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SEX-RELATED DIFFERENCES IN THE LANGUAGE OF CHILDREN

by

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ABSTRACT

This study presents an investigation of sex-related differences in the language of children from four to ten years of age with a view to finding whether children can identify the sex of another child of similar age or younger using a tape-recorded conversation as stimulus. Both perception on the part of children of such differences in the language of other children and production of sex-appropriate features in their own speech are considered. A comparison is made between the ability of adults and children at making such distinctions.

Evidence indicates that children are able, generally, to recognize the sex of other children from tape-recorded speech. Results of the experiment failed to indicate the age of onset of perception and production of sex-appropriate language. An increase in both capabilities appears to be associated with an increase in age, with a possible spurt around age seven and adult competence reached around age ten. There is some confirmation for the notion that girls have better verbal ability. The data offer no evidence of a correlation between the child's ability to perceive sex-appropriate speech and his own production of such speech.

Results of the present study are in accord with earlier studies which show that adults can identify sex on the basis of children's speech and that adults recognize boys more readily than girls.

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CHAPTER I

Introduction

1.1 Introduction

One of the significant differentiating characteristics of adult male and female members of our society is speech or language use. There seems to be an intuitive tendency to speak "like a man" or "like a woman". Whether 'men's language' and 'women's language' are actually different languages, higher and lower forms of the same language, or different dialects (genderlects) of the same language has been the concern of linguists such as Jespersen, Labov, Lakoff and many others whose works furnish the background for this study of children's language. One area of agreement is constant throughout the various studies of sex as a linguistic variable, and that is that there must be a point at which a child begins to acquire the linguistic traits, whether these variations be lexical, intonational or grammatical, which will characterize his or her speech as that of male or female.

Before we can address the problem of acquisition of sex-appropriate language, we must examine the question of its existence, its characteristics and its role in communication. Then we can turn our attention to this special facet of language acquisition. Once we have identified something of what it is children have to learn about speaking in a manner appropriate to their gender, then we can investigate what relation there is, if any, to language acquisition in general.

The question of sex-related language differences is not one exclusively of interest to the study of Linguistics. Because the acquisition of language involves the brain as well as the vocal organs, psychological and psycholinguistic aspects have to be taken into consideration along with physiological factors such as innate mechanisms and maturation. In addition, there is a sociolinguistic factor since speaking in a sexually-appropriate manner is so much a product of context and situation. Also, the unspoken rules of appropriate speech vary from one linguistic community to another.

Earlier studies concerning language differences in children have either focused upon adult reaction to children's speech, with a view to proving whether adults can identify the sex of children from their speech, or, in other cases, focused upon the reaction of children to adult speech in order to test whether children are sensitive to what would be considered appropriate language for male or female adults.

The present study is mainly concerned with children listening and reacting to the speech of other children. The study presents an investigation of the speech of children from four to ten years of age and is concerned with differences in the language of males and females and, in particular, with the child's developing ability not only to use language in a manner appropriate to his or her sex, but also to recognize such characteristic language use in the speech of other children.

In addition to the basic question of whether children ten and under can reliably recognize the sex of another child of the same age or younger with only a tape-recorded conversation as stimulus, several other questions arise, such as the age of onset of this sort of language awareness, the age at which adult competence in making such judgements is reached, whether girls or boys are better at making such distinctions, and whether there is any relationship between a child's own language use and his or her ability to distinguish sex in others.

We could say that this study represents an attempt to design and evaluate a preliminary model for an experiment which would continue on from previous studies exploring male and female language and its acquisition, to focus upon another facet, that of the development of sex-related differences in the language of children and the children's own awareness of such differences in the speech of other children. In seeking to design such a model, a number of factors were taken into consideration concerning the means of achieving satisfactory results under existing conditions. As part of the evaluation of the model, both the success and the inadequacies of the model will be explored along with the results of the experiment itself. The combination will, it is hoped, give a three-faceted outlook for further study by furnishing suggestions not only for a better experimental design but also suggestions for further possible areas of interest in sex-related differences in the language of children.

CHAPTER II

2.1 Review of Literature

This chapter presents a brief review of some of the literature which touches upon questions pertinent to the topic of differences in male and female language, with particular emphasis upon the language of children. Some of the areas of concern include the question of the existence of separate languages for adult males and females, the notion of 'women's register' and the superiority of male language over female, and the characteristics of language use for each sex, including both learned and biologically determined characteristics.

Next to be considered is the acquisition of sex-appropriate language. This process involves both physiobiological and socio-linguistic factors which will be discussed briefly as a background for the present study.

The final section of the review of literature outlines previous experiments dealing with sex differences in the language of children and attempts to situate the present study within the scope of on-going research.

2.1.1. Male and Female Languages: Do they exist?

The question of the existence of separate languages for male and female is one which has received considerable attention over the years.

The assumption that there is a difference between the speech of women and men is considered to be implicit in the language and attitudes of many adults. The work of Frank (1975) traces the history of research on sex as a linguistic variable and questions whether these stereotypes conform to reality or whether they correspond to a sort of linguistic mythology.

Frank feels that in order to study the correlations between stereotypes and actual language behaviour, it is necessary first to determine just what beliefs are held about the way people speak, as well as about the way they should speak. Myths are well established which are closely related to stereotypes and there exists a long tradition of typical attitudes toward perceived differences and popular notions of how men and women should speak.

It is inevitable, according to Frank, that any discussion of sex-linked differences in speech gives rise to the question of whether such differences are biologically determined or learned. This dichotomy will be further explored in our discussion of the characteristics of sex-appropriate language which follows. Frank concludes that the myth of women's language is very much alive but that not enough is known yet for one to be able to describe accurately the features of women's language but that "... sex has been shown to be a variable which should no longer be ignored in sociolinguistic work." (p. 57)

2.1.2. Characteristics of Sex-appropriate Language

When we examine the literature, we find that the characteristics attributed to sex-typical language can be divided into those which are learned and those which are biologically determined, but that the division is not always easy or clear-cut. Let us first consider the sort of speech habits which are apparently learned during the development of eventual adult competence in language use.

2.1.2.1. Learned Characteristics

In comparing the speech of male and female adults, linguistic studies have shown that it is characteristic of women to "... use more of the newer linguistic forms in their casual speech and correct more sharply towards the standard in their formal speech." (Labov, 1966) Females tend to be closer to the norms in grammar and pronunciation in cases such as the non-standard pronunciation of -ing. (Shuy 1969; Kramer 1974 quoted in Frank, 1975; Trudgill, 1972, quoted in Crosby and Nyquist, 1977).

Female speech exhibits increased use of prestigious forms. (McConnell-Ginet, 1975) Certain words such as 'mauve' are used almost solely by females, who also tend to use 'empty adjectives' such as 'divine' and 'cute', and modifiers or 'hedges' such as 'sort of', 'kind of' and 'I guess'. (Crosby and Nyquist, 1977). Among the differences observed in empirical research there seem to be differences, also, in the topics chosen by male and female speakers. (McConnell-Ginet, 1975).

Many of the characteristics imputed to women's language are based, not upon clinical observation, but upon musings and impressions such as those of Jespersen (1922) who notes "... women's supposed preference for refined and (in certain spheres) veiled and indirect expressions." Women's vocabulary is described as less extensive and more central than men's and women are inclined to use hyperbole and adverbs of intensity such as 'terribly' and 'so'. (Jespersen, 1922).

In one of the earliest treatments of the subject of sex differences, Jespersen mentions women's "... instinctive shrinking from coarse and gross expressions." (1922, quoted in Frank, 1975). Later studies reaffirm the stereotype of this 'shrinking' tendency on the part of women. Key (1975) refers to "... the tentativeness and non-assertiveness of female speech." (quoted in Frank, 1975).

In keeping with the tentative, formal and polite nature of their speech is women's use of tag questions and question intonation with declarative statements. These aspects are focused upon by Lakoff whose work has been similarly criticized for its lack of empirical basis. Lakoff (1975) feels that these characteristics indicate that the language of men "... is assertive, adult, and direct whereas women's language, suitable for keeping them 'in their place', is immature, hyperformal or hyper-polite, and non-assertive." (quoted in Crosby and Nyquist, 1977). The question of superiority or dominance of either male or female language over the other is of no import in this study but the notion is so prevalent throughout the literature that one feels compelled to mention it in passing.

Intonation, "the tunes to which we set the text of our talk" is seen by McConnell-Ginet (1975) as possibly the chief linguistic expression in American English of (relative) femininity and masculinity. She feels that the fact that speech melodies are acquired early yet are only partly "conventionalized" is probably partly responsible for their function in linguistic stereotyping of the sexes.

We can see that there is a good deal of overlap between learned characteristics and those which are biologically determined, just as there is overlap between male and female language.

Many aspects of American English are superficially similar in the speech of men and women. Syntactic constructions, for example, and pronunciation do not always vary as a function of the sex of the speaker. Many studies have found women's and men's speech identical with respect to formal features. There seem to be few generalizations about female/male speech that hold across ethnic, economic and educational groups. This does not mean, in Ginet's view, that sex is not an important socio-linguistic variable but only that it interacts with other variables. (1975) Some of the important variables involved in sex-based differences in language are those biologically determined ones which are discussed in the next section.

2.1.2.2. Biologically Determined Characteristics

The features of pitch, voice quality, intonation and perhaps verbal ability seem to be what Frank (1975) calls "the most likely candidates" for biologically determined traits. Studies of acoustical characteristics such as those of Mattingly (1966) and Coleman (1971) (quoted in Frank 1975) indicate that although women generally do have higher-pitched voices than men, the differences between male and female voices are quite complex, sharper than could be explained by differences in vocal tract size alone, and that "... the perception of vocal pitch as the distinguishing cue for female and male voices may depend on a combination of acoustic cues other than fundamental frequency, including vowel formant frequencies. (Frank, 1975 p. 51). It is suggested that differences may be due to "a linguistic convention" and that "children could be learning culturally determined patterns that are viewed as appropriate for each sex." (p 51)

Similarly, characteristics which are classified as paralinguistic (significant, non-linguistic noises made with the vocal tract) may be seen as stereotypical of male or female speech -- 'whining', for example, or 'nasal' or 'breathy' speech. Intonational features may also furnish a basis for sex-typing. McConnell-Ginet (1975) states that "Intonation hovers on some border between language and paralanguage, between arbitrary, discretely articulated signs and conventionalized but non-arbitrary, continuously varying gestures." (1975, p 52)

It was noted earlier that there is some overlap between language differences that are learned and those which are anatomical in nature. Ginet suggests that the nature and extent of these differences are determined by cultural convention, that what is involved is "... a physiological difference over which a social stereotype is laid." (1975, p 547).

While verbal ability may be, as Frank suggests, biologically determined, such ability cannot be termed a characteristic of language. The importance of the factor of verbal ability will be examined in greater depth in the discussion of language acquisition which follows.

2.1.3. The Acquisition of Genderlect

As part of the on-going process of language development, a child learns not only to communicate with the world around him but to do it in a manner appropriate to his gender. How, and in what stages this component of the language acquisition process takes place, are two of the eventual questions to be answered in exploration of children's language.

In focusing upon the growing interest in language acquisition and communicative competence, Edelsky (1976) suggests that there should be research combining the two, research that deals with the acquisition by children of the sociolinguistic rules shared by adult members of a speech community. The assumption is that communicative competence has to be acquired, that children are not born knowing sociolinguistic rules.

The question then arises whether such rules are acquired in a similar fashion to other linguistic rules. Is there, for example, a gradual approximation to adult norms as in the case of syntactic rules? And at what point in the child's maturational process is this acquisition task accomplished?

Haas (1977) borrows Kramer's term 'genderlect' to refer to sex differences in language. These variations in speech which are associated with gender "... must be acquired at some point -- probably during childhood." (p 101) Lakoff suggests that this probably occurs before age ten (quoted in Haas 77).

Some of the characteristic differences in children's language which have been observed include the finding that boys talked more, were more aggressive verbally, referred more to space, quantity, physical movement, self and value judgement. Girls appeared shy, and the only category they referred to more than boys was the 'female role'. (Sause, 1975, quoted in Haas, 1977) Haas also reports differences in verbosity, adjective use, articulation and pronunciation, and concludes that there is some evidence for an increase in gender-associated speech in girls between the ages of four and twelve. Boys by age four already seemed to use male associated spoken language.

There are four areas in which sex differences have consistently been found: males appear to be more aggressive than females, to excel in visual-spatial ability, and to excel in mathematics, females excel in verbal ability. (Maccoby and Jacklin, 1974 quoted in Gleason, 1979). These findings indicate that girls begin to talk earlier than boys, that they begin to use sentences earlier, and that they are also advanced in terms of various other measures of articulation and fluency. In spite of these conclusions, it is emphasized that the performance curves for both sexes are very similar, and either sex has many individuals who display the whole range of human potential. (Gleason, 1979).

We have discussed sex-related differences in the language of children and adults and something of the stereotypical beliefs about these differences that are held by adult speakers. In order to learn something about the process by which children develop into appropriately-speaking adults, we should perhaps focus upon the factors that contribute to this development. These factors can be roughly divided into two categories, the physiological and the sociolinguistic.

2.1.3.1. Physiological Factors

One of the most frequently mentioned sex differences in language is the superiority of the female in verbal ability. (Bardwich 1971; Maccoby and Jacklin, 1974; Shuman 1971; quoted in Cherry and Lewis, 1977). Some criticisms of the notion will be acknowledged later, but first let us examine the opinions of authors who seek to account for the phenomenon on a biological basis.

Anatomical differences such as vocal tract size were touched upon briefly in an earlier section and it was noted that sex-based differences in language could not be attributed entirely to physical differences. Also, it is superfluous to mention the voice change which boys experience at puberty. However there is evidence of differences in cerebral organization which may have a fundamental impact upon the differential acquisition of language by males and females.

Recent psychobiological research indicates that many of the differences in brain function between the sexes are innate, biologically determined, and relatively resistant to change through the influence of culture. From birth, female infants are more sensitive to sounds, particularly their mother's voice; female babies orient more to tones and are more startled by loud noises; their enhanced hearing persists throughout life with females experiencing a fall off in hearing at a much later age than males; female infants also speak sooner, possess larger vocabulary and rarely demonstrate speech defects (stuttering, for instance, occurs almost exclusively among boys; girls can also sing in tune at an earlier age). (Restak, 1979).

Restak suggests that if we think of the muscles of the pharynx and larynx as muscles of fine control (those in which girls excel) then it should come as no surprise that girls exceed boys in language and linguistic abilities. Other trends indicate that this early linguistic

bias prevails throughout life -- girls read sooner, learn foreign languages easier and, as a result, are more likely to enter occupations involving language mastery.

In experiments measuring brain lateralization, sex, handedness and head position for writing, females performed best in tasks performed by the left hemisphere, while males did best in right hemisphere tasks. In general, the left hemisphere is seen as verbal and analytic, processing items one at a time, while the right hemisphere is more holistic and spatial, processing items simultaneously (Bryden, 1979). Verbal thought serves to activate the left hemisphere, thus producing orienting movements toward the right, while spatial activity has the opposite effect (Kinsbourne, 1973, quoted in Bryden, 1979). Bryden reports other studies which suggest that sex-related differences may interact with other variables, such as handedness. Observations show that males do better than females on tests of spatial ability, and that the incidence of left handedness is more prevalent in males.

Bryden reports conflicting evidence in studies concerning cerebral asymmetry in children. He concludes that despite the intense interest in cerebral lateralization in recent years, there have been relatively few studies on normal subjects which have examined the possibility of there being sex-related differences in cerebral representation. What studies there are can be criticized for poor procedures, lack of replicability,

or small samples. He feels that it is difficult to see any striking pattern emerging.

If such sex-related differences do exist, Bryden suggests three possible explanations of how they may arise. First, there may be a real biological difference in cerebral organization between males and females, so that the cognitive and perceptual functions are more likely to be bilaterally represented in females than in males. Second, the observed differences may arise from the test procedures employed. Females may use different strategies to perform behavioural tests that are used to measure cerebral lateralization. Third, it is possible that the sex-related differences result from an interaction of strategy effects with cerebral organization. That is, Bryden suggests, perhaps females pursue different strategies for dealing with the tests than do males, because their cerebral organization is different.

Before a definitive answer to the question of sex-related differences can be found, Bryden feels that it will be necessary not only to investigate the relevance of biological variables such as maturation rate, physical androgyny, and hormonal levels, but also to find experiments that have careful control over the subject's freedom to bias attention and to develop idiosyncratic strategies (Bryden, 1979).

While acknowledging the differences in cerebral organization, Gleason (1979) suggests that innate constitutional factors, not originally related to language, could exert some influence on language development.

Gleason feels that the earlier right ear advantage for speech sounds observed by Kimura (1967) may indicate earlier left hemisphere specialization for language in girls, or that this specialization may be a result, rather than a cause --- that learning to speak earlier (for whatever reason) may lead to lateralization of speech functions.

Witelson and Pallie (1973, quoted in Gleason, 1979) report measurable differences in the brains of neonates. Females had significantly larger left hemisphere structures than right whereas males showed no significant difference. "In other words, newborn infants, whose brains have not had the opportunity to be affected by language experience, already have asymmetrical brains, with extra tissue in what will be the language area. This tissue is observable in females but not in males during the first three weeks after birth." (Gleason, 1979 p 153).

As for maturational differences, Gleason notes that girls continue to do well as foreign language students even at a time when their earlier maturation might be expected to work to their disadvantage.

Other language differences include language-related disabilities like stuttering, dyslexia and developmental aphasia which occur in males much more frequently, in a ratio as high as eight to one. Males, too, are more vulnerable to neurological insult. It is suggested that language is more broadly represented in the female brain and hence more resistant to disturbance. It takes much more brain damage to produce aphasia in females than in males. (McGlone, 1975). It is possible, therefore, that

males may be more strongly lateralized for language, while females may have some language areas in both hemispheres (Gleason, 1979).

A further factor of possible importance in our study of language differences in children, is the involvement of brain mechanisms and maturation in the language acquisition process. The topic is somewhat beyond the scope of this paper, but one work which may have implications for this study is that of Patel (1977) which is concerned with the relationship between the parieto-temporo-occipital junction, semantic aphasia, and cognitive and language development around the seventh year. Given the evidence concerning the continuing acquisition of phonology, syntax and semantics, a topic investigated at length by Palermo and Malfese (1971), it seems germane to suggest that, along with other later language acquisition factors, there might be a sort of linguistic growth spurt around the age of seven, which is manifested not only in these aspects but also in sex-oriented linguistic traits and the capability for decoding the signals embedded in those traits. It seems possible that there may be a sociolinguistic, sex-linked aspect to crossing what Patel refers to as "... the developmental threshold of the seventh year." (1977, p 38).

Thus we see that there are a number of physiological factors which are involved in the language acquisition and linguistic capability of children. Differences in language do exist whether in the distribution of abilities or in different kinds of linguistic performance but these

differences are not all based upon anatomical differences and the physiological factors we have just been discussing. While some sex differences may be innate in respect to both temperament and to the neuroanatomical structure associated with language, other such differences are sociolinguistic in nature. (Gleason, 1979).

2.1.3.2. Sociolinguistic Factors

Language development has been described as "... part of the socialization process that characterizes the child's transactions with others." (Cherry and Lewis, 1977, p. 193). Children, as they are growing up, must learn not only to act like boys and girls, men and women, but to talk like them as well.

It is suggested that the differential socialization of female and male children might explain sex differences in behaviour and thus might have implications for the language development of children. (Cherry and Lewis, 1977). Some differences in adult-child interactional style will be discussed more fully in the section devoted to preceding studies.

Other sociolinguistic factors which will be considered include awareness of sex role distinctions in language and cultural expectations (Haas, 1977). The importance of ritualized situations and context have been noted by Crosby and Nyquist (1977) who find that in an interaction representing a well-established ritual, sex differences are diminished. Similarly, differences between male and female speech appear to be, to some degree, context specific, in some contexts exaggerated, in others

attenuated. These writers note also the importance of the role of the speaker, whether that speaker be child, adult, parent, teacher, peer and so on.

The quality of linguistic input a child receives is an important factor. Gleason; 1979, feels that parental language has many of the features of a teaching language which at all levels, phonological, morphological and syntactic, helps the child to arrive at the rules. Observations show that parental language changes over time in response to both parents' expectations and to feedback from the child.

Thus the interactive nature of language becomes increasingly apparent. The sort of environmental forces which may facilitate the development of sex typical linguistic traits might include the set of sex role expectation on the part of the parents, their beliefs about the language capabilities of their children, and the interrelationship of the sex of the child and the sex of the parent. Rubin et al (1974, quoted in Gleason, 1979) offer the comment that it is the fathers who are the primary agents for maintaining and enforcing sex role distinctions. This comment was based upon the observation that differences in treatment of the sexes were much more pronounced in the fathers' speech.

In considering the differences in the language of children, we are cautioned that we must acknowledge that those differences result not solely from environmental forces, like the pressure of sex role socialization, or from inborn differences like different patterns of neuroanatomical development, but rather that "... sex differences arise out of

a complex interaction between children with particular endowments, and parents, with all their expectations, special ways of speaking, and patterns of sensitivity." (Gleason, 1979 p 155).

2.1.4. Preceding Studies

A number of studies have explored the question of sex related differences in the language of children. These studies have mainly focused either upon children listening and reacting to the language of adults or upon adults listening and reacting to the language of children. The identification of characteristics of children's language and the sociolinguistic factors involved is based for the most part upon studies such as the following:

2.1.4.1. Children Listening to Adults

The particular aspect of communicative competence acquisition chosen for study by Edelshy (1976) is the ability to interpret language as being appropriate to speakers of one sex or the other. The guidelines for such a study are complicated by the fact that, unlike studies of the acquisition of syntax, for which adult grammars are readily available, there are few formalized descriptions of adult communicative competence, and "... no work determines the competence shared by a large number of non-linguist adults to interpret language as sex appropriate." (p 48)

In the experiment described by Edelsky, the subjects (adults, first, third and sixth graders) were presented with statements containing language variables such as "oh dear", "I'll be damned", tag questions,

and other variables presumed to be sex appropriate in various contexts. The children's form of the instrument was read aloud in order that reading ability would not interfere with the results.

Results of this study indicate that the recognition of linguistic correlates of sex roles appears to be acquired according to two patterns: one of gradual and steadily increasing adult norms, and one of rule learning, then rule overgeneralization and, later, differentiation of rules. This type of language acquisition appears to begin much later than that of syntax and phonology, having barely started at school entrance age and showing its most substantial development during later childhood years.

Awareness of sex role distinctions in language is observable in children as young as five and a half or six. (Haas, 1977). Haas refers to the work of Garcia-Zamor (1973) concerning certain features of language and whether they were male- or female-associated in the opinion of children of nursery school age. Garcia-Zamor interprets the greater male awareness of sex appropriate language to mean that boys are learning a new male language, whereas girls are simply continuing to speak their mother's tongue and therefore need not be so sensitive to sex differentiation in speech.

2.1.4.2. Adults Listening to Children

A study by Sachs et al (1973) (cited in Haas)(1977) reports that adult judges were able to identify accurately the sex of children from

four to fourteen years from their voices. The boys were found to use lower formants, but they had higher fundamental frequencies than girls. In addition, a more forceful, definite rhythm of speaking was found in the boys' speech.

A similar study by Meditch (1976) (quoted in Haas, 1977) showed that adults were able to judge the sex of three- to five-year olds on the basis of samples of spontaneous speech which had been tape recorded. Meditch found also that males were more readily identified than females. This tends to reinforce the conclusion that boys learn sex appropriate speech earlier than girls.

Cherry and Lewis (1977) examined interactions between caregiver and child in order to discover whether the differential socialization of female and male children might explain sex differences in behaviour and, if so, what might be the implication of these differences for the language development of children. A number of hypotheses concerning adult-child interactional style are discussed briefly, suggesting that adults adjust their speech in terms of syntactic complexity to match the level of the child's linguistic ability and that there are major differences at the discourse or conversational level of speech between mothers of fast and slow language learners. Results of a study conducted by these authors do not support the idea of syntactic fine-tuning, though there were some differences observed in the speech of mothers to male and female children. The significant sex differences were found, not in the children's speech but in the mothers'. It would appear from the data that mothers expect

that female children are or should be verbally expressive, responsive and talkative whereas male children are not so strongly expected to exhibit this type of linguistic behaviour.

A study by Haas (1977) undertook to discover whether there are features of form, content, topic and use that are sex-associated, whether the production of sex-associated features differs as a function of whether the speaker is in a same-sex or mixed-sex dyad, and whether the sexes are more differentiated with increasing age by their production of sex-associated features. The conclusions offered by Haas were that there is some evidence for an increase in gender-associated speech in girls between the ages of four and twelve. Boys by age four already seemed to use male-associated spoken language. As for the categories of form, topic, content and use, Haas reports that age trends were observed for both sexes. These trends were generally roughly parallel for boys and girls, with some exceptions influenced by the gender of the communication partner. Haas concludes that, especially for the early years, more information is needed in order to "... elucidate the acquisition of sex-associated spoken language." (p 108).

CHAPTER III

3.1. The Present Study

The conclusions of the authors whose work has been reviewed and the factors and characteristics involved in sex-associated language of both adults and children, give rise to a number of questions to be answered and suggest a number of approaches which could be used in interpreting the results of the present study. One might list all the characteristics which have been noted, and then search for these characteristics in the utterances that have been recorded. One could take the tapes to the phonetics laboratory for analysis of formants and fundamental frequencies, or subject the utterances to a syntactic analysis. Our analysis does make some comparisons with earlier studies as to the characteristics to be observed, but our main concern is with the reactions of children listening to children speaking. The primary purpose is to discover whether a child can identify the sex of another child of his own age or younger, solely upon the basis of a segment of tape-recorded speech.

For the purposes of this study we shall term this listening capability 'perception'. The child's perception will be measured in terms of the percentage of correct sex identifications he or she makes out of the number of conversations he or she hears.

There is a concomitant capability to be considered and that is the child's tendency to use language features which are appropriate to his or her sex. This capability we shall term 'production'. If a

person's gender can be identified by someone listening to his spoken language, it must indicate that the speaker is producing linguistic features which are signalling his or her gender. Upon this premise, that production signals sex, is based the decision that, for this study, the child's production will be measured in terms of the percentage of correct identifications made by those who are listening to the child in question.

A number of references have been made to verbal ability. It seems reasonable to suggest that the ability to perceive and to produce sex-appropriate features in language use could be considered an example of verbal ability since both aspects are intimately concerned with spoken language.

With these terms in mind, the following questions are posed. Their answers will be sought in the data furnished by the present experiment.

At what age is there evidence of the onset of either perception or production of sex-related features in the language of children? Do perception and production of sex-related features increase as the child matures? Is there a noticeable improvement in perception and production around age seven? At what age is adult competence achieved? If we accept the notion that perception and production of sex-related language constitutes a verbal ability, does this predict that girls, who are supposed to have better verbal ability (Cherry and Lewis, 1977) will be more accurate

at making such identification (perception)? And will the girls' alleged superior verbal ability influence their being identified by others (production)? Lastly, is there any correlation between a child's ability to recognize sex-associated speech in others (perception) and the frequency with which that child is correctly identified as to sex by others (production)?

Once we have investigated these reactions of children to other children, there may be factors coming to light which correspond with the findings of earlier studies or those which pose new questions to be investigated concerning this aspect of language.

The use of a group of adults listening to the same children was made for the purpose of establishing a sort of link between earlier studies and this one. It was felt that if the findings concerning the adults' ability to identify sex-associated language in the conversations of this experiment were in accord with those of earlier findings, that would lend some measure of validity to the findings concerning the children's reactions.

The sections that follow include, first, a description of the experiment and an attempt to interpret the results in the light of the questions which have been posed. Next will be an attempt to make a critical evaluation of this preliminary experimental model, noting the factors that were taken into consideration in planning the design, circumstances that complicated its execution and, in short, a brief inspection of what worked, what did not, and why. Lastly, the outlook for further study will be discussed.

3.2. The Experiment

3.2.1. Subjects

The subjects in the experiment included thirty-two children and ten adults. The children's group was composed of four boys and four girls of each age group, four, six, eight and ten years. The four year old children were pupils attending the Campus Day Care Centre at the University of New Brunswick, in Fredericton, N.B. This Centre serves quite a mixed population, not only of students and staff of the University but also families from the city of Fredericton representing the whole gamut of socioeconomic conditions. No attempt was made at this preliminary level to obtain information about the socioeconomic status of the children used in the experiment. Nor was there any attempt to specify the ages as to years and months. The eight were chosen at random from what the Centre staff refer to as "the four-year-olds".

The children of six, eight and ten years of age were pupils of Summerhill Elementary School in Oromocto, N.B. This school also serves a mixed population, at least in terms of socioeconomics. The pupils in this school include children of military families of Canadian Forces Base Gagetown as well as civilian families of the town of Oromocto and the surrounding rural area. Again, no information was sought as to the socioeconomic status of the individual children in the experiment. While the principal of the school was informed of the general nature of the experiment, no specifications were made as to the choice of children. This

choice was randomly made by the teachers of the various classes. Again, the specific ages were not noted. Children from grades one, three and five were assumed to represent the six, eight and ten year age groups.

The adults represent a convenience sampling of acquaintances who were willing to take part in the experiment. Their ages range from nineteen to fifty-five and no personal information was gathered except to note that one person was a graduate student of Linguistics and, as such, might be considered more informed than the rest.

3.2.2. Method

3.2.2.1. Children

Because of existing circumstances, the entire experiment was conducted by one person. This means that the same one person was interviewing the children, making notes and operating the tape recorder. Some of the effects and disadvantages of this one-person operation will be discussed later.

The experimental conditions could not be quite identical for all groups of children. Because of the age differences, slightly different strategies were used with the four and six-year-old children than with those ages eight and ten.

First, for the four-year-old group, the experimenter (hereafter referred to as E), who happens to be a former Nursery School teacher, spent several days working as a volunteer in the Day Care Centre in order to establish some measure of rapport with the children. During this time the tape recorder was left in plain sight, sometimes recording, sometimes not.

For the experiment, two children (same sex) were taken to another classroom for a 'small group activity' which is part of their regular program. The children were given modelling clay and E suggested that they model someone of their family. The conversation was directed, thus, to the topic of 'family'. Each child, in turn, was asked by E to "Tell me about your family." The responses were recorded without the children's knowledge. The situation was very informal: Children address teachers on a first-name basis in the Centre. The age four group were not asked to identify any other children.

The six-year-old children were sent, by their teachers, in same sex pairs to a classroom where E again used modelling clay to focus the topic upon the family by suggesting that the children model some family member. During this activity, E explained that she was trying to find out something about voices on tape. In the discussion the children were asked what sort of things can be learned about people from their voices, whether we can tell how old they are and whether they are boys or girls. After this preliminary discussion and exchange of ideas, each child was invited by E to speak into the recorder and "Tell me about your family." In order to foster the conversational tone, E made suitable responses when they seemed called for.

After the two children's conversations were taped, they were allowed to hear their own voices. Next, each was asked in turn, to listen to what E described as "some other children" and to tell E whether each voice belonged to a boy or a girl and what the speakers' age would be.

The voices the children heard included the four-year-olds from the Day Care Centre and the other six-year-olds, if any, who had preceded the pair being interviewed (i.e. the first pair of sixes heard only the fours; the second pair heard the fours and the first pair of sixes and so on as the stock of conversation tapes built up).

After two playings it became evident that a great deal of background noise had been picked up by the recorder when taping at the Day Care Centre and the listening children were unable to hear the younger children's voices with the exception of two. For the remainder of the experiment, only these two stimulus voices of four-year-olds were included in the test for all the remaining children and adults.

Each of the six-year-old children heard all the stimulus voices one after another and his/her responses were given verbally to E. This means, of course, that the second child heard the first child's responses while he or she was busy with the clay, but the children did not give their verbal responses together.

The situation was similar for the eight- and ten-year-old children, though slightly more structured. These children were also sent by their teachers in same-sex pairs. The interviews were conducted in the manner of a Language Arts class, where the teacher introduces a topic, makes an effort to involve the children in a discussion of the topic and then proceeds with an activity to illustrate the topic. In this case, the topic was 'People's voices on tape'.

Again, after the discussion, each child was asked to "Tell me about your family." They were permitted to hear their own voices, for their own interest. Then each was given an answer sheet bearing the columns 'Boy', 'Girl', 'Age'. They were asked to listen to the other children and indicate the sex and age of each speaker. They were told that if they thought they recognized anyone they could write in the name. The children marked their answer sheets without consulting each other.

3.2.2.2. Adults

Each of the ten adults was given pencil and paper and asked to listen to the taped conversations of all the children, recording for each the approximate age and the sex, and making a brief note of what it was that indicated to them that the child was male or female.

3.2.2.3. Recording the Results

Raw data from the results of the experiment has been recorded in the tables appearing in Appendix A. These tables illustrate the correct and incorrect responses of both children and adults. The individual child's perception (correct identifications of other speaking children) is indicated in Table A-1. The individual child's production (tendency to be correctly identified by others) is indicated in Table A-2. It is from this data that the percentages used in discussion and diagrams are drawn.

3.2.2.4. 'Knowns'

In each of the tables concerning the children, there appear a number of K's. These K's indicate that the responding child reported knowing who the speaking child was. Since the children were not asked to try to name the speakers (although they were told that they could indicate if they thought they knew who it was), and since there were no reported 'knowns' in the eight-year-old group, the 'knowns' were not removed from the totals in computing the percentages. Diagram 1, p 33 shows that there is very little difference in distribution of scores with or without 'knowns' and it seems likely that the eight-year-old group may have known each other and not reported it.

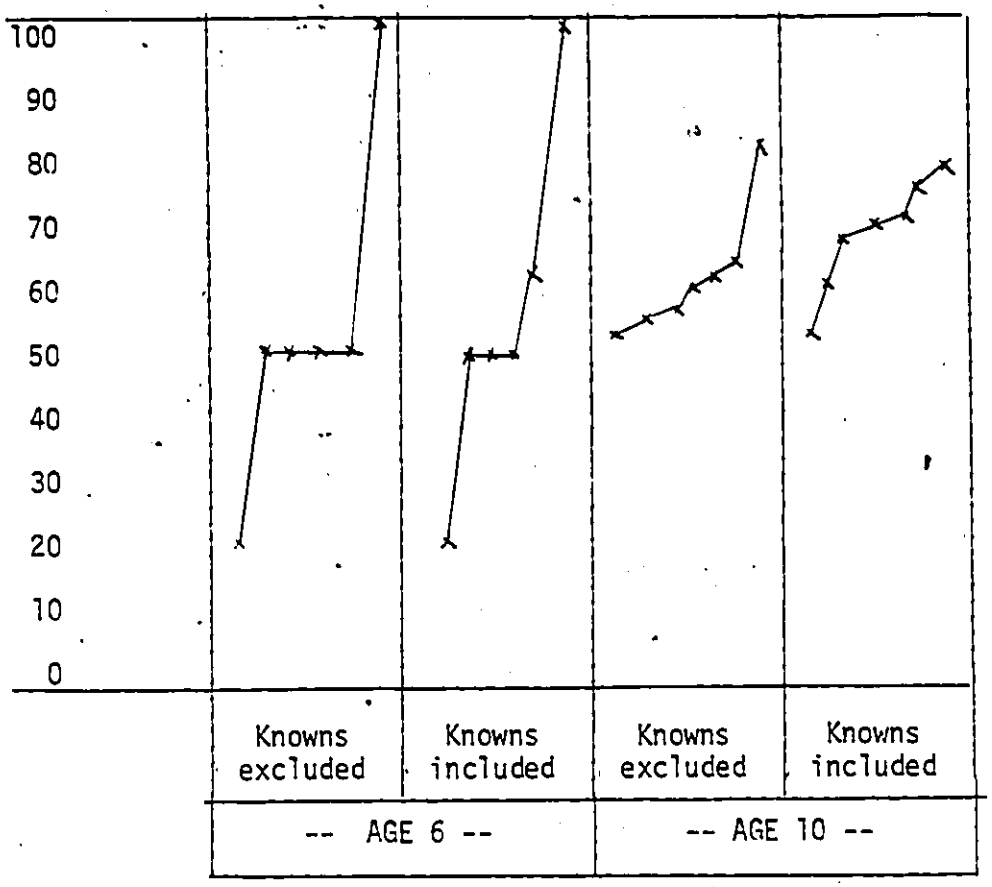
3.2.2.5 Guessing:

In order to discourage guessing the sex of the speaker, the listeners were asked also to tell the age of the speaker. This request was used as a distracting factor to draw the focus of attention away from the question of sex, and thus possibly give a more instinctive reaction. The ages suggested by adults and children were not recorded and do not form any part of the results.

3.2.2.6 Exclusion:

Because of the poor quality of sound recorded in the Day Care Centre, giving only two audible conversations and those both girls, it was decided that the results of the four-year-old group would have to be excluded from the discussion.

DIAGRAM 1:



This diagram shows the percentage of correct identifications made by the six-year-old and the ten-year-old children. The diagram indicates a comparison of the distribution of scores where the results include or exclude cases where the listening child reported knowing the identity of the speaking child. No eight-year-olds reported recognizing the identity of any of the speakers.

3.3. Results of the Experiment

The following pages show, in table form, the results derived from the data shown in Appendix A, and are presented for ready reference.

Table 1 compares the perception and production scores for each individual child. Table 2 groups speakers and listeners by age and sex. Table 3 shows the detail of how the various percentages used in the succeeding discussion, were arrived at.

Section 3.3.4. presents a brief outline of the criteria mentioned by the adults in making judgements as to the sex of the speaking children.

3.3.1. TABLE 1

Child's name and age	Percentage of all children correctly identified by child named	Percentage of all adults and children who identified child named	
Janet (6)	50	80	
Melanie (6)	100	8	
Shannon (6)	66	77	
Rebecca (6)	50	55	
Alan (6)	None heard	60	
Cameron(6)	None heard	90	
Colin (6)	25	14	
Ronnie (6)	50	92	
Stephanie (8)	75	100	
Rhonda (8)	83	64	
Sonya (8)	25	90	
Leonna (8)	63	79	
Jason (8)	58	96	
Peter (8)	42	62	
Bruce (8)	71	49	
Sean (8)	71	100	
Lori (10)	63	100	
Erica (10)	56	85	
Jennifer (10)	74	100	
Salinda (10)	79	95	
Paul (10)	83	100	
Sean (10)	86	80	) Adults
Stuart (10)	71	80	) only

? This table shows the percentage of correct identifications made by the child (perception) compared with the percentage of correct identifications made of that child's speech (production).

3.3.2. TABLE 2

SPEAKING	LISTENING					
	All adults %	Female adults %	Male adults %	All children %	Female children %	Male children %
All children	73	75	71	68	71	65
All female children	73	75	72	68	68	73
All male children	75	75	71	65	65	65
All children age 6	58	60	55	56	53	53
All children age 8	75	70	75	85	80	90
All children age 10	89	97	80	100	100	100
Female children age 6	53	55	50	56	58	53
Female children age 8	78	70	85	89	85	92
Female children age 10	90	100	75	100	100	100
Male children age 6	63	65	60	57	59	53
Male children age 8	73	70	75	81	75	88
Male children age 10	87	93	80	100	100	100

This table indicates the percentage of correct sex identifications made by all listeners, according to groups.

3.3.3. TABLE 3

	Age	
Six-year-olds as a group identified	13 of 24 children	54%
	3 of 8 girls	38%
	7 of 16 boys	44%
Girls, age 6, identified	10 of 16 children	63%
	2 of 4 girls (6)	50%
	8 of 12 boys (6)	75%
Boy, age 6, identified	3 of 8 children	38%
	1 of 4 girls	25%
	2 of 4 boys	50%
Eight-year-olds as a group identified	56 of 88 children	64%
	31 of 48 girls	65%
	25 of 40 boys	63%
Girls, age 8, identified	26 of 40 children	65%
	14 of 20 girls	70%
	12 of 20 boys	60%
	4 of 4 girls (8)	100%
	4 of 4 boys (8)	100%
Boys, age 8, identified	21 of 48 children	44%
	17 of 28 girls	61%
	13 of 20 boys	65%
	9 of 12 girls (8)	75%
	4 of 4 boys (8)	100%
	13 of 16 children (8)	81%
Ten-year-olds as a group identified	96 of 130 children	74%
	55 of 70 girls	79%
	41 of 60 boys	68%
Girls age 10 identified	48 of 70 children	69%
	25 of 36 girls	69%
	23 of 34 boys	68%
	4 of 4 girls (10)	100%
	1 of 1 boy (10)	100%
Boys age 10 identified	48 of 60 children	80%
	30 of 34 girls	88%
	18 of 26 boys	69%
	8 of 10 girls (10)	80%
	12 of 12 boys (10)	100%

3.3.4. Criteria used by adults in identification:

3.3.4.1. Physiologically-based criteria:

Voice

The group of ten adults hearing 23 children used 'voice' as a criterion in 82 cases. In ten of those 82 cases, identifications were incorrect. 'Voice' was variously expressed as voice, voice pitch, voice tone, voice level, voice raspy, tone, higher pitch voice, lower voice, squeeky voice and quality of voice.

3.3.4.2. Paralinguistic features:

Intonation

Intonation was mentioned in five instances and by only two of the adults. Three of the five instances were incorrect identifications.

Giggling

Giggling was mentioned in thirteen instances, of which two were incorrect.

Articulation

Articulation was mentioned in five instances, one of which was incorrect.

Fluency

Fluency was mentioned in six instances of which four were incorrect.

3.3.4.3. Sociolinguistic or learned features

Sports

The category of sports is mentioned in twenty-five instances, with no errors.

Interests or Topic

This category was mentioned in twenty-nine instances and in most cases was readily associated with one sex or the other.

Vocabulary

Vocabulary served as a criterion in twenty-three instances, with five incorrect identifications.

Behaviour

The behaviour described in one conversation (teasing, crying) was cited in four instances, all incorrect.

The criteria mentioned by the adults in making their identifications will be discussed in greater depth in Section 4.5.

CHAPTER IV

4. Discussion

At the beginning of Chapter III a number of questions were posed. In the light of the data which has been assembled, an attempt will now be made to answer those questions and to show their relationship to the on-going study of sex differences in children's language.

4.1. Perception and Production

4.1.1. Age of Onset

At what age is there evidence of perception and production of sex-related features in the language of children?

Unfortunately, neither part of this question can be answered on the basis of the results of this experiment. Since the youngest children, the four-year-old group, did not perform the listening part of the task, there is no evidence to indicate whether children of four are aware of differences in children's language as the nursery-school-age children studied by Garcia-Zamor (1973) were aware of such differences in adult language.

Because of the poor quality of sound of the tapes of the four-year-olds speaking, it was decided that the group would have to be excluded from the discussion. Therefore there is no measurement of the production ability of this age group. Thus we are unable to make any comparison with the work of Sachs et al (1973) and Haas (1977) which postulate the presence of gender-associated speech at age four.

For those areas for which we do have evidence, it will be more convenient to separate perception and production and discuss each ability separately, answering the questions as they relate to each.

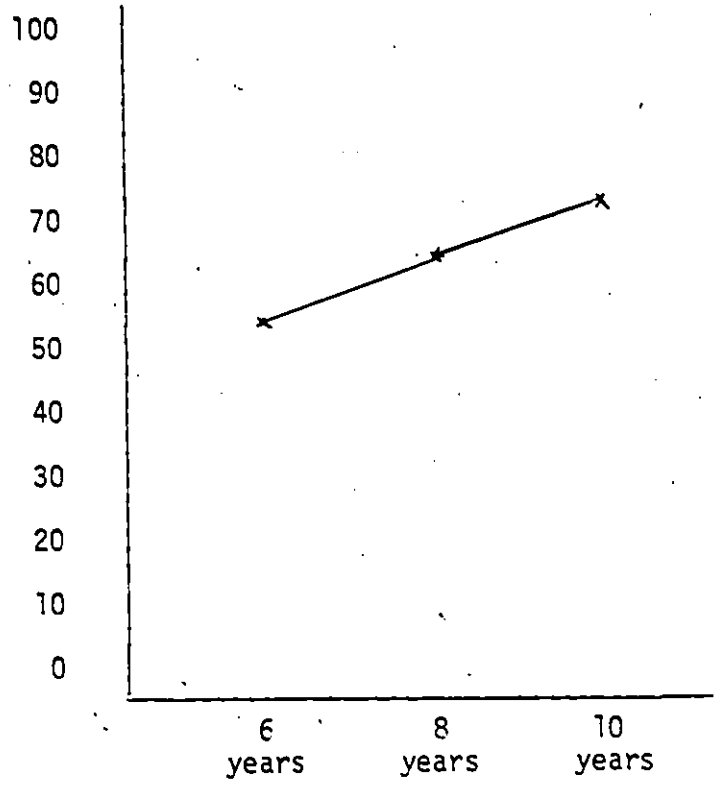
4.2. Perception

4.2.1. Increase with maturity

Does perception of sex-related features increase as the child matures?

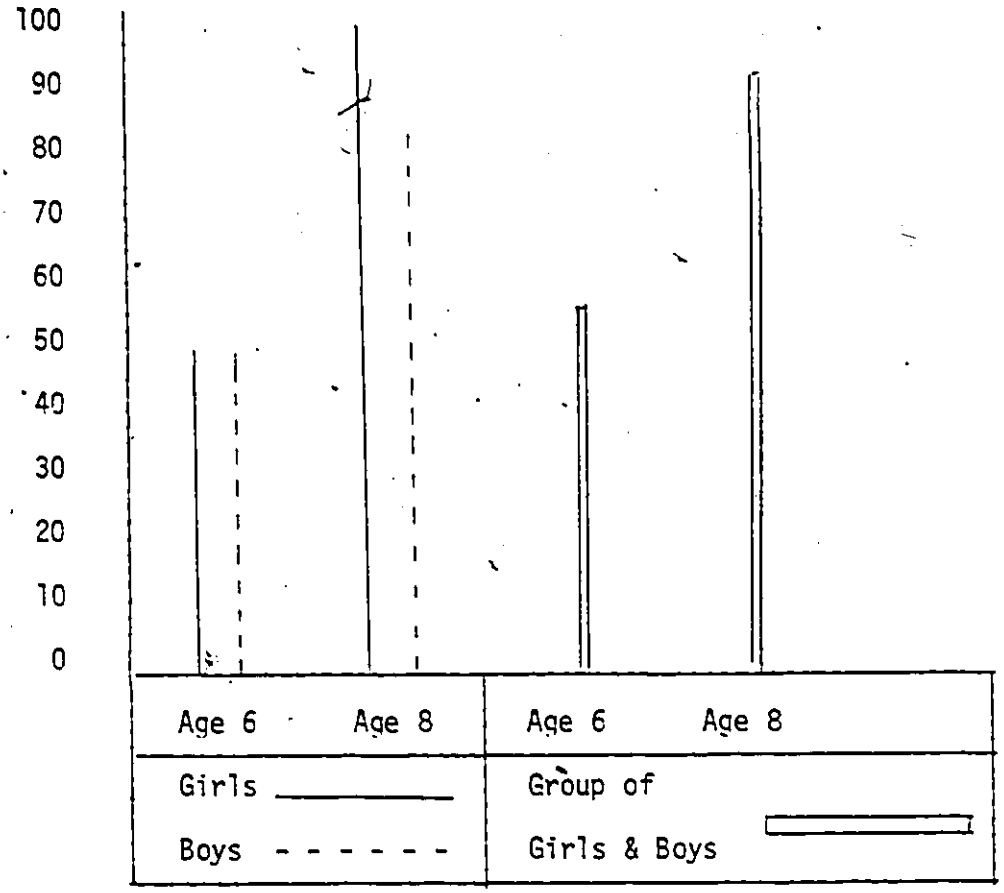
A definite and quite regular increase in perception is indicated in diagram 2 where it is shown that the six-year-olds as a group correctly identified 54 per cent of the children heard, the eight-year-olds identified 64 per cent of those they heard, and the ten-year-olds correctly identified 74 per cent of those they heard. This trend supports the pattern suggested earlier of "... gradual and steadily increasing adult norms... ... having barely started at school entrance and showing its most substantial development during later childhood years." (Edelsky, 1976 p 58).

DIAGRAM 2



This diagram shows the percentage of correct identifications of sex of all speakers made by the group of children at ages 6, 8 and 10.

DIAGRAM 3



This diagram shows the percentage of correct identifications of sex of speaker of same age group.

4.2.2. Age Seven

Is there a noticeable improvement in perception around age seven?

In answering this question we shall confine our discussion to the results of the 'own age' group, that is to say the six-year-olds hearing only other six-year-olds and the eight-year-olds' responses to other eight-year-olds. Even with this restriction, any conclusions must be extremely tentative because of the small numbers of children, and the fact that not all the children of one age group heard all the others of the same age group. With this restriction in mind, we see that the results suggest an appreciable jump in perception from 50 percent at six years of age for both boys and girls to 100 percent at age eight for girls and 81 percent at age eight for boys, each hearing their own age group only. As a group we can say that the six-year-olds identified 54 percent of the children in their age group while the eight-year-olds identified 91 percent of the eight-year-old group. (See Diagram 3, page 43).

The width of this difference in scores suggests that this could be an important area for further investigation. The evidence suggests a possible spurt around age seven in capability for perception of sex-related traits. This spurt, if it could be verified, would correspond with the developmental aspects discussed by Patel (1977) and the syntactic and phonological aspects discussed by Palermo and Malfese (1971).

4.2.3. Adult competence

At what age is adult competence reached?

It has been suggested (Lakoff, 1975) that an adult level of competence is probably reached around age ten, in the task of perceiving sex-related language. Our results are in accord with this suggestion, showing that the adult group correctly identified 73 percent of the whole group of children, while the ten-year-olds as a group, identified 74 percent of the whole group of children. (See Table 2 p 36).

4.2.4. Verbal ability

If we accept the notion that perception of sex-related language constitutes a verbal ability, does this predict that girls will be more accurate in their perception?

In comparing children and adults, male and female, we see that female adults were slightly more accurate than male in differentiating between the whole group of children (female 75 percent correct, male 71 percent). With the children's group we find that the female children made 71 percent of correct identifications compared to 65 percent by male children, each hearing the entire group of children. These results tend to support the notion that females have better verbal ability. (See Table 2 p 36). However, when we examine the breakdown of results for boys and girls within their own sex and age group we find some anomalies. Because of the small percentage differences within a small group, any conclusions must be very tentative.

There are two comparisons we can make. First, we can compare the performance of girls and boys in respect of the whole group of children each heard. This shows that:

age 6 girls correctly identified 63% of all they heard

age 6 boys correctly identified 38% of all they heard

age 8 girls correctly identified 65% of all they heard

age 8 boys correctly identified 44% of all they heard

age 10 girls correctly identified 69% of all they heard

age 10 boys correctly identified 80% of all they heard

(See Table 3 p 37).

This comparison suggests that girls do better at age six and eight and boys do better at ten years old.

Since the six-year-old group heard only the other sixes, we should perhaps compare their percentages with those of the eight-year-olds hearing only age eight and the ten-year-olds hearing only age ten.

Age 6 girls correctly identified 63% of age 6

Age 6 boys correctly identified 38% of age 6

Age 8 girls correctly identified 100% of age 8

Age 8 boys correctly identified 81% of age 8

Age 10 girls correctly identified 100% of age 10

Age 10 boys correctly identified 100% of age 10

(See Table 3 p 37)

These figures tend to support, in general, the notion that girls perform more accurately in perceiving sex-related language and thus indirectly lend confirmation to the existing evidence that girls perform better at verbal tasks.

4.3 Production

4.3.1. Increase with maturity

Does production of sex-related features increase as the child matures?

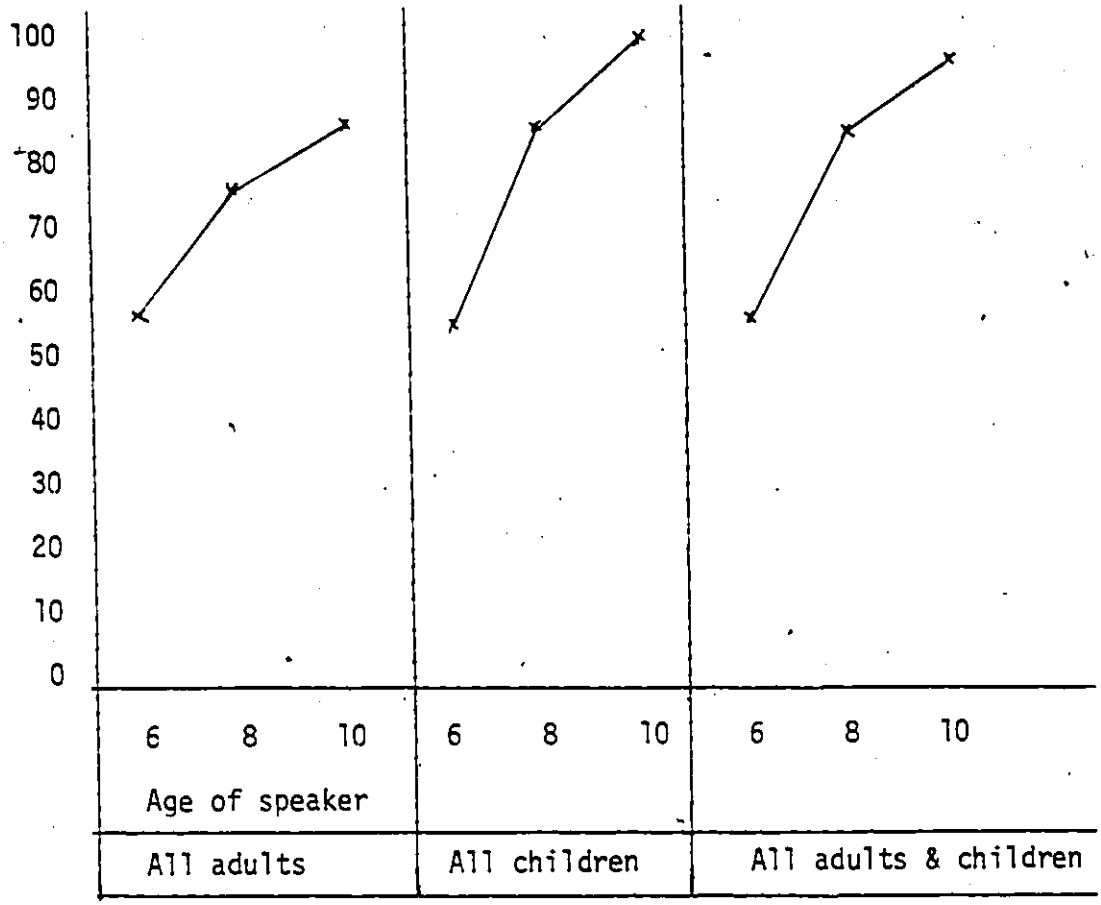
Since we are measuring the child's production of sex-related features in terms of the percentage of correct identifications made by listeners, we can see that there is an increase with age of such production as evidenced by the results in diagram 4 which shows that the group of all adults identified 58 percent of children age six, 75 percent of children age eight and 89 percent of children age ten.

Similarly, the group of all children identified 56 percent of children age six, 89 percent of children age eight and 100 percent of children age ten.

If we combine the figures, we find that at age six, 57 percent of the children were correctly identified by the whole listening group of children and adults. At age eight, 84 percent were correctly identified by the group of all listeners and at age ten, 95 percent.

This result is in accord with the increase in gender-associated speech between ages four and twelve which is referred to by Haas (1977).

DIAGRAM 4



This diagram shows the percentage of correct identifications at each age made by adults, children, whole group. The increase in correct identifications indicates an increase in production of sex-related features.

4.3.2. Age seven

Is there a noticeable improvement in production around age seven?

The diagram 4 not only shows improvement with maturity, but will also serve to indicate a marked increase in correct identifications between age six (57%) and age eight (84%) which serves as a measurement of the children's increased use of such features. This diagram indicates a much steeper gradient between ages six and eight than between eight and ten years of age. As in the case of perception, it is suggested that this age level could be an important one for further investigation. There may be a corresponding spurt around age seven in a child's tendency to produce language appropriate to his gender.

4.3.3. Adult competence

At what age is adult competence reached?

Once again referring to diagram 4 it seems reasonable to suggest that the fact that 95 percent of all listeners were able to make correct identifications indicates that by age ten children are nearing adult competence in producing speech appropriate to their sex. This is in accord with earlier observations concerning perception (Lakoff, 1975).

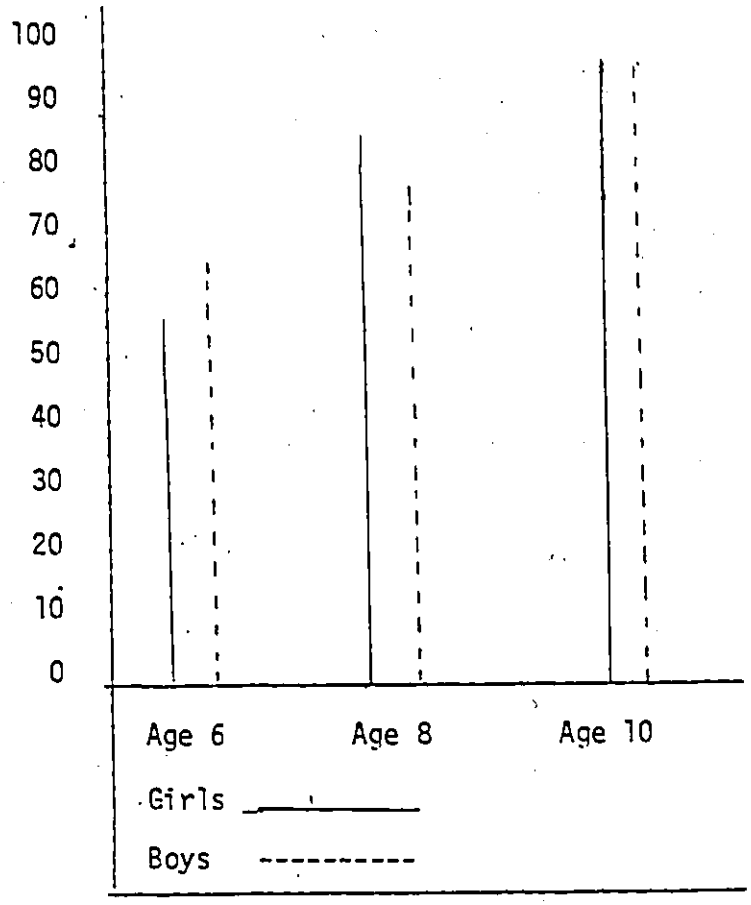
4.3.4. Verbal ability

If we accept the notion that production of sex-related language constitutes a verbal ability, does this predict that girls will be more readily identifiable?

We have compared male and female ability in perception. Now their production ability must be similarly compared. Diagram 5 indicates that boys are more readily identifiable at age six, girls at ages eight and ten.

This earlier identification of boys may reflect the claim that boys learn sex-appropriate speech earlier (Meditch, 1976), but girls may be slightly better at producing sex-associated language as they mature. If this is so, we cannot claim that using sex-appropriate language is a verbal ability associated with maturity, if boys use such speech earlier than girls who mature earlier. Further exploration with a greater number of six-year-olds and even younger children would shed more light in this area.

DIAGRAM 5



This diagram shows the percentage of correct identifications by the group of adults and children.

4.4. Perception and Production

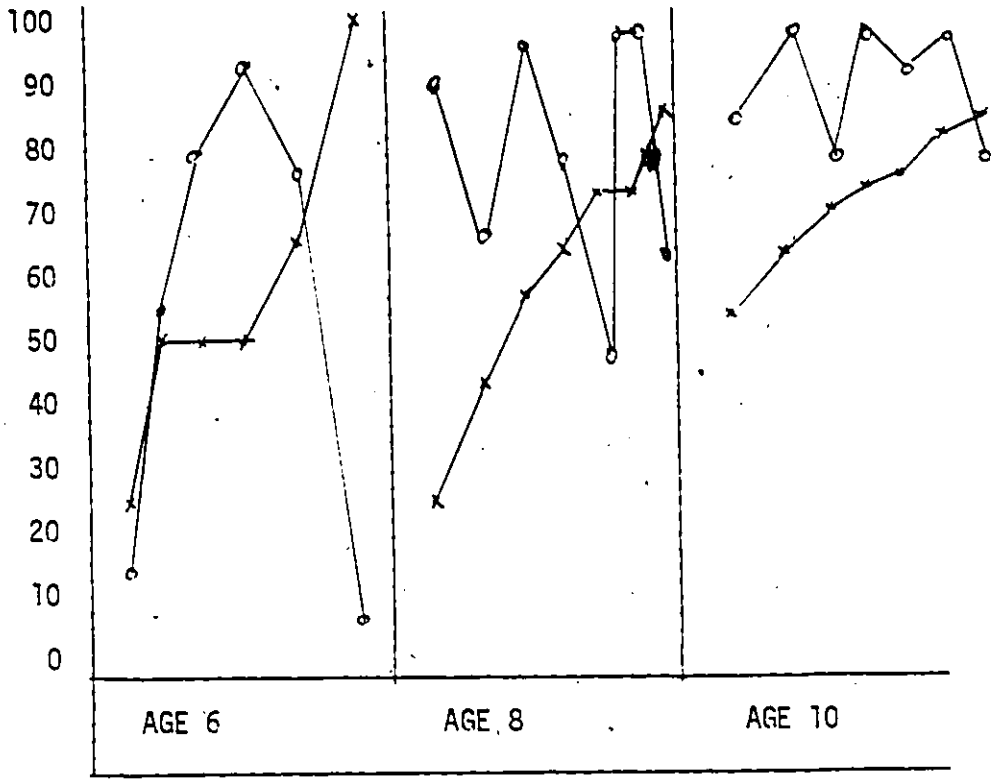
An attempt has been made to show that there is evidence for, first, an increase in both perception and production of sex-related language as the child matures, second, a possible spurt in both aspects around age seven, and third, a tendency for girls to both perceive and produce such features better than boys in most cases. There seems to be a close association of the two abilities which gives rise to the notion of a correlation between a child's ability to perceive sex-associated language in others and his or her production of such language.

4.4.1. Correlation of abilities

Is there any correlation between a child's ability to recognize sex-associated speech in others (perception) and the frequency with which that child is correctly identified as to sex by others (production)?

As we noted earlier, the fact that an individual's gender can be identified from his or her speech must indicate that that person is producing some sex-associated features. What we are seeking now is whether the identifiability of an individual is related to his ability to perceive such differences. Simply put, if a child can readily identify the children he or she hears, will that child be readily identified by the listeners, and vice versa?

DIAGRAM 6



Child's score of correct identifications x

Identification of child by all others o

This diagram shows the comparison of the percentage of correct identifications made by each child with the number of correct identifications made of that child's speech, by all others.

Diagram 6 indicates that there is no correlation. A child may do very poorly on the recognition task and still be correctly identified as to sex, or he may identify all children he hears and still not be readily identifiable to the listeners. (See also Table 1 p 35).

Although no correlation is evident for this data, the possibility remains that studies involving greater numbers of children, or children listening to unknown children, or listening to children older as well as their own age and younger, might each give different results, but for the present study we are unable to confirm a correlation between a child's ability to perceive sex differences and his production of such differences in speaking.

Thus we have explored something of how and when a child's sensitivity to and use of sex-appropriate language comes about. There still remains the question of what it is that has to be learned and assimilated as a child develops into an appropriately linguistically oriented adult.

4.5. Role of the Adult Group

In outlining the objectives of this study, it was stated that the purpose of including the adults was to form a sort of link with earlier studies. The preceding discussion demonstrates how the adult responses were used to replicate earlier studies, to support the findings of other researchers and to furnish a pattern of sex-typical judgements against which the children's judgements could be compared.

As an outgrowth of the idea that communicative competence has been fully achieved and internalized by adult speakers of a given language, we have included the group of adults in order not only to make our own comparison of the ability of adults and children to recognize gender in recorded speech, but also to try to identify the sort of criteria used, either consciously or intuitively, by adults in making such identification.

In order to study the correlations between stereotypes and actual language behaviour, it is necessary first to determine just what beliefs are held about the way people speak, as well as about the way they should speak. (Frank, 1975) The responses of the adults in our study may help to illustrate some of these beliefs.

Since the sense of sex-appropriateness is so much an unconscious thing, it may be difficult for adults to verbalize their intuitive reaction to a taped conversation. However, if the stereotypes proposed by Lakoff, Labov, Trudgill and many others are, in fact, valid, then some of this stereotypical reaction must have been internalized or developed in adults

as a part of their own developing communicative competence. We are reminded of Edelsky's regret that there is no work which determines the competence of non-linguist adults to interpret language as sex-appropriate.

4.5.1. Criteria used by the Adult Group

In examining the data in a search for the kind of clues adults use in making such judgements, we find that in many instances no reason was given for the choice that was made. Perhaps this indicates that there was no clue and the subjects simply guessed --- in which case, of course, there was a fifty-fifty chance of being correct. This may be a wrong assumption. It is possible that a given voice was felt to be so obviously male or female that the subjects felt it was superfluous to account for their choice.

It was noted earlier that differences in children's language fall into two categories, those which are physiologically based and those of the sociolinguistic or learned variety, with a good deal of overlap, especially in the area of paralinguistic features.

4.5.1.1. Physiologically-based criteria

4.5.1.2. Voice

The responses of the adults tend to confirm that the physiological difference is the fundamental one. The criterion mentioned most often, by far, is 'voice'. There were 82 instances in which the adult subjects reported that something about the voice indicated the sex of the speaking child. In these 82 instances there were fourteen errors, or incorrect identifications as to sex.

The category was variously described as 'voice', 'voice pitch', 'voice level', 'voice raspy', 'higher pitch voice', 'lower voice', 'squeeky voice', 'quality of voice', 'tone' and 'voice tone'. We have no way of knowing exactly what each adult meant by terms such as 'tone' and 'voice tone'. Perhaps these two should be listed with 'intonation' which has been loosely classified with the category of paralinguistic features.

4.5.2. Paralinguistic Features

4.5.2.1. Intonation

In chapter II it was observed that intonation hovers between language and paralanguage. As previously noted, the adults indicated that tone of voice influenced their judgements as to sex of speaker. The word 'intonation' is used in only five instances, two of which were wrongly interpreted. However this does indicate that adults have certain beliefs about what intonation patterns are typical of male and female speakers.

4.5.2.2. Giggling

Giggling is believed by the adults to be typically feminine. The category was mentioned in thirteen instances. The only two errors both concerned one of the youngest children, a boy age six. This suggests that giggling may be one of the features boys learn early to suppress in their linguistic behaviour.

4.5.2.3. Articulation and Fluency

These two categories were not mentioned by any of the 'uninformed' adults. Only the Linguistics student mentioned them. Both categories are difficult to classify, being both learned and anatomically-based. In any case, both characteristics were seen as typical of female speech, leading to incorrect responses in five cases out of eleven.

4.5.3. Sociolinguistic or Learned Features

4.5.3.1. Sports

The most clearcut indication of sex in language use, as far as the adults were concerned, is the topic of Sports. Boys were identified with basketball, swimming, baseball and bike riding. Girls were identified with skating, 'doing pairs', figure skating, roller skating and bicycle riding.

The category of sports is mentioned in twenty-five instances with no errors. However this is one of those cases where the difference is not really a language difference so much as it is a biologically based difference in the sort of sports activities in which boys and girls participate.

It would be interesting to do a similar study in which children of both sexes talked about sports in which both participate. Girls certainly do swim, play baseball and basketball and there are boys who figure skate and roller skate. The bike/bicycle contrast is a vocabulary difference.

4.5.3.2. Vocabulary

Certain vocabulary items were interpreted by the adults as being characteristic of one sex or the other. The 'bike' 'bicycle' contrast just mentioned is one such item. This pair gives a good example of the contrast between formal/informal style. It is evident that the adults in this study saw the formal style as typical of female speech.

Other vocabulary items cited by the group include 'guys' (male), colours and descriptive expressions (female), and the use of the familiar forms 'Mommy' and 'Daddy' (female). The latter two were, in fact, used by six-year-old boys who were consequently mistaken for girls. Possibly the use of such terms, as suggested earlier in the case of giggling, is a characteristic common to younger children, but one which boys learn to suppress as part of their communicative competence acquisition process.

4.5.3.3. Interests and Activities

This area, like sports, is pretty clearly divided according to what boys and girls spend their time at. So again they reflect a difference in behaviour rather than a difference in language. Boys are identified by their interest in animals, cars, dirt, playing on the street, comics, men, brothers, male friends, interest in father's occupation and the logistics of moving.

Girls on the other hand are typically identified by their interest in hair, women, choir, reading artistic and sedentary activities.

One topic gave rise to different interpretations. Some adults felt that the conversation concerning science, the museum and dinosaurs was typically male but others felt it was female.

4.5.3.4. Other

In three instances adults wrongly interpreted the behaviour described as "teasing, crying, being bugged by little brother" as typically female. While this does reflect stereotypical attitudes to behaviour, on the part of the adults, we can hardly consider the behaviour described as being characteristic of language use.

4.5.4. Overview

4.5.4.1. Correct Identifications

This review of the characteristics mentioned by the adults tells something not only of their beliefs about language but also of their beliefs about how male and female children behave.

The results indicate the sort of sex-signifying features that adults are consciously aware of. There may be other distinguishing features in children's speech which contribute to correct identifications. This analysis of the adults' responses gives some insight into the type of discussion and vocabulary to be avoided in gathering stimulus material for further studies. This aspect will be explored in the discussion pertaining to the outlook for further study.

4.5.4.2. Incorrect Identifications

After focusing upon features which contribute to correct identifications, perhaps our attention should be directed toward the cases that resisted ready identification. The two outstanding examples are Melanie and Colin. (See Table A-2, Appendix A). Melanie was not correctly identified as a girl by any adult, and her gender was identified by only two girls and one boy, i.e. only three of nineteen children who listened to her speech. The two girls who gave correct responses were, like Melanie, age six. There is a possibility that she was known to them but they did not acknowledge their recognition.

The criteria listed by the adults in making their judgements concerning Melanie include both physiological and sociolinguistic features. These criteria include 'voice', 'voice pitch', 'lower voice', 'more halting speech', 'subject' and 'brother'.

The second child who was not readily identified was Colin, who was recognized as male by only one adult and only three of seventeen children. As in Melanie's case, two of the correct responses were from six-year-olds who may have known him and not said so.

Again, the criteria mentioned by the adults in making judgements represent both types of features, including 'voice' and use of the terms "Mommy" and "Daddy", as well as the more difficult to categorize criteria of 'more spontaneous speech' and 'intonation' (also described as 'inflection' and 'emphasis on word').

These inaccurate judgements seem to reflect the adults' belief that girls are more likely to use terms of endearment or solidarity, such as 'Mommy' and 'Daddy' and that girls' speech is expected to show more spontaneity and variety in intonation.

That these two children are in the youngest group (age six) reveals once again the need for further investigation concerning the onset of production of sex-signifying speech habits.

Preparation for future investigation must include careful evaluation of what has been achieved in the present study and a quest for suitable directions for studies which might follow.

CHAPTER V

5. Conclusion

5.1. Evaluation of Experimental Design

In the early pages of this report it was stated that the study represents an attempt to design and evaluate a preliminary model for an experiment which would carry on from previous studies to focus upon the development of sex-related differences in the language of children. A number of works were chosen from the literature and used to sketch a background for the present study. This background included something of the historical debate over whether separate male and female languages exist, or whether there is, within the language of our society, a bundle of distinctive features of language use which could be termed the 'female register'. The kinds of differences which have been observed by these authors to be characteristic of male and female were outlined. These features include both biologically determined and learned characteristics. It was shown that the process of acquisition of sex-appropriate language involves both physiological and sociolinguistic factors. In order to set the stage for the experiment under consideration in the present study dealing with children listening to children, a number of previous experiments dealing with children listening to adults and adults listening to children have been described.

In this perspective an attempt has been undertaken to evaluate this preliminary model and make suggestions for future refinements in experimental method.

In addition to these practical considerations the results of the existing experiment give rise to suggestions for suitable directions for future research of the question of sex-related differences in the language of children.

One means of undertaking an evaluation of a project is to review the objectives of that project and try to estimate to what extent those objectives were met. The primary objectives in this study, as outlined in the earlier discussion, include seeking answers to the questions posed in Chapter III concerning children's ability to perceive and produce sex-appropriate language. An integral part of this primary objective was the use of adult responses as a guide to the level of competence to be expected from the children. Analysis and categorization of the adult responses concerning the criteria they used in making sex identifications, could be considered a secondary objective in that such categorization was intended for use as background data for possible future studies in which children would be asked to try to identify their own criteria in making sex judgements.

A number of less tangible objectives, or better perhaps, considerations, entered into the design of this experiment. These included concern for what educators term the 'affective needs' of the children. Quite aside from the important effect which the situation and the roles of speaker/conversation partner would be likely to have upon the speech style of the child, there was concern that the children should not be subjected to the stressful situation of having to perform what appeared to be a test in the presence of a stranger.

Probably the most successful part of the experiment, from this 'affective' point of view would be the case of the four-year-olds. Having seen the experimenter in their midst for several days, carrying out the usual duties of a staff member, being addressed on a first-name basis, like all other staff members, these children appeared to consider it quite normal that they should participate in the activity described. The tape recorder was quite unobtrusive, being the type with built-in microphone. Of course, these children were not asked to listen or respond to any conversations, so that aspect does not apply.

With the age six group, a similar concern for the children suggested the use of the clay and an all-verbal interview situation. The clay may have had some success as an 'ice-breaker' and as an activity to keep one pair of hands busy while the other's owner was responding to the tapes, but it meant that, although the children did not give their responses together, the second child had an opportunity to hear the responses given by the first. The method is also time-consuming in that each child heard and responded to the tapes of all the preceding children (except the accompanying one). Probably these children could have used the very simple written response form used by the older children.

Another aspect which was unsatisfactory, though well-intentioned, was the fact that, in attempting to foster a conversational atmosphere, the interviewer made responses as they seemed necessary, thus leading the conversation in trying to encourage the children to talk. There is no doubt that the random nature of these responses compromises the uniformity

of experimental conditions. The choice of stimulus material for future experiments should be made with this complication taken into consideration.

One last aspect of concern with the children themselves is the notion that such an experiment should be designed to include some means of giving feedback to the children as to whether they have accomplished whatever it was that was expected of them. Many children wanted to have the tapes re-played so they could be told which ones they had identified correctly. No feedback whatsoever was given, aside from thanks for their cooperation, but it is suggested that the identification task might be somehow set up in game form so that the children could receive some sort of feedback, even if it has no relation to the actual purpose of the experiment.

Another matter of concern which has been touched upon briefly is that of the effect upon the speech style of the children that would result as a function of the situation, conversation partner and topic. (Cherry and Lewis, 1977 and Crosby and Nyquist, 1977). In this experiment there was at least a measure of uniformity in that every child was in a classroom situation in conversation with a teacher.

A most serious complication was that the teacher was also operating the tape recorder. The combination of activities may not have affected the children, but it did result in at least one bit of sloppy procedure in that one of the conversations, that of a ten-year-old boy, was inadvertently deleted. This accounts for the fact that the results for the ten-year-old group show only seven children. In spite of the fact that introducing more

adults may alter the situation, it is suggested that further explorations would do well to include a different system for recording and playing the tapes.

One of the major concerns in planning the experiment was to find a way to get all the children talking about the same general topic. Using question and answer would seem to be much too restrictive for the purpose, but relying upon random conversations would have been equally unsatisfactory since there would have been no control whatsoever of the topic. The children might have been asked to tell a certain story and then have the taped versions of the story used as the stimulus tapes. Although such a method would limit the vocabulary and closely control the topic (and thus facilitate comparisons between girls' and boys' speech), it would seem to be rather difficult to choose even a well-known story which would be equally familiar and equally interesting to children of both sexes and particularly to children ranging from four to ten years of age. An invitation to talk about one's family, while certainly vague, could be asked of anyone without making them feel they were telling a 'baby' story, as ten-year-olds might view any story that would be familiar to four-year-olds. This rather vague general topic does permit us to observe a number of different strategies for responding to such an enquiry. Some children simply listed the members of their families, most included pets. Some were concerned with their homes, others with their own interests and activities, while several told little vignettes of family life.

If we look again at the discussion of the criteria used by the adults in identifying children, it quickly becomes evident that many of the identifications were made upon the basis of sports or other activities which are stereotypically characteristic of boys and girls in our society. If we are to discover anything about strictly linguistic traits in children's language, it is obvious that more attention must be given to choosing a more neutral topic.

It is possible that too much emphasis was placed upon reducing formality in an attempt to encourage the children to speak freely and in as conversational a manner as possible. It might have been more satisfactory to separate the two aspects of the experiment into two separate occasions, one for gathering the stimulus conversations, another for the listening task. Unfortunately this process is quite time-consuming and compounds the difficulty of getting access to children for experimental purposes. The same complication applies to the criticism that not all of the children were heard by all the other children. Before giving permission for the experiment to take place, the school administrator wanted to know exactly how much time would be needed. When gaps and weaknesses in the results became apparent, it was too late to re-negotiate for more time with the children.

It has been suggested that it was unnecessary to tape so many conversations, that stimulus tapes could have been prepared using one or two examples of each age and sex and these tapes played for all the children.

Such a method would give a great deal more structure to the experiment, and comparisons could be made more easily and convincingly. However, the question remains as to the means of choosing which children most satisfactorily represent their age and sex group. One of the objectives of the study was to seek patterns in speech which signal gender. No criteria have yet been established, so at this point one cannot say of an utterance that it is typical of a male or female child. While eight examples of an age group may not be a great deal more significant than two, eight was an arbitrary choice for this study. More examples would, of course, give more information and there is room for future work to establish typical age/sex profiles of language use in children.

Other aspects of a pragmatic nature include the problem of choosing children for experimental purposes. It seems important to choose children of one dialect area. Also, there may well be differences based upon socioeconomic status which were not investigated in this study, although the mixed nature of the populations of both schools was noted. Further studies might take this aspect into consideration.

In any test situation in which only two answers are possible, it is necessary to find some means to discourage guessing. In this experiment the ruse that was used with both children and adults was the request to state the age of the speaker. This strategy appeared to be effective, judging by the difficulty that the task seemed to present. Certainly more attention and effort appeared to be devoted to deciding upon the age than the gender. One disadvantage is, again, an affective

factor, that the task puts unnecessary stress upon the subjects who appear to feel that they are in a test situation. It would be desirable, in any future experiments, if a means could be found to discourage guessing without increasing stress. One suggestion is the use of a prepared response form giving four names, two male and two female, each associated with a suggested age varying widely from that of the other name of the same sex. Thus, instead of choosing 'Boy' 'Girl' 'Age', the subject would choose from: 'Mary, 5 John, 4

Elizabeth, 12 Peter, 11.'

One of the major failures in the work was the loss of information concerning the four-year-old children. The main reason for the loss was the lack of a suitable venue for conducting the taping sessions. It is, perhaps, interesting to note that the noise level in the Centre was not particularly noticeable until its effect interfered with the children's perception of the voices on the tapes. Although two of the voices were actually audible, it was felt that the results of only two cases (and those both of one sex) would not offer sufficient grounds for conclusions. Therefore the results at the age four level have not been included in any discussion of results.

Perhaps the fact that the four-year-old children were being taped without their knowledge would have made their conversations unsuitable for comparison with the rest who knew they were being taped. Since we are not including the results of those age four in our analysis, we can perhaps leave the matter aside with the suggestion that in any future re-formulation

of the experiment, all of the children should be taped without their knowledge. Such taping unawares will not reduce the formality of the interviewer/interviewee relationship, but it will sidestep the question of whether individuals behave differently when they know they are being taped and even further, whether males and females react differently to the experience.

5.2. Outlook for Future Research.

To review briefly the implications of our evaluation of the experimental design, we find suggestions for improvement for future projects include further work with younger subjects (as was intended in this study) and the consideration of factors such as socioeconomic status and dialect area in choosing the subjects. Stimulus material should deal with a more neutral topic in order to avoid mention of polarized behavioural activities. This material should be gathered either without input from the interviewer or in such a manner that such input is the same for all subjects. There should be a separation of the process of stimulus gathering and the listening task. More satisfactory recording conditions need to be sought for the preparation of stimulus material and it is suggested that all stimulus subjects should be taped unawares. Suggestions are offered for methods of recording responses and discouraging guessing which will be more acceptable and less stressful to the subjects.

In spite of the many criticisms which may justifiably be levelled at this preliminary model, many useful lessons were learned and some valuable insight may have been gained concerning possible avenues of exploration which might be worthy of further pursuit.

The discussion concerning perception and production illustrated the need for further work with younger children to investigate the onset of sex differentiation. Some features seem to be acquired and used more extensively as the child matures, while other features (giggling, for example) seem to be suppressed by boys as they mature. In other words, there seem to be not only things children learn to do, but also things they learn not to do.

The objectives of this study did not include a detailed analysis of the speech of the children. We have concentrated, rather, upon their performance in the area of perceiving and producing sex-signifying speech. We have demonstrated the sort of things adults notice but have not investigated whether children are aware of the same sort of stereotypical clues. The evidence suggests that analysis of the children's speech would need to include not only a search for sex-stereotypical features but at the same time such an analysis would have to take into account developmental levels of other aspects of language use. Age level norms in vocabulary extent, syntactic construction and other such features of language use have already been developed for use in educational testing and research. Such analyses could well form the basis for further research concerning sex differences.

We have tried, as Frank proposed, to discover something about the beliefs held by adult speakers about what is expected in the speech of male and female children. While we have not specifically elucidated what the children are learning about sex-appropriate language use, we have demonstrated their developing ability, not only to use language in a way that signals their sex to other listeners, but also to decode those signals and recognize the gender of other child speakers. We have not demonstrated when this capability begins but we have observed a progression in its development with a possible spurt around the age of seven and with near perfect results by the age of ten.

As to how and why the process happens, we rely on the opinions of the authors who stress the importance of cultural factors, of adult and particularly of parent and caregiver expectations and interaction with the child. We have acknowledged as well, the innate physiological factors which no doubt play a very basic role in the maturational process of a child growing into a normal linguistically oriented adult.

The question, myth or reality of 'women's language' or the 'female register' continues to interest not only students of language science but other groups as well, people concerned with equality and human rights. If, as has been suggested, it is the fathers that are the main force behind the maintenance of sex-role distinctions, is it reasonable to predict some changes in gender-based language use because of the changing patterns of society, and specifically the increasing number of single-

parent families? What will be the effect on the language of children of families without a resident father or where the father is the single parent and primary caregiver? Would it not be interesting to compare samples of children's language of ten or twenty or more years ago and as many years hence to see what changes there might be in sex-role stereotyping?

At a time when women sociolinguists are demanding "action research" into women's language, it seems possible that as a result of the work of women activists, language might be changing in the direction of a less sex-based style.

Sixty years ago, Jespersen spoke of great social changes going on which might eventually modify even the linguistic relations of the two sexes. The question of genderlect remains. This study does nothing to solve that question, nor was it intended to do so. What it does indicate is that in spite of the many social changes since Jespersen's day, children are still developing communicative skills in a manner befitting their sex. Linguistically speaking, boys will be boys.

APPENDIX A

TABLE A-1 PERCEPTION

LISTENING		SPEAKING															
		AGE 6				AGE 8				AGE 10				ALL AGES			
NAME	AGE	F	M	T		F	M	T		F	M	T.		F	M	T	%
Janet	6	0	1/2	1/2										0	1/2	1/2	50
Melanie	6	0	2/2	2/2	1K									0	2/2	2/2	100
Shannon	6	1/2	3/4	4/6	1K									1/2	3/4	4/6	67
Rebecca	6	1/2	2/4	3/6										1/2	2/4	3/6	50
Alan	6	0	0	0													
Cameron	6	0	0	0													
Colin	6	0/2	1/2	1/4										0/2	1/2	1/4	25
Ronnie	6	1/2	1/2	2/4										1/2	1/2	2/4	50
Stephanie	8	3/4	2/4	5/8		2/2	2/2	4/4						5/6	4/6	9/12	75
Rhonda	8	3/4	3/4	6/8		2/2	2/2	4/4						5/6	5/6	10/12	83
Sonya	8	1/4	1/4	2/8										1/4	1/4	2/8	25
Loanna	8	3/4	2/4	5/8										3/4	2/4	5/8	63
Jason	8	2/4	3/4	5/8		1/2	0	1/2						3/6	4/6	7/12	58
Peter	8	1/4	2/4	3/8		1/2	0	1/2						2/6	3/6	5/12	42
Bruce	8	2/4	2/4	4/8		4/4	2/2	6/6						6/8	4/6	10/14	71
Sean	8	3/4	2/4	5/8		3/4	2/2	5/6						6/8	4/6	10/14	71
Lori	10	3/4	2/4	5/8		2/4	3/4	5/8						5/8	5/8	10/16	63
Erica	10	2/4	2/4	4/8		3/4	2/4	5/8						5/8	4/8	9/16	56
Jennifer	10	2/4	3/4	5/8	2K	3/4	3/4	6/8		2/2	1/1	3/3	1K	7/10	7/9	14/19	74
Salinda	10	2/4	3/4	5/8		4/4	3/4	7/8		2/2	1/1	3/3	2K	8/10	7/9	15/19	79
Paul	10	2/4	3/4	5/8		4/4	4/4	8/8		2/2	0	2/2		8/10	7/8	15/18	83
Sean	10	3/4	2/4	5/8	1K	4/4	4/4	8/8	3K	4/4	1/1	5/5	1K	11/12	7/9	18/21	86
Stuart	10	3/4	1/4	4/8	1K	4/4	2/4	6/8	1K	4/4	1/1	5/5	2K	11/12	4/9	15/21	71

F - Female
M - Male
T - Total
K - Known

Table A - 1 This table indicates the number and percentage of correct identifications made by each child.

TABLE A-2 PRODUCTION

SPEAKING		LISTENING																	
		Adults				Age 6			Age 8			Age 10			Children all ages				Children and Adults
NAME	AGE	F	M	T	%	F	M	T	F	M	T	F	M	T	F	M	T	%	%
Janet	6	3	5	8	80	0/2	1/2	1/4	4/4	3/4	7/8	4/4	3/3	7/7	8/10	7/9	15/19	79	80
Melanie	6	0	0	0	0	2/2	0/2	2/4	0/4	1/4	1/8	0/4	0/3	0/7	2/10	1/9	3/19	16	8
Shannon	6	3	3	6	60				3/4	4/4	7/8	4/4	3/3	7/7 3K	7/8	7/7	14/15	93	77
Rebecca	6	5	2	7	70				3/4	0/4	3/8	1/4	2/3	3/7	4/8	2/7	6/15	40	55
Alan	6	3	3	6	60	2/4	2/2	4/6 1K	1/4	2/4	3/8	2/4	0/3	2/7 1K	5/12	4/9	9/21	43	52
Cameron	6	4	5	9	90	3/4	0/2	3/6	3/4	3/4	6/8	4/4	2/3	6/7	10/12	5/9	15/21	71	81
Colin	6	1	0	1	10	2/2		2/2	0/4	0/4	0/8	0/4	1/3	1/7	2/10	1/7	3/17	18	14
Ronnie	6	5	4	9	90	1/2		1/2 1K	4/4	4/4	8/8	4/4	3/3	7/7	9/10	7/7	16/17	94	92
Stephanie	8	5	5	10	100				2/2	4/4	6/6	4/4	3/3	7/7 1K	6/6	7/7	13/13	100	100
Rhonda	8	2	3	5	50				2/2	3/4	5/6	2/4	3/3	5/7	4/6	6/7	10/13	77	64
Sonya	8	4	4	8	80					2/2	2/2	4/4	3/3	7/7 1K	4/4	5/5	9/9	100	90
Loanna	8	3	5	8	80					1/2	1/2	3/4	3/3	6/7	3/4	4/5	7/9	78	79
Jason	8	5	5	10	100				2/2	2/2	4/4	3/4	3/3	6/7 2K	5/6	5/5	10/11	91	96
Peter	8	2	3	5	50				2/2	2/2	4/4	2/4	2/3	4/7	4/6	4/5	8/11	73	62
Bruce	8	2	2	4	40							2/4	2/3	4/7	2/4	2/3	4/7	57	49
Sean	8	5	5	10	100							4/4	3/3	7/7 1K	4/4	3/3	7/7	100	100
Lori	10	5	5	10	100							2/2	3/3	5/5 2K	2/2	3/3	5/5	100	100
Erica	10	5	2	7	70							2/2	3/3	5/5 1K	2/2	3/3	5/5	100	85
Jennifer	10	5	5	10	100								2/2	2/2 2K		2/2	2/2	100	100
Salinda	10	5	4	9	90								2/2	2/2 1K		2/2	2/2	100	95
Paul	10	5	5	10	100							2/2	2/2	4/4	2/2	2/2	2/2	100	100
Sean	10	5	3	8	80														
Stuart	10	4	4	8	80														

F - Female
M - Male
T - Total
K - Known

Table A - 2 This table shows the number and percentage of times each child was correctly identified by adults and children.

APPENDIX B

TEXT OF CHILDREN'S CONVERSATIONS

Six-year-olds

Alan: Well, sometime my dad likes to sleep (giggle) 'n my mom always likes to stay up and um they like to work ah some of the time and uh I like to talk to my bird and my bird's name is Bolduc (?) (giggle)

E: It's what?

Alan: Bolduc

E: Bolduc. That's an interesting name.

Alan: And my dog's name is Chimo (pause) and my brother's name is Michael and my mother's name is Olive. father's name is Olaf (?) and my brother gave me a fish and I named him Fishy-fell (giggle) and uh all kinds of good my pets I got a cat named Tigger.

Cameron: Well, sometimes on holidays or after school we go to the park and I I play on the swing and I make my (inaudible) quite deep--about that deep and then over my head and um I might um go down there when they get the water in there 'n all finished. There're these boards up like a fence Sometimes we um we like playing volleyball on our street our street 'cause not very many cars go there to (inaudible) not very big and uh (pause) I like uh (inaudible) ride my bike on the big court or somep'n. We got a really really big really really big court 'n I like to ride my bike on the big court 'cause it's really fun and on holidays when it's cartoon day I always watch cartoons.

Janet: I got two girls and two sisters and (inaudible) and a dog and a cat (pause) just a mother (pause) my father's gone to (inaudible)

E: Do you want to tell me about what your family likes to do on summer holidays?

Janet: hm my father likes reading and my mother (pause) likes (pause) um (pause) my sister likes staying ins. ... and my sister plays outside my little sister

Melanie: Well, my mom likes reading and my dad likes going to the cabaret (pause) my brother likes going outside to play my brother Roy he's he likes to go to the band practice and my other brother he likes to um (inaudible)

E: How many brothers?

Melanie: I got two brothers and I got one sister (pause)

E: Pets?

Melanie: I got three pets my two cats they also like to meow.

Colin: I have a l. . . my, my have a little sister named Stacey (pause)

E: And?

Colin: And Erin (pause) and Mommy, Daddy and Erin an' me

E: How many does that make?

Colin: Five (pause)

E: What do you like to do on your holidays?

Colin: Well, on the summer we're going down to our motel from for a hall meeting a motel with a swimming pool there. I (inaudible) plus two

E: Where's that?

Colin: 25 Gilmour St. You keep on going down that road and be sure not (inaudible) 25 Gilmour St. not not the first first road but the second road up 'n it has a lawn going up you know you know there's a path going up? The path going up there and one, two, three three houses up.

E: Do you have any pets?

Colin: We used to have one but it died.

Ronnie: Oh, I have a dog named Tina (clears throat) and my brother's named Peter and my mother and father (pause) and I live on 30 Barber St (interruption) I think that's (giggle) all.

E: Oh that's not very much. What are you going to do on your summer holidays?

Ronnie: Gonna go play 'th my friend Raymond and (pause) I'm gonna listen to his music on his record (laughs)

Shannon: Um. . . I . . . my mom . . . we always go . . . Last year we went to Walt Disney on our holidays. Then (pause) we came home we stayed there for three days and then we came home and then (pause) and this year now we're gonna go campin' and this week on Friday Sandra's gonna pick me up and she's gonna go um to the Mall 'n then she's gonna take me down to the cottage and my sister has (pause) has (inaudible) tonight and (pause) I always play with my daddy and I love spankin' him on the bum (laughs) and I tickle'im and he always carries me to bed and tonight me'n my me 'n my sister are gonna go sleep with my mom cause my daddy's away for the weekend.

Rebecca: (not taping) and my brother he (inaudible) want to go to St. Andrew's especially my mom and um this (pause) year um on July 14th I'm movin' to Toronno and my dad was born in Toronno but thee thing that I'm excited about is, like, there's a Science Museum in Toronno and inside the . . . . there's all sorts of good stuff even a big, big micecroscope and a ba.. a silver ball hold on to it and (giggle) (spoken very quickly) electricity goes up into your hair and your hair shoots up in the air (giggle) and um there's a there's a dinosaur museum I'm gonna go to and inside the dinosemaur, dinosaur museum it's one whole floor of dinosaur bones.

Eight-year-olds:

Stephanie: I have (giggle) one brother (laugh) and he's in kindergarten and he cut his hand

E: Oh dear: Badly?

Stephanie: All around here and he gets nine stitches here and one here and (laugh) and he was going to Smith's pond when he did it. He was at Smith's pond.

E: What does he do at Smith's pond?

Stephanie: He was he they were looking for tadpoles and he was looking for tadpoles and frogs (pause)

E: And how did he cut the hand?

Stephanie: Well, he fell on a piece of a beer bottle glass. and and he has a cast on his arm and he has to have it in a sling and it's his left arm hand and and he (pause) He had it in for about a week, s. . still and the first two or three days it still hurt, but but we have to take him to the doctor's every day to get his bandage change changed but and two or three da... and two or three times the blood soaked through a great big thick b... great big thick bandage.

Rhonda: I have one sister and two brothers. Once when my sister was in the bathroom my sister and brother had a fight and Colleen Colleen said that she was first in the bathroom and and Scott said that he was and Colleen went 'n punched him in the tooth 'n he lost the tooth. (pause)

E: Is that your whole family? just three children?

Rhonda: No, me, my brother my two brothers and my sister.

E: Pets?

Rhonda: My grandma has a dog 'cept we we we um when I was little we used to have like when I was three I got three cats and a German Shepherd for my birthday. Two were Siamese and one was a little black and white one.

E: But you don't have them anymore?

Rhonda: No, um, one little black the black and white cat got caught in a fire one got like where we lived there was Indians and the mother Siamese cat got killed by an Indian and um the other one got buried in the snow and the dog died of old age.

Jason: Well, there are six people in my family an there's... want me to tell you their names?

E: If you like. I'd like you to speak a little bit louder if you could.

Jason: Melissa, Andrea, Wesley, Jim 'n Gayle 'n me (pause).

E: What do you like to do on your holidays?

Jason: Well, go to Tronno.

E: Really?

Jason: That's where we did for our vacation last summer. We might be movin' to Alberta this summer.

E: Have you lived there before?

Jason: 'n my cousins they're movin' to Dallas today.

Peter: There's five people in our family and their names are Vincie, Vince, Joyce and my grandmother which I don't know her name and Tommy and Deedee and Vincie . . . and of course me

E: Of course, you.

Peter: 'n we might be movin' to Chatham again and we're going to our summer cott... cottage which is around Miramichi. That's about all.

Sonya: There's um six in my family and (sniff) we have a dog and his name is Rusty and (sniff) um when we went to Florida (sniff) I . . . couldn't get in the pool because I (sniff) my mom thought I had a (sniff) um appendicitis.

E: And did you really?

Sonya: No. But I hadda go to the hospital for three days and three nights.

Loanna: There's four in my family. I have a dog 'n a cat 'n my cat's name is Ginger 'n it's a boy. My dog's name is Cindy 'n it's a girl 'n she might have pups. And . . . we used to have some goldfish but they died 'n my dad's goldfish was named Mr. Olympic 'n he had frog eyes and my mom's goldfish was named Pepper. She was the smallest and she was 'bout two centimetres long and um my fish was named Goldie 'n she had different colours all over her and my sister's fish Nyrie (?) was named . . . um . . . Sandy and it was . . . (pause) one centimetre long.

E: That's not very big, is it?

Loanna: No, and um we would've got our dog s... spaded but we weren't allowed to because we didn't have enough money. I might go to summer . . . Happy Days camp if Mommy says so 'n then in the summer we might go to my Nannie and Poppie's 'cause they live down in Tronto 'n after we visit them for a while they'll take us down to um my cousin's house and we'll stay overnight. There's um when we come home it'll be school time again and that's all.

Bruce: Um um my brother . . . every time he bugs me or anything well like every time my brother bugs me like I pretend I cry but then he gets in trouble but then I just start laughing and then after we have supper watch TV stuff like that and like we're makin' a garden out in back and we got some we got the plow to put some dirt 'n put some soiled in 'n everything 'cause like they was all t... um old grass and it wouldn't grow. So we to get earth and I have a nice time in Oromocto west now town's really nice.

Sean: I like (clears throat) I live in the same town as Bruce does and like I ride my bike all the time 'n we play baseball with Timmy Garnett 'n Ritchie Jennings

'n I'm having a comic sale this week sell some to some guys out in Oromocto West 'n like I like playing with Bruce 'n like we go down to the playground like at the basketball court 'n me 'n him 'n Teddy like we . . . sometimes . . . he isn't there so like we make a ramp 'n we do jumps 'n all (inaudible) 'n like once we got all kinds of guys down there 'n like we were playing 'n everything. It's real fun down there.

Ten-year-olds:

Erica: I have one brother and one sister . . . I have two dogs. One's named Puddles and one Major (pause) um I like to read. I like to eat (laughs) um um

Jennifer: Hello. I have d'um six people in my family um two brothers and one sister. One's um one of my brothers is eight and the other one's four and I've got a sister two year old. Um I like to figure skate um I'm . . . I'm in choir here at school um I like to read.

Salinda: Hello. We have three people in our family. There's just me and my mom and dad 'n we like to go bicycle riding. I like reading 'n skating. I like playing basketball.

Paul: Um I have two brothers, one sister and um we go down where my mom was born for our holidays 'n we get to go swimming any time we feel like it (cough) 'n then I have lots of friends down where we go 'n we used to have a pet bird but he died name was Pete um we have two dogs.

Sean: Um I have I live on a . . . a very a one a a one-level house and I have . . . a sister and my mother she doesn't work but . . . my dad he's pilot.

He used to work at CFB Gagetown but thee squadron that he used to work on is now closed so we have to move to Moose Jaw where my dad is right now. And he is going to be I think he's going to be commanding a Base um so far we might have a house but we haven't sold our one here yet and um we'll be going out there about late July and um it will take us at least about eight days to get out there and um . . . oh . . . um . . .

Stuart: I have . . . um . . . three brothers, one sister. My father works at the hospital as a surgeon. My mother sometimes works in the library and every well this year we're gonna be moving next door because our other house is too small and every summer we go camping for three weeks to our grandmother's cottage in Tronto and we stay there for about two weeks 'n then we go to different places 'n stay with our uncles 'n our friends 'n everyone and um . . .

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RESUME OF THESIS

Introduction

This study represents an attempt to design and evaluate a preliminary model for an experiment which would continue on from previous studies exploring male and female language and its acquisition to focus upon the development of sex-related differences in the language of children and the children's own awareness of such differences in the speech of other children. As part of the evaluation of the model, both the success and the inadequacies of the model are explored along with the results of the experiment itself.

Purpose

The purpose of the investigation was, first, to discover whether children ten and under can reliably recognize the sex of another child of the same age or younger with only a tape-recorded conversation as stimulus. The ability to do so was, for the purposes of this study, labelled 'Perception' and was measured in terms of the percentage of correct sex identifications the child made of the conversations he or she heard.

Secondly, the study focused upon the child's tendancy to use language features appropriate to his or her sex. This concomitant capability was labelled 'Production' and was measured in terms of the percentage of correct identifications made by those who listened to the child in question.

Perception and production of sex-appropriate language were examined in the light of questions such as the age of onset of this sort of language awareness, whether there are any noticeable changes around age seven, at what age adult competence is reached, whether there is a difference in the relative capability of girls and boys at making such distinctions and whether there is any correlation between a child's ability to distinguish sex in the speech of other children and his or her own use of sex-appropriate language.

Lastly, in an effort to relate this study to preceding work in the same area, a comparison is made of the ability of adults and children to distinguish the sex of a child speaker from recorded speech and an attempt made to identify some of the beliefs and expectations held by adults about male and female speech, based upon the criteria they used in accounting for their idenfifications of the sex of the children they heard.

Background

A review of literature focuses upon such areas of concern as the question of the existence of separate languages for adult males and females, the notion of 'women's register' and the superiority of male language over female, and the characteristics of language use for each sex, including both learned and biologically-determined characteristics.

Next to be considered is the acquisition of sex-appropriate language. This process involves both physiobiological and sociolinguistic factors which are discussed briefly as a background for the present study.

The final section of the review of literature outlines previous experiments dealing with sex-related differences in the language of children and attempts to situate the present study within the scope of on-going research.

Procedure

Tape recordings were made of the voices of thirty-two children from four to ten years of age speaking about their families. The recordings were presented to the six-, eight- and ten-year-olds who were asked to identify the sex of the speaker in each case. A group of ten adults also listened to the tapes and were asked to identify the sex of the speaker and also to make a brief note of what it was that indicated whether it was girl or boy speaking.

Results

The results of the experiment indicate the following findings: The age of onset of perception and production of sex-appropriate language could not be identified. An increase in both perception and production appears to be associated with an increase in age, or maturity. The evidence suggests an appreciable spurt around age seven in both perception and production of sex-related language features. Adult competence in both aspects is apparently reached around age ten. There is some confirmation in both areas of the suggestion that girls have better verbal ability. The data for this experiment offer no evidence of a correlation between the child's ability to recognize sex-appropriate speech (perception) and the frequency with which that child's gender is correctly identified by others (production).

Examination of the responses of the adults indicates that their criteria fell into two broad categories, the physiologically-based, such as 'voice', and the sociolinguistically-based, or learned features, such as sports, interests and activities, vocabulary and other behaviour-related clues with a good deal of overlap in paralinguistic features such as intonation, giggling, articulation and fluency.

Conclusion

Evaluation of the experimental model includes suggestions for amelioration in design having to do with choice of subjects, topic of stimulus material and experimental conditions.

Results of the experiment suggest that future explorations of the topic might well include more work with younger children, closer study of the developmental threshold of age seven, and work with subjects hearing children older than themselves as well as younger or own age group. Analysis of children's speech would need to take into account developmental levels. Interdisciplinary research taking into consideration the areas of concern of psycholinguistic, physiobiological and educational as well as sociolinguistic research is suggested.