number of pronominal types and tokens used. These correlations were designed to determine if individual variation in the mothers' use of pronouns and substitutions could be accounted for by the linguistic level of the children. As was previously mentioned it was predicted that there would be negative correlations between the mothers' use of nominal objectifications and pronominal substitutions and measures of the child's speech, and positive correlations between the mothers' use of pronouns and measures of the child's speech. The second set of correlations investigated were those between mothers' use and avoidance of pronouns at Session 1 and the children's use of pronominal and nominal reference at Session 2. Relationships of this kind would help to determine if the child's use and avoidance of pronouns was related to the mother's use and avoidance of pronouns. As was previously stated, no predictions were made concerning the value of these relationships. The third set of correlations examined the relationship

between the children's use of pronominal and nominal reference at Session 2 and their MLU's, upper bounds and LT/U's at that same session.

Relationships between the child's use of nominal reference and the number and kinds of pronouns used at Session 2 were also examined. These correlations were designed to demonstrate whether the children's pronominal systems could be predicted by their general linguistic abilities. It was predicted that measures of the child's use of pronominal reference would be positively related to general speech measures, while the relationships between nominal reference and general linguistic level would be negative.

To be certain that the effects being investigated were in fact due to relationships between the mothers' speech at the first session and the children's at the second, a final set of correlations were calculated. These are based on a discussion by Furrow et al. (1979). In assuming, on the basis of significant correlations, that aspects of the mother's speech at one time (t_1) have an influence upon aspects of the child's speech at a later time (t_2), then:

it is necessary to ensure that the significance did not result from (a) differences in the children at time t_2 accounting for the variation among mothers at t_1 while also being responsible for the variations amongst themselves at t_2 (thus producing an artificial 'mothers at t_1 -children at t_2 ' correlation; or (b) differences in mothers at t_1 accounting for differences in mothers at t_2 which were in turn responsible for the concurrent differences between children at t_2 . (p. 427).

In order to avoid the possible relationships in (a), the children from each group were matched at the initial session for linguistic level. The relationships in (b) were investigated by examining the mothers' speech at the second session and comparing correlations between maternal measures at t_2 and measures of children's speech at t_2 and the correlations found between mothers' speech at t_1 and the children's at t_2 . If, as was the case in the Furrow et al. study, a significant correlation between mothers' and children's speech at t_2 always had the opposite sign from the same significant correlation between mothers' speech at t_1 and the children's at t_2 , then the second type of relationship cannot exist. In this way, it can be shown that the relationships under investigation are really between a mother's speech at one time and her child's speech at a later date. If this is the case then the child's linguistic level must be taken into account in studies of environmental effects. This also means that until the changes in speech modifications are more carefully examined, a mother's speech at one time could not be predicted by her speech at an earlier time. Thus any relationship found between a mother's language at one time and her child's after some interval must be a true one, not just an artifact of the mother's speech at some other time.

Chapter 4. Results

Mothers' Use and Avoidance of Conventional Pronouns

The analysis of first and second person pronouns used by the two groups of mothers at Session 1, based upon 100 utterance samples, indicated that the most commonly used pronoun by both groups was the second person subjective form, you, and that the least commonly used was the first person possessive form, my (see Table 3). The pronoun I was used more often by the second group of mothers. Second person pronouns were used more frequently than first person pronouns by both groups ($t(14) = 9.82$, $p < .001$) and subjective case pronouns were used more frequently than objectives ($\chi^2(1) = 12.25$, $p < .001$) or possessives ($t(14) = 8.40$, $p < .001$).

The results of the analysis of mothers' avoidance of conventional first and second person pronouns at Session 1 are presented in Table 4. The mothers of the younger children who were at Stage I at this time used significantly more cases of nominal objectification than the mothers of the children who were at Stage II ($t(6) = 3.52$, $p < .05$). Both groups of mothers used the process of unification, where a first person plural pronoun is substituted for a first or second person singular form more often than they used a third person pronoun to objectify a first or second person pronoun. First person pronouns were replaced by a kinship term or name or a non-conventional pronoun more often than second person pronouns by both groups of mothers, although this difference was not statistically significant. Both groups used nominal objectification or non-conventional

Table 3. Pronouns used by two groups of mothers at Session 1.

Parameter		Group 1 (children at Stage I)		Group 2 (children at Stage II)	
		Mean	S.D.	Mean	S.D.
a) Pronoun frequency	I	1.99	1.41	5.00	1.05
	me	2.02	1.98	.98	.56
	my, mine	.12	.08	.62	.60
	you (subj.)	17.75	5.14	16.83	1.71
	you (obj.)	.88	.47	.85	.58
	your, yours	6.99	3.00	4.37	1.41
b) Frequency of first and second person		29.75	9.47	28.66	1.55
		Frequency Proportion		Frequency Proportion	
c) Person - first		16.50	.14	26.41	.23
	- second	102.51	.86	88.23	.77
d) Case - subjective		78.94	.66	87.35	.76
	- objective	11.60	.10	7.36	.06
	- possessive	28.47	.24	19.94	.18

Table 4. Nominal objectifications and pronominal substitutions used by two groups of mothers at Session 1 (per 100 utterance sample)

Parameter		Group 1 (children at Stage I)	Group 2 (children at Stage II)
a)	Nominal objectification	Mean S.D.	3.36 4.19
i)	Person		.53 .61
	First	Frequency Proportion	2.10 1.00
	Second	Frequency Proportion	0.00 .00
ii)	Case		
	Subjective	Frequency Proportion	1.51 .72
	Objective	Frequency Proportion	.59 .28
	Possessive	Frequency Proportion	0.00 .00
b)	All pronominal substitutions	Mean	2.34
i)	Pronominal objectification	Mean S.D.	.10 .10
ii)	Unification	Mean S.D.	2.24 .46
iii)	Person		
	First	Frequency Proportion	7.39 .79
	Second	Frequency Proportion	1.98 .21
iv)	Case		
	Subjective	Frequency Proportion	5.30 .56
	Objective	Frequency Proportion	3.87 .42
	Possessive	Frequency Proportion	.20 .02

pronoun substitutions for subjective pronouns more often than they did for objective or possessive pronouns. These differences, however, did not reach significance.

Children's Systems of Pronominal and Nominal Reference

The mean number of first, second and third person pronouns used per 100 utterance sample by Group 1 children at Session 1 was 2.08. These children were at Stage I at this time and were just beginning to use pronouns. I and my were used by three out of the four children, and me and you (objective) were used by two out of the four. You (objective) and he were used by one child each. The second person possessive forms and the third person objective and possessive forms were not used by any of the children at this time. Group 2 children at Session 1 used a mean number of 21.62 pronouns per 100 utterance sample. These four children were in Brown's Stage II at this time.

Table 5 presents the results of the analysis of first and second person pronouns used by the two groups of children at the second session. At this session, the children from Group 1 were in Brown's Stage II, and those from Group 2 were in Brown's Stage III. For both groups of children I was the most frequently used pronoun, and your or yours the least frequent. The older children's systems more closely resembled their mothers: you (subjective) was more frequent and you (objective) was relatively less frequent than it was in the speech of the younger children. Both groups of children used first person pronouns more often than second ($t(14) = 3.91, p < .01$) the opposite to the trend found in mothers' speech. As with the mothers, children used more subjective case pronouns than objectives ($\chi^2(1) = 6.25, p < .05$).

Table 5. Pronouns used by two groups of children at Session 2

Parameter		Group 1 (Stage II)		Group 2 (Stage III)	
		Mean	S.D.	Mean	S.D.
a) Pronoun frequency	I	7.28	5.84	8.84	1.39
	me	.40	.60	1.00	.53
	my, mine	2.49	1.76	2.38	1.25
	you (subj.)	.51	1.02	3.00	1.52
	you (obj.)	.77	.44	.98	.97
	your, yours	.06	.13	.85	.66
b) Frequency of first and second person		11.51	8.19	17.04	1.60
		Frequency Proportion		Frequency Proportion	
c) Person - first		40.67	.88	48.85	.72
	- second	5.36	.12	19.29	.28
d) Case - subjective		31.15	.68	47.33	.69
	- objective	4.67	.10	7.90	.12
	- possessive	10.20	.22	12.91	.19
e) Pronoun types (first, second and third persons)		4.25	2.22	10.50	2.89

Results of the analysis of children's use of nominal reference and non-standard pronouns are given in Table 6. The younger children used nominal rather than pronominal forms for all six persons and cases. The older children used nominal forms for all cases with the exception of the second person possessive. Both groups of children used nominal forms most frequently in the first and second person objective cases and least frequently in the second person subjective and possessive cases. The only type of non-standard pronoun use found in the speech of either group of children was the substitution of third person pronouns for first or second person reference. This kind of substitution was used most frequently when children were looking at photographs of themselves. A child from Group 2 was involved in the following exchange:

Child: (looking at picture of himself)

He's all dirty.

Mother: Who is?

Child: (says his name)

Mother: He's all dirty?

Child: Yeah.

What's he doing here?

Child: He's biting a donut.

Mother: He's biting a donut.
Actually there you are
with your little ...

Both nominal reference and non-standard pronoun use occurred more often in the first person than in the second, but these differences were not significant. Nominal forms were used more often for the objective case than the subjective ($t(14) = 4.34$, $p < .001$) or possessive ($\chi^2(1) = 6.25$, $p < .05$) by both groups of children.

Table 6. Nominal reference and non-standard pronouns used by two groups of children at Session 2 (per 100 utterance sample)

Parameter		Group 1 (Stage II)	Group 2 (Stage III)
a) Nominal reference	Mean	6.16	3.63
	S.D.		
i) Person			
First	Frequency	14.57	9.79
	Proportion	.59	.67
Second	Frequency	10.08	4.74
	Proportion	.41	.33
ii) Case			
Subjective	Frequency	4.19	1.20
	Proportion	.17	.08
Objective	Frequency	16.79	12.90
	Proportion	.68	.89
Possessive	Frequency	3.67	.35
	Proportion	.15	.03
b) Non-standard pronoun use - S and R → third person pronoun	Mean	.35	2.51
	S.D.	.40	4.10
i) Person			
First	Frequency	1.38	7.14
	Proportion	1.00	.71
Second	Frequency	0.00	2.88
	Proportion	.00	.29
ii) Case			
Subjective	Frequency	.50	6.56
	Proportion	.37	.65
Objective	Frequency	.25	1.23
	Proportion	.18	.12
Possessive	Frequency	.63	2.23
	Proportion	.45	.23

Very few errors of gender, case, reversal of person or phonetic realization were found in the pronouns or substitutions used by the eight children at Session 2. Three children; two in Group 1 and one in Group 2, omitted the 's when using their own name in place of a possessive pronoun. These errors accounted for a total of six tokens. Two children from Group 2 used the form you as a possessive pronoun, for a total of four errors. One of these children also produced the only case of a pronoun reversal found in these data. She said "Now you a unicorn again" meaning "Now I had a unicorn again", immediately after her mother used a related sentence containing you. A third child from Group 2 failed to observe the correct gender distinction when using third person pronouns.

Correlations

The Pearson product-moment correlation coefficients obtained for these data are given in Table 7. Part (a) of the table shows the results obtained when the mothers' use of pronouns, nominal objectification and pronominal substitutions were correlated with measures of the child's general linguistic ability, and with the child's ability to use pronouns. Both the maternal and child measures in this part of the table come from Session 1. The statistically significant correlations were those between the mothers' use of nominal objectification and pronominal substitutions and the children's MLU's, upper bound, number of pronominal forms and pronoun frequency at the first session. The negative value of these correlations shows that the mothers of the most linguistically advanced children were those who used the fewest cases of conventional pronoun avoidance. There were no significant correlations between children's linguistic levels and the number of pronouns used by mothers.

Table 7. Correlations

a) Correlations between maternal and child variables at Session 1

Child variables	Pronoun frequency	Maternal variables Nominal objectification	Pronominal substitutions
MLU	-.03	-.47*	-.45
Upper bound	.00	-.44*	-.45*
LT/U	-.17	-.40	-.40
Pronoun frequency	-.05	-.54*	-.62*
Pronominal forms	.21	-.67**	-.66**

*p < .05 one-tailed

**p < .01 one-tailed

b) Correlations between maternal variables at Session 1 and child variables at Session 2

Child variables	Pronoun frequency	Maternal variables Nominal objectification	Pronominal substitutions
Pronoun frequency	-.24	-.08	-.36
Nominal reference	-.41	.68**	.05
Non-standard pronouns	-.19	-.21	-.31
Pronominal forms	.05	-.40	-.41

*p < .05 two-tailed

**p < .01 two-tailed

c) Correlations between child variables at Session 2

	Pronominal forms	Pronoun frequency	Nominal reference	Non-standard pronouns
MLU	.59*	.59*	-.15	.19
Upper bound	.93**	.62*	-.40	-.07
LT/U	.51	.39	-.09	.43
Pronoun frequency			-.17	.14
Pronominal forms			-.56*	-.12

*p < .05 one-tailed

**p < .01 one-tailed

Part (b) of the table gives the results of the correlational analysis between mothers' use and avoidance of conventional pronouns at the first session and the children's pronominal systems at the later one. There was a significant positive relationship between mothers' use of nominal objectification and the child's use of nominal reference at the later time. There were no significant relationships between a mother's use or avoidance of pronouns and the child's use of pronominal reference.

Correlations between measures of the child's linguistic ability at Session 2 and his or her ability to use pronouns are given in part (c) of Table 7. MLU, upper bound and LT/U were positively related to the number of pronominal forms used, and MLU and upper bound were positively related to the total number of pronouns used by a child. None of the measures of general linguistic ability were related to the amount of nominal reference or non-standard pronouns used, although all correlations with nominal reference were negative. There was a significant negative correlation between the number of pronominal forms used by a child and the amount of nominal reference used at that time.

In order to ensure that the relationships in part (b) of Table 7 were real, the relationships between maternal and child variables at Session 2 were also investigated. Correlations between Group 1 mothers' use and avoidance of pronouns at Session 2 and their children's use of pronominal and nominal reference at that same session were compared to the correlations obtained between measures of maternal speech at Session 1 and the measures of child speech at Session 2. These results are presented in Table 8. Where a significant correlation exists between measures of maternal speech at Session 1 and child speech at Session 2, the same correlation with

Table 8. Correlations between measures of Group 1 mothers' and children's speech at Session 1 and 2

Child variables	Maternal variables					
	Pronoun frequency		Nominal objectification		Pronominal substitutions	
	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2
Pronoun frequency	-.24	.53	.17	.94**	-.33	.48
Nominal reference	-.90**	.97**	.85**	.28	-.06	.98**
Non-standard pronouns	-.61	.80*	.54	.77*	-.19	.80*
Pronominal forms	.29	.11	-.36	.95**	-.52	-.03

*p < .05 two-tailed

**p < .01 two-tailed

maternal speech at Session 2 is either non-significant or of the opposite sign value. This suggests that modifications that mothers make to the conventional pronominal system change as their children mature. Thus, correlations between these measures of maternal and child speech will not remain the same over time. The correlations that were found in part (b) of Table 7 must therefore be indicative of relationships between maternal speech at one time and children's speech at a later time.

Individual Variation

Table 9 presents the number of pronouns, nominal objectifications and substitutions for conventional pronouns used by the eight mothers at Session 1. This table also presents the nominal references and non-standard pronouns used by the eight children at the second session, and the growth in their pronominal systems from one session to the next. These data are arranged according to the child's MLU at Session 2: Child 1 has the lowest MLU in Group 1 at the second session and Child 4 has the highest MLU in Group 1 at the second session. Looking at the number of nominal objectifications used by mothers, three styles of mothers can be identified. One group, represented by Mothers 1, 2, 3, 6 and 8, use a small number of nominal objectifications; approximately one or two for every 100 utterances. A second group, represented by Mothers 5 and 7 of Group 2, use no nominal objectifications at all. The final mother, 4, seems to be in a group by herself. She uses approximately ten objectifications for every 100 utterances, and approximately half the number of pronouns used by the other seven mothers. Excerpts from this mother's speech often resembled the following: (where N = the child's name)

Table 9. Eight mothers' use and avoidance of pronouns at Session 1, and eight children's pronominal growth and pronominal ability at Session 2

Mothers	Session 1		
	Nominal objectification	Pronoun frequency	Pronominal substitutions
Group 1 (children at Stage I)			
1	1.17	34.51	2.51
2	.77	36.79	3.40
3	1.88	31.85	2.40
4	9.60	15.87	3.35
Mean	3.36	29.75	2.92
S.D.	4.19	9.47	.53
Group 2 (children at Stage II)			
5	0.00	27.11	2.22
6	1.01	30.02	3.04
7	0.00	29.97	1.74
8	1.09	27.54	2.36
Mean	.53	28.66	2.34
S.D.	.61	1.55	.54

Children	Growth between sessions		Session 2	
	Pronoun frequency	Pronominal forms	Nominal reference	Non-standard pronouns
Group 1			(at Stage II)	
1	6.61	2	5.73	.00
2	4.92	2	4.25	.00
3	22.78	5	6.60	.76
4	14.30	4	8.08	.62
Mean	12.15	3.25	6.16	.35
S.D.	8.18	1.50	1.60	.40
Group 2			(at Stage III)	
5	-2.06	0	3.70	8.64
6	4.44	3	1.94	.18
7	-6.54	-1	5.52	.41
8	4.83	6	3.37	.79
Mean	.17	2.00	3.63	2.51
S.D.	5.48	3.16	1.47	4.10

Mother: Yeah, where's Mommy's ring?
Is that Mommy's ring?

Child: Off?

Mother: Mommy take it off?
There you go.

Child: Ring

Mother: Now N has got a ring.
Hm?

Child: Ring

Yeah.
Where's Mommy's ring?

Child: What's that?

Mother: Is that Mommy's ring?

Child: Elbow

Mother: Mommy's elbow.
Where's N's elbow?

There was very little variation between mothers in the number of pronominal substitutions made. Each mother used approximately two to three instances of unification or pronominal objectification for every 100 utterances spoken. These two or three instances often appeared together in short routines like the following from Mother 2:

Mother: We're gonna change your pants
now?
Are we?
Oh!
How 'bout if we do that?

Because of the distribution of mothers within these three groups, it is difficult to ascertain whether these are in fact three separate styles of pronominal avoidance or whether two are styles and the third is the result of developmental adjustments. Within Group 1, the mothers of the children at Stage I at the first session, there are definitely two types of mothers. One type used a large number of nominal objectifications and relatively few pronouns and the other used nominal objectifications, but fairly infrequently. Within Group 2, the mothers with children at Stage II

at Session 1, there also appear to be two types. One used no nominal objectifications at all, and the other used a small number of nominal encodings. It may be that mothers who do use nominal objectifications when their children are at Stage II used a much larger number when their children were younger and less advanced linguistically. The mothers who use one or two nominal objectifications for every 100 utterances when their children are at Stage I may use no nominal substitutions when their children are at Stage II or III. This is not to suggest that there are sudden changes in the degree to which mothers avoid pronouns. The number of proper nouns and kinship terms used to replace pronouns is probably decreased slowly along with a gradual increase in the number of pronouns used, as the children develop linguistically. There must, however, be at least two kinds of mothers; those who use numerous nominal objectifications when their children are just beginning to acquire personal pronouns, and those who use a fairly small number. The results of this study suggest that the second style of pronominal avoidance is adopted by more mothers than the first.

As shown in Table 9, the pronominal system of Group 2 children increased very little over the period between sessions when compared with the children of Group 1. The children who were progressing from Stage I to Stage II made much larger gains in terms of their ability to use personal pronouns than the children who were progressing from Stage II to Stage III. The mean number of pronouns used by Group 1 children increased over the interval separating the sessions, while the mean decreased for the older group. At the second session all of the younger children used

at least two pronominal forms that they had not used at the earlier session. Two children from Group 2 showed no increase in the kinds of pronouns used at the two sessions.

These individual results clearly demonstrate the effect of mothers' use of nominal objectifications on their children's speech. Child 4, whose mother used the greatest number of nominal objectifications at the first session, referred to people nominally more often than any of the other children. If the amount of nominal references used by a child decreases solely with age and linguistic experience, then it would be expected that this child would have used fewer proper names and kinship terms than Children 1, 2 and 3. Child 2, whose mother used the fewest number of nominal objectifications at the initial session, used fewer nominal references than Children 1, 3 or 4. Children 5 and 7, whose mothers did not use any nominal objectifications at the initial session, did use nominal references at the second session. Thus it is not the case that children stop using nominal encodings earlier if their parents do not use nominal objectification.

It is interesting to note that Children 5 and 7 were the only ones to show negative growth in their pronominal systems from one session to the next. Child 5 used approximately one-third fewer pronouns per utterance at Session 2 than she had used at the earlier session, and the same number of pronominal forms. Child 7 used fewer overall pronouns per utterance and fewer pronominal forms at Session 2 than she had $3\frac{1}{2}$ months earlier. Each of the other six children in the study demonstrated growth, both in the number of pronouns used per utterance and in the number of pronominal types used. What this suggests is that a certain exposure to nominal reference is

necessary for children to continue expanding their pronominal systems. Perhaps children, even at this fairly advanced stage, do experience some confusion with pronoun referents, and a certain number of nominally encoded referents must be provided if they are to overcome this confusion.

One of the reasons for the lack of growth of Child 5's pronominal system was her confusion with third person reference. This child experienced a great deal of difficulty with pronouns referring to herself or others, particularly when looking at pictures. Her mother often tried to correct the child, but the correction always involved the use of a pronoun:

Mother: (referring to picture of the
child)
What've you got in your hand?

Child: Uh, he, he's got a
picture in there.

Mother: He?

Child: Yeah.

Mother: You say, 'I've got a picture
in my hand'.

Child: He, well he got a ...

Mother: That's you, though.

Child: He.

Mother: That's you.

As can be seen by the above, the proper gender distinction was often not observed when the child used third person reference. The confusion was increased when someone attempted to correct gender:

Child: (looking at picture of herself)
He's, he's eating her ...
His porridge.

(brother corrects her)

Child: No, eating her porridge.

Mother: You say, "I'm eating my porridge".

Child: Eating, eated my porridge.

Mother: Pretty close.

Her mother's refusal to use nominal reference may have helped created the confusion. When children first begin to acquire third person pronouns they may assume these may be used in the same manner as first and second person pronouns. If the mother responds to improperly used third person pronouns with a name or kinship term, then the child, who presumably already knows the relationship between names and first and second person reference, can make the connection between the third person and the normal methods of referring to the self and others. After a certain amount of experience with this kind of interchange the child will realize that third person pronouns do not function in the same way as first or second person. If the bridge between third person pronouns and the I-you system is not made for the child, then the pronouns may continue to be used incorrectly.

If this assumption is correct, then a child must have a fairly good knowledge of reference systems before third person pronouns can be experimented with. This may explain why two children from Group 1 did not use pronouns unconventionally. These two children had the shortest MLU's of the eight children and used the fewest pronouns at Session 2. Possibly neither child had learned enough about how pronouns operate to investigate whether third person pronouns could be used in self or second person reference.

Chapter 5. Discussion

In the Introduction, four questions were asked regarding mothers' avoidance of personal pronouns and the effects of this feature on the speech of young children. The findings of this study will be discussed in terms of these questions and comments will be added concerning the relationship between this research and previous studies of this kind.

The Systems of Reference

When conversing with their own children mothers use pronouns to refer to the children more often than they use pronouns to refer to themselves. As their children become older, mothers refer more to themselves as active participants and less to the child. Subjective case pronouns are used most frequently and objective case pronouns least frequently. In answer to the question regarding the extent of personal pronoun avoidance in mothers' speech, it was found that the most common type of substitution process was the use of kinship terms in place of personal pronouns. The amount of nominal reference used by mothers decreases as their children mature linguistically and show signs of being more adept at using pronouns. Other kinds of substitutions for conventional pronouns, such as the use of third person pronouns or we for first or second person pronouns, are used infrequently. Mothers with children at Stage I use these substitution processes as often as mothers with children at Stage II.

It was found that the reference systems used by young children change a great deal over relatively short periods of time. The most active development of children's pronominal systems occurs between Stages I and II, or from the time the child first begins to use pronouns until an MLU of

approximately 2.0 has been reached. Growth, in terms of number of new forms learned, and number of pronouns used, appears to slow down appreciably after this point. In the present study the interval between sessions was half as long for Group 2 dyads as it was for those of Group 1, which may explain the difference in growth rates. Both groups of children did, however, advance one stage as defined by Brown (1973). This means that the development of a child's pronominal system, in terms of frequency and kinds of pronouns used between Stages II and III is slower than the development which occurs between Stages I and II.

Children use pronouns more often to refer to themselves than they do to refer to their mothers. They use subjective pronouns most often and objective pronouns least often, just as their mothers do. As the children become older, they begin to talk less about themselves and more about others. In this way their use of individual pronouns begins to more closely resemble the pronouns used by their mothers. For example, the possessive form, my, was used by two year old children more often than the objective form of the pronoun you. Children six months older were using you more frequently than my, as mothers did. Children at Stage II use nominal reference approximately one-half as often as pronominal reference, while children at Stage III use nominal reference only about one-fifth as often as pronominal reference. Relatively few errors are made by children at these linguistic levels when using pronouns. The only identifiable type of substitution for conventional pronouns is the use of third person singular pronouns for first or second person pronouns. Children use objective case nominal reference more frequently than would be

predicted by their pronoun usage. Objective pronouns were used less often than subjectives or possessives, yet the most common type of nominal encoding replaced objective pronouns. This difference is due at least in part to the use of nominal reference in single-word utterances. When the child is asked a question concerning someone's identity or the instigator of a particular action, the response is often a single word. These single-word responses are almost invariably coded nominally. Since the corresponding pronouns would be me or you, this use of nominal reference is classified as an objective substitution. Thus the proportions of objective substitutions contain a large number of single-word utterances.

These data support many of the findings of previous studies. The first pronouns learned by these children were those predicted by Markey (1928), Morehead and Ingram (1973) and Strayer (1977). At the first session, the children at Stage I used only six of a possible twenty-eight pronominal forms. In terms of the number of children using a particular form, the first pronouns acquired were I and my, me and you (subjective) and you (objective), in that order. Pooling the data from the above three studies, this is the exact order that would be predicted. Markey also predicted that subjective pronouns would be learned before objectives or possessives, and it was found that both groups of children used subjective pronouns most frequently.

The conclusions of Tanz (1974) and Gruber (1969) are not substantiated by these results. Both authors claimed that children establish the objective case pronouns as their base forms because they are the most generalizable forms. If children are trying to avoid exceptions when they posit base forms, this study suggests they would probably have chosen the

subjective pronouns. These are the most frequent pronouns heard by children, the most frequent pronouns used by children and are acquired before the objective form.

As found by Strayer (1977, 1979) you was used more often than I by mothers, and the reverse was true of children. All eight mothers and the four children from Group 2, who were then in Stage III, used pronouns more often than names when referring to themselves or others. However, the younger children, like the children in Strayer's study, used nominal substitutions more frequently than pronouns when referring to their mothers.

The eight children in this study maintained the distinction between agents and objects made by the children in the Bloom, Lightbown and Hood study (1975). Any comparisons with the Bloom et al. study can be made only on the basis of the pronominal cases used, since pronoun occurrences were not coded semantically. Bloom et al. found that by an MLU of 2.5, Eric, Kathryn, Gia and Peter were encoding affected-objects most often nominally, and agents most often pronominally. In the present study, when the children from Group 2 had MLU's of approximately 2.5, they encoded the majority of subjective case referents, along with possessives, pronominally. The objective case referents were generally coded nominally. The younger children also used nominal reference more often than pronominal reference when using the objective case.

Relationships Between the Two Systems

Two major findings regarding the relationship between mothers' systems of reference and reference systems used by their children follow from the correlations between the maternal and child variables studied here. First, the development of a child's pronominal system appears to be controlled by

both his or her general linguistic ability and the system of reference used by the mother. There is a positive relationship between the number of pronouns and pronominal forms used by a child at one time and his or her linguistic level. These aspects of the child's developing pronominal system are controlled by the same mechanisms which guide other linguistic acquisitions. No relationship was found between the child's use of pronouns and the amount of pronominal reference used by a mother at an earlier date. However, children's pronominal systems were sensitive to pragmatic aspects of the mother's speech. For example, mothers talk less about their children as they get older, and consequently use fewer second person pronouns. Children learn to talk less about themselves and more about others as they get older, and therefore decrease the use of first person pronouns. But it is the mothers who make the first modification. It is in this way that the child's use of first and second person reference is intricately tied to the mother's use of first and second person reference. This finding was reported earlier by Strayer (1977, 1979). The proportion of subjective, objective and possessive case pronouns used by children are remarkably similar to those used by mothers at an earlier time, although the actual numbers are fewer. From this sensitivity to what mothers talk about and how they do it, the pronouns children learn to use most frequently are those that are most common in mothers' speech.

An alternative interpretation of these last findings is that the characteristics of children's pronominal systems change over time, not in response to maternal speech, but in response to the child's cognitive and social abilities. As the child becomes cognitively more sophisticated and has more experience with the outside world, it is inevitable that he or

she will begin to talk more about others and less about him or herself. The child's view of the world, and the rules of discourse may have some sort of effect upon the way that referents are coded as subjects, objects or possessives. While constraints such as these are obviously instrumental in every aspect of the child's growth, it is difficult to see how they would effect fine changes in their pronominal systems. The proportion of first and second and subjective, objective and possessive pronouns used by children are almost identical to the proportions used by mothers, and change as the mothers' do. It seems impossible that precise adjustments of this kind could be made in response to general cognitive or social forces.

The second major finding is that the child's use of proper nouns or kinship terms is directly related to mothers' use of nominal reference. The number of nominal encodings and pronominal substitutions used by mothers are negatively correlated with their children's linguistic level and ability to use pronouns. Mothers of relatively young children who have low MLU's and upper bounds and who seldom use pronouns use nominal objectification frequently, while mothers of older children use this form of reference less frequently. It was also found that a mother's use of nominal objectification is positively related to her child's use of nominal reference at a later date. This would not be particularly surprising if it was found that the linguistic levels of the eight children had all increased at the same rate. Thus it could be argued that the children who were using the greatest number of nominal references at the final sessions were doing so because linguistically, they were less mature. However, it was found that at Session 2 there were no significant relationships between

the linguistic level of a child and the use of nominal reference. The only possible interpretation is then that children continue to use a relatively large number of nominal references if their mothers use this kind of reference frequently.

Within these trends, it was found that there is a good deal of variation between the speech of individual mothers, and that children are sensitive to this variation. It is therefore not the case that all mothers avoid conventional pronouns to the same extent. Three distinct styles of pronominal avoidance were found in these data, of which one is possibly only a developmental phenomenon. The first style requires the use of a large number of nominal encodings. When a mother adopts this style, it is immediately obvious that she is addressing a child. The use of nominal reference is one of the most salient aspects of English baby talk and when used frequently it makes the special register highly recognizable. When a mother uses nominal objectifications in large numbers, the number of pronouns addressed to her child will almost certainly be decreased. The majority of mothers adopt a second style, where nominal objectifications are used in a fairly small proportion. Mothers who choose this style do not appear to use fewer pronouns than would be used normally. A third style is to simply not use nominal objectifications. As was previously mentioned, it was impossible to determine if the two mothers using no nominal reference had a distinct style of their own, or if they had once used a small number of nominal objectifications and had since ceased. All mothers will eventually stop using nouns to replace pronouns when speaking to their children, but the question is whether or not they stop when their children are still this young. From the children's data it would appear

it would have been more helpful to continue using a small number of nominal objectifications. Both of the children whose mothers used no nominal reference had come to a halt in pronominal growth, somewhere between Stages II and III. At least one of the children was also experiencing some confusion with pronoun referents. Children seem to need to have referents constantly reinforced for them. The use of nouns is one way that mothers can do this for the child. It may be that there is an optimum level of pronoun avoidance, which was achieved by the majority of mothers in this study. While it does seem to be the case that all children initially use nouns in contexts where adults would use pronouns, the child whose mother used the largest number of nominal objectifications was slower to switch to pronominal encoding than the other children. This child might have been using a much higher proportion of pronouns had he used fewer nominally encoded references.

Many of the previous reports that children vary to a large degree in the amount of nominal reference used may be explained by differences in the input language. Even findings such as those reported by Bloom, Lightbown and Hood (1975) could be explained by differences in maternal input. It was found that with an MLU of less than 2.0, the two girls in their study used nominal encodings of agent, actor and affected-objects more than 60 percent of the time. Boys used nominal references much less often. In the present study it was unfortunately not possible to study differences between boys and girls because the MLU's of the children were too large and because there was an imbalance of boys to girls. It might have been the case that the mothers of girls initially used higher proportions of nominal objectifications than mothers of boys.

Concluding Remarks

The findings of this study are consistent with the proposal by Newport, Gleitman and Gleitman (1977) that language-specific aspects of children's speech may be influenced by the mothers' language. The means of referring to speaker, hearer or persons talked about differ greatly from language to language. For example, Horschheimer (1953) found 21 different deictic systems of person in data from 71 languages. Even the use of nominal reference, which has been reported to occur in a number of languages, is manifested in different ways and at different times in the speech communities of the world. Obviously both aspects of maternal speech which have an effect fit the child's listening biases at that time. Brown's Stage I and II (Brown 1973) are defined respectively as the stage when semantic roles and grammatical relations are acquired and the stage when grammatical morphemes are learned and meanings are modulated. At both of these stages children are learning to produce and manipulate pronouns. At Stage I several of the pronouns will be learned, but it will not be until Stage II that full semantic and grammatical control of pronouns is achieved. One of the reasons that children's awareness of pronouns may be heightened is that mothers do sometimes switch from pronominal to nominal encoding. This may make the positions occupied by reference terms more perceptually salient and therefore aid the child's acquisition process.

A second interpretation of these results is possible. Newport, Gleitman and Gleitman (1977) account for the fact that some maternal speech characteristics have an effect on children's speech and others do not by showing that there are two different types of speech characteristics being acquired by the child. Another possible explanation is that the differences

are in the maternal input. One of the major findings of the present study concerns the variation between mothers in their use of nominal objectifications. Adults are often 'deaf' to those aspects of language that are shared by all speakers, and are only able to tune into the speech habits that differ between speakers. Children may also be hindered in their perception of more universal characteristics of the input language. Perhaps they can only regulate those aspects of their speech that correspond to characteristics of maternal speech that vary from speaker to speaker.

Two final comments regarding the limitations of this study are necessary. Even though, for the purposes of simplicity, it has been assumed that the input language heard by the child consists solely of the mother's language, it is recognized that this is not true in reality. Fathers, day-care workers, siblings and friends also provide children with a model language, and the influence of these sources is probably growing greater every day. It does, however, seem to be a fact that mothers are the one source of input that remains relatively consistent across families. Within families, it may even be the case that the speech modifications made for the child are adopted by all family members. This would be another interesting area for research. And finally, although I have tried to be as careful as possible in attributing cause and effect to the relationships uncovered here, I am certain that in many places my research biases have shown through. My interpretations are after all only interpretations, although it is hoped that with the research design used, they are the most plausible explanations of the data.

Bibliography

- Avram, A. 1967. "De la langue qu'on parle aux enfants roumains".
To Honor Roman Jakobson, Vol. I. The Hague: Mouton.
- Baran, J., Zlatin Laufer, M., and Daniloff, M. 1977. "Phonological contrastivity in conversation: A comparative study of voice onset time". Journal of Phonetics 5, 339-350.
- Bellugi, U. 1971. "Simplification in children's language". In R. Huxley and E. Ingram (eds.) Language Acquisition: Models and Methods. London: Academic Press, 95-119.
- Benveniste, E. 1971. Problems in General Linguistics, translated by M.E. Meek. Coral Gables, Florida: University of Miami Press.
- Bloom, L., Lightbown, P., and Hood, L. 1975. Structure and Variation in Child Language. Monographs of the Society for Research in Child Development, 40, No. 2 (Serial No. 160).
- Blount, B., and Padgug, E.J. 1977. "Prosodic, paralinguistic and interactional features in parent-child speech: English and Spanish". Journal of Child Language 4, 67-86.
- Broen, R. 1972. The Verbal Environment of the Language-learning Child. Monographs of the Society for Research in Child Development. No. 17.
- Brown, R. 1973. A First Language: The Early Stages. Cambridge, Mass.: Harvard University Press.
- Brown, R. 1977. Introduction to C. Snow and C. Ferguson (eds.) Talking to Children: Language Input and Acquisition. Cambridge: Cambridge University Press.
- Bruner, J.S. 1974/5. "From communication to language: a psychological perspective". Cognition 3, 255-87.
- Chomsky, N. 1968. Language and Mind. New York: Harcourt Brace Jovanovich, Inc.
- Chomsky, N. 1977. "Conditions of rules of grammar". In R.W. Cole (ed.) Current Issues in Linguistic Theory. Bloomington: Indiana University Press, 3-50.
- Clark, E.V. 1978. "From gesture to word: on the natural history of deixis in language acquisition". In J.S. Bruner and A. Garton (eds.) Human Growth and Development: Wolfson College Lectures 1976. Oxford: Oxford University Press, 85-121.

- Cooley, C.H. 1908. "A study of the early use of self-words by a child". Psychological Review. 15, 339-57.
- Cross, T. 1975. "Some relationships between motherese and linguistic level in accelerated children". Papers and Reports on Child Language Development. 10, 117-135.
- Cross, T. 1977. "Mothers' speech adjustments: the contribution of selected child listener variables". In C. Snow and C. Ferguson (eds.) Talking to Children: Language Input and Acquisition. Cambridge: Cambridge University Press, 151-188.
- Davis, E.A. 1930. "Developmental changes in the distribution of parts of speech". Child Development. 9, 309-317.
- Drach, K. 1969. "The language of the parent: a pilot study". Working Paper No. 14. Berkeley: Language Behaviour Research Laboratory, University of California.
- Ferguson, C. 1964. "Baby talk in six languages". American Anthropologist 66, 103-114.
- Ferguson, C. 1977. "Baby talk as a simplified register". In C. Snow and C. Ferguson (eds.) Talking to Children: Language Input and Acquisition. Cambridge: Cambridge University Press, 219-236.
- Fischer, J.L. 1970. "Linguistic socialization: Japan and the United States". In R. Hill and R. Konig (eds.) Families in East and West: Socialization Process and Kinship Terms. The Hague: Mouton, 107-119.
- Forschheimer, P. 1953. The Category of Person in Language. Berlin: W. de Gruyter.
- Fraser, C., and Roberts, N. 1975. "Mothers' speech to children at four different ages". Journal of Psycholinguistic Research. 4, 9-16.
- Furrow, D., Nelson, Katherine and Benedict, H. 1979. "Mothers' speech to children and syntactic development: some simple relationships". Journal of Child Language. 6, 423-442.
- Garnica, O. 1977. "Some prosodic and paralinguistic features of speech to young children". In C. Snow and C. Ferguson (eds.). Talking to Children: Language Input and Acquisition. Cambridge: Cambridge University Press, 63-88.
- Gesell, A., and Armatruda, C.E. 1947. Developmental Diagnosis: Normal and Abnormal Development. London: Hamish Hameton Medical Books.

- Hatch, E. 1961. "Pronoun case preference of young children". Four Experimental Studies in Syntax of Young Children. Los Angeles: Southwest Regional Laboratory for Educational Research and Development. TR 11.
- Huxley, R. 1970. "The development of the correct use of subject personal pronouns in two children". In G.B. Flores d'Arcais and W.J.H. Levelt (eds.). Advances in Psycholinguistics. Amsterdam: North-Holland Publishing Co., 141-165.
- Ingram, D., and Webster, B. 1972. "The comprehension of the anaphoric pronouns 'He', 'She', 'Him', 'Her' in normal and linguistically deviant children". Papers and Reports in Child Language Development 4, 55-75.
- Jespersen, O. 1964. Language, its Nature, Development and Origin. New York: W.W. Norton & Co. Inc.
- Jocić, M. 1978. "Types of adaptations in adult speech when communicating with a child". In N. Waterson and C. Snow (eds.). The Development of Communication. New York: John Wiley, 159-171.
- Kelkar, A. 1964. "Marathi baby talk". Word. 20, 40-54.
- Lieven, E. 1978a. "Conversations between mothers and young children: individual differences and their possible implications for the study of language learning". In N. Waterson and C. Snow (eds.). The Development of Communication. New York: John Wiley, 173-187.
- Lieven, E. 1978b. "Turn-taking and pragmatics: two issues in early child language". In R. Campbell and R. Smith (eds.). Recent Advances in the Psychology of Language. New York: Plenum Press, 215-236.
- McCarthy, D.A. 1954. "Language development in children". In L. Carmichael (ed.). Manual of Child Psychology. New York: John Wiley, 492-630.
- Markey, J.F. 1928. The Symbolic Process and its Integration in Children: A Study in Social Psychology. New York: Harcourt Brace and Company.
- Menyuk, P. 1969. Sentences Children Use. Cambridge, Mass.: MIT Press.
- Morehead, D., and Ingram, D. 1973. "The development of base syntax in normal and linguistically deviant children". Journal of Speech and Hearing Research. 16, 330-352.
- Nelson, Katherine. 1973. Structure and Strategy in Learning to Talk. Monographs of the Society for Research in Child Development. 149.

- Newport, E. 1977. "Motherese: the speech of mothers to young children". In N. Castellan, D. D. Pisoni and G. Potts (eds.). Cognitive Theory, Vol. 2. Hillsdale, N.J.: Erlbaum, 177-217.
- Newport, E., Gleitman, H., and Gleitman, L. 1977. "Mother, I'd rather do it myself: some effects and non-effects of maternal speech style". In C. Snow and C. Ferguson (eds.). Talking to children: Language Input and Acquisition. Cambridge, Cambridge University Press, 109-150.
- Pfuderer, C. 1969. "Some suggestions for a syntactic characterization of baby talk style". Working Paper No. 14. Berkeley: Language Behaviour Research Laboratory, University of California.
- Phillips, J. 1973. "Syntax and vocabulary of mothers' speech to young children: age and sex comparisons". Child Development. 44, 182-185.
- Remick, H. 1976. "Maternal speech to children during language acquisition". In W. Von Raffler-Engel and Y. Lebrun (eds.). Baby Talk and Infant Speech. Lisse, Netherlands: Swet & Zeitlinger, 240-245.
- Ringler, N. 1978. "A longitudinal study of mothers' language". In N. Waterson and C. Snow (eds.). The Development of Communication. New York: John Wiley, 151-158.
- Scarry, R. 1963. Best Word Book Ever. New York: Golden Press.
- Shipley, E.F., and Shipley, T.E. 1969. "Quaker children's use of Thee: a relational analysis". Journal of Verbal Learning and Verbal Behaviour. 8, 112-117.
- Slobin, D.I. 1973. "Cognitive prerequisites for the acquisition of grammar". In C.A. Ferguson and D.I. Slobin (eds.). Studies of Child Language Development. New York: Holt, Rinehart & Winston.
- Snow, C. 1972. "Mothers' speech to children learning language". Child Development. 43, 549-565.
- Snow, C. 1977. "Mothers speech research: from input to interaction". In C. Snow and C. Ferguson (eds.). Talking to Children: Language Input and Acquisition. Cambridge, Cambridge University Press, 109-150.
- Strayer, J. 1977. "How You gets where I was: the development of personal reference in the language of young children". Paper presented at the meeting of the Canadian Psychological Association, Vancouver, B.C., June, 1977.
- Strayer, J. 1979. "How You gets where I was: the acquisition of personal pronouns in children's speech". Unpublished paper.
- Sully, J. 1895. Studies of Childhood. London: Longmans, Green and Co.

- Tanz, C. 1974. "Cognitive principles underlying children's errors in pronominal case marking". Journal of Child Language. 1, 271-276.
- VanderGeest, T. 1975. Some Aspects of Communicative and their Implications for Language Acquisition. Assen, The Netherlands: Koninklijke Van Gorcum and Comp. B.V.
- VanKleeck, A., and Carpenter, R. "The effects of children's language comprehension level on adult's child-directed talk". Unpublished paper, University of Washington, 1979.
- Wales, R. 1979. "Deixis". In P. Fletcher and M. Garman (eds.). Language Acquisition: Studies in First Language Development. Cambridge: Cambridge University Press, 241-260.
- Wills, D. 1977. "Participant deixis in English and baby talk". In C. Snow and C. Ferguson (eds.). Talking to Children: Language Input and Acquisition. Cambridge: Cambridge University Press, 271-296.