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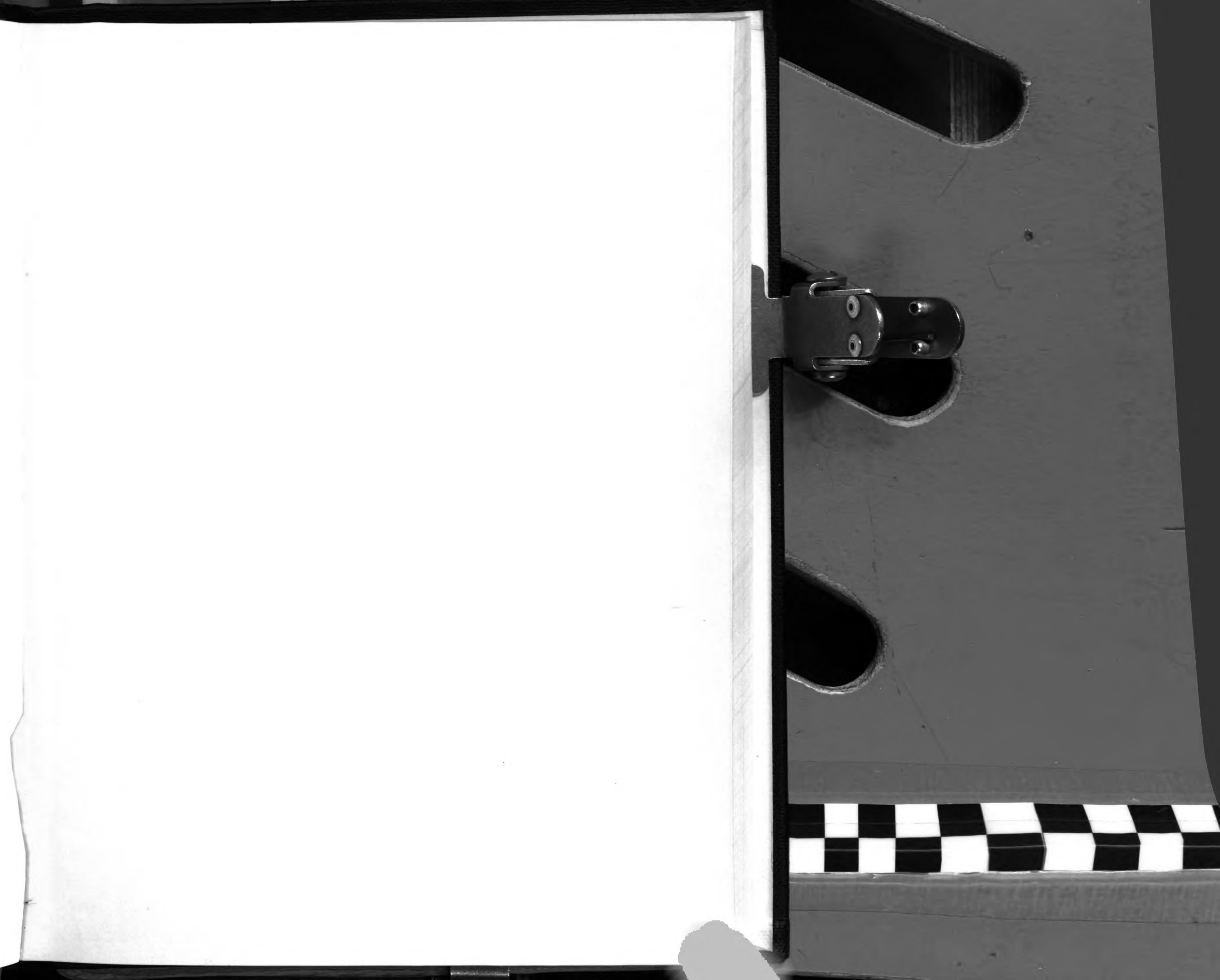
ABSTRACT

EVALUATION OF A TECHNIQUE FOR IDENTIFYING
COMMUNICATION PATTERNS OF MOTHERS AND
PRESCHOOL CHILDREN OF TWO
SOCIOECONOMIC GROUPS

by

Trellis Taylor Waxler

This study attempted to determine if the communi-
cation of children could be reliably coded. It also at-
tempted to identify various communication patterns of chil-
dren during mother-child interaction within the home.

The subjects were nine children attending the
Michigan State University Laboratory Preschool during the
Fall term 1966 and Winter term 1967, and their mothers.

The data used in the study were collected in a
Michigan State University Agricultural Experiment Station
Project 786, "Use of Space, Material and Communication
Among Family Members Performing Family Activities." The
mother and preschool child in each family were observed
performing four selected activites. The communication
data were tape recorded and later transcribed.

Eight five-minute samples of communication between
mother and child were coded using the procedure described
in Magrabi, et al. ("Framework for Studying Family

Patterns," Journal of Home Economics, Vol. 59, Nov. 1967,
714-719).

The communication was coded on two dimensions--
the resource and the mode. A resource is defined as a
concept a sender uses to influence another person. Resources
include fact, preference, direction, and motivation. The
mode is the manner in which the resource is transmitted
to the receiver. Modes include offering, seeking, accepting,
and not accepting. Together they form sixteen mode-
resource categories.

It was found that the coding procedure does dis-
criminate between the sixteen categories. Offering fact,
offering direction, and seeking fact are the most frequently
used categories.

The subjects in the middle socioeconomic group
communicated significantly more than did the subjects in
the lower socioeconomic group. They also seemed to offer
fact more often than did the subjects in the lower socio-
economic group. The subjects in the lower socioeconomic
group offered direction more often.

Intercoder agreement was checked by finding the
agreement between two trained coders. The reliability of
the instrument was also checked. The ability of the coding
procedure to discriminate socioeconomic classes demon-
strated a certain level of validity of the coding procedure.

EVALUATION OF A TECHNIQUE FOR IDENTIFYING

COMMUNICATION PATTERNS OF MOTHERS AND

PRESCHOOL CHILDREN OF TWO

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Trellis Taylor Waxler

A THESIS

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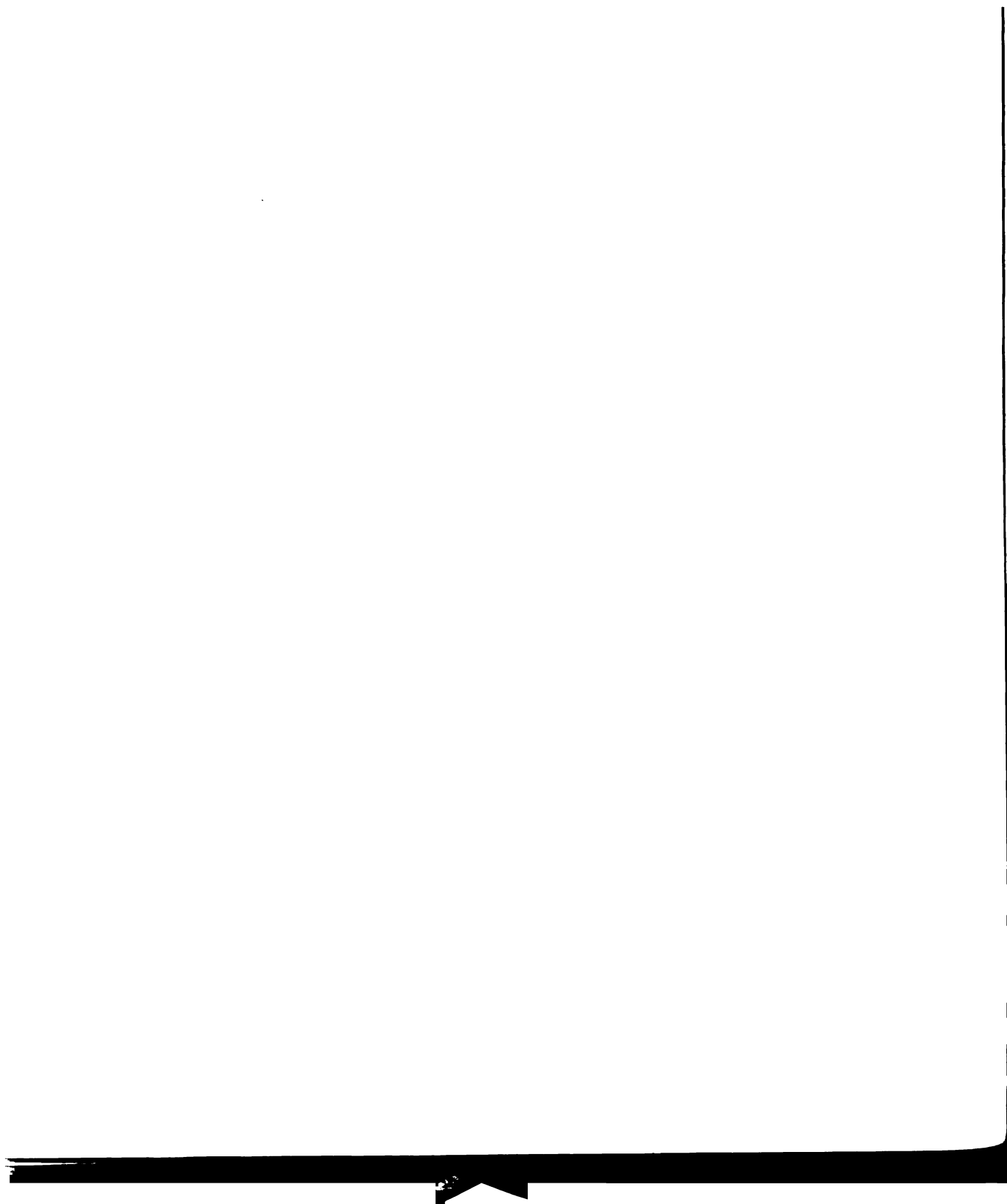for the degree of

MASTER OF ARTS

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1968

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CHAPTER I

INTRODUCTION

Sapir (1949, p. 15) stated that, "The primary func-
tion of language is generally said to be communication."
The development and function of language in children has
been studied by many researchers including Piaget (1925),
McCarthy (1930, 1954), and Templin (1957). Nevertheless
much confusion and controversy exists over the interpreta-
tion of the results of these studies.

McCarthy (1954) feels that many of the discrepancies
in the findings from various studies of the function of
language in children can be accounted for in terms of (1)
differences in definition and interpretation of terms, (2)
the situation in which the responses are recorded, and (3)
individual differences of the children being observed.

Although the immediate situation in which the lan-
guage of the child has been recorded has been recognized
as an important variable, not much cognizance has been
taken of the fact that because of the very nature of lan-
guage and communication this situation is an interaction
process (Smith, 1966). Some of the situations that have
been varied and studied include conversation of child to

1

adult, conversation during outdoor free play, conversation during indoor free play, and outdoor play situations at home.

In studying the function and development of language in children there is a need for a system that has clearly defined terms that are applicable to all communication situations and that take into account the interactive nature of communication.

The procedure of coding communication that was tested in this study is an adaptation of a method of coding interpersonal behavior developed by Richard Longabaugh (1963). Longabaugh (1963, p. 321) stated that ". . . interpersonal actions are dimensionalized on two criteria: (1) the resources(s) salient in the interaction, and (2) the modality used by the actor in connection with the resource." An investigator is free to define resources as he wishes.

There are two requirements for the conceptualization of what resources should be included for study.

> First, the resources measured should correspond to some extent to those actually valued and exchanged by the participants. Secondly, the transmission of these resources must be satisfactorily measured in the situation observed. In practice, the investigator's success in measuring resources present will be indicated by the degree of empirical validity of the obtained measures. (Longabaugh, 1963, p. 321)

Modes in the Longabaugh system are seeking, offering, depriving, accepting, and not accepting.

The Longabaugh categories were modified by Magrabi et al. (1967) in order to make them more appropriate to the

study of family activity patterns within the home. Modes
are defined as seeking, offering, accepting, and not accept-
ing; the salient resources were defined as fact, preference,
direction or command, and motiviation or encouragement.
Together they form sixteen mode-resource categories. This
system was devised to code only verbal communication and
was used by Smith (1968) to code the communication of mothers
interacting with their preschool children.

The data analyzed in this study were collected in a
Michigan State University Agricultural Experiment Station
Project 786, "Use of Space, Material and Communication Among
Family Members Performing Family Activities." The mother
and preschool child in each family were observed performing
four selected activities. The communication data were tape
recorded and later transcribed.

Definition of Terms

Communication is defined as an interaction situation
in which the person speaking transmits a message to the re-
ceiver with the conscious attempt to affect the latter's
behavior. Communication pattern is the frequency of message
units in a particular mode-resource category. A resource
is the concept a sender uses to influence another person or
persons. These include: (1) fact, (2) preference, (3) di-
rection, and (4) motivation. Mode is the manner in which
the resource is transmitted to the receiver. This include:

(1) offering, (2) seeking, (3) accepting, and (4) not accepting. Each attempt to transmit a single thought or idea from one person to another is a message unit (Smith, 1968).

Assumption

It was assumed that verbal communication can be differentiated into categories for analysis. That is, communication can be categorized in terms of its salient modes and resources.

Objectives

The first objective was to test the reliability and validity (insofar as possible) of the Magrabi et al. procedure for coding the comunication of children. As Longabaugh (1963, p. 321) stated, "If the defined resources cannot be measured reliably--or, once measured, they fail to have empirical validity--then it is likely that the conceptualization of resources has been inadequate."

The second objective was to identify the various communication patterns of children using the Magrabi coding procedure. The following comparisons were made:

1. Comparison of mother and child on the sixteen mode-resource categories utilized in the Magrabi procedure.

2. Comparison of the two groups of children on the sixteen mode-resource categories.

3. Comparison of mother and child on the four mode categories utilized in the Magrabi procedure.

4.   Comparison of the two groups of children on the four mode categories.

5.   Comparison of mother and child on the four resource categories.

6.   Comparison of the two groups of children on the four resource categories.

7.   Comparison of the responses of the two groups of children to various communication patterns of the mothers.

Hypothesis

The general hypothesis upon which this study was based is that communication patterns are learned by imitation of the model of the mother and hence communication patterns of children will be related to the communication patterns of their mothers. The communication patterns of the children and the mothers from the two socioeconomic groups were expected to be different. Using a three-factor analysis of variance seven relationships were statistically tested:

1.   Difference between socioeconomic levels.

2.   Difference between mother and child.

3.   Interaction between socioeconomic level and family membership (mother and child).

4.   Difference between the sixteen mode-resource categories (codes).

5.   Interaction between socioeconomic level and codes.

6.   Interaction between family membership and codes.

7.   Interaction between socioeconomic level, family
membership, and codes.
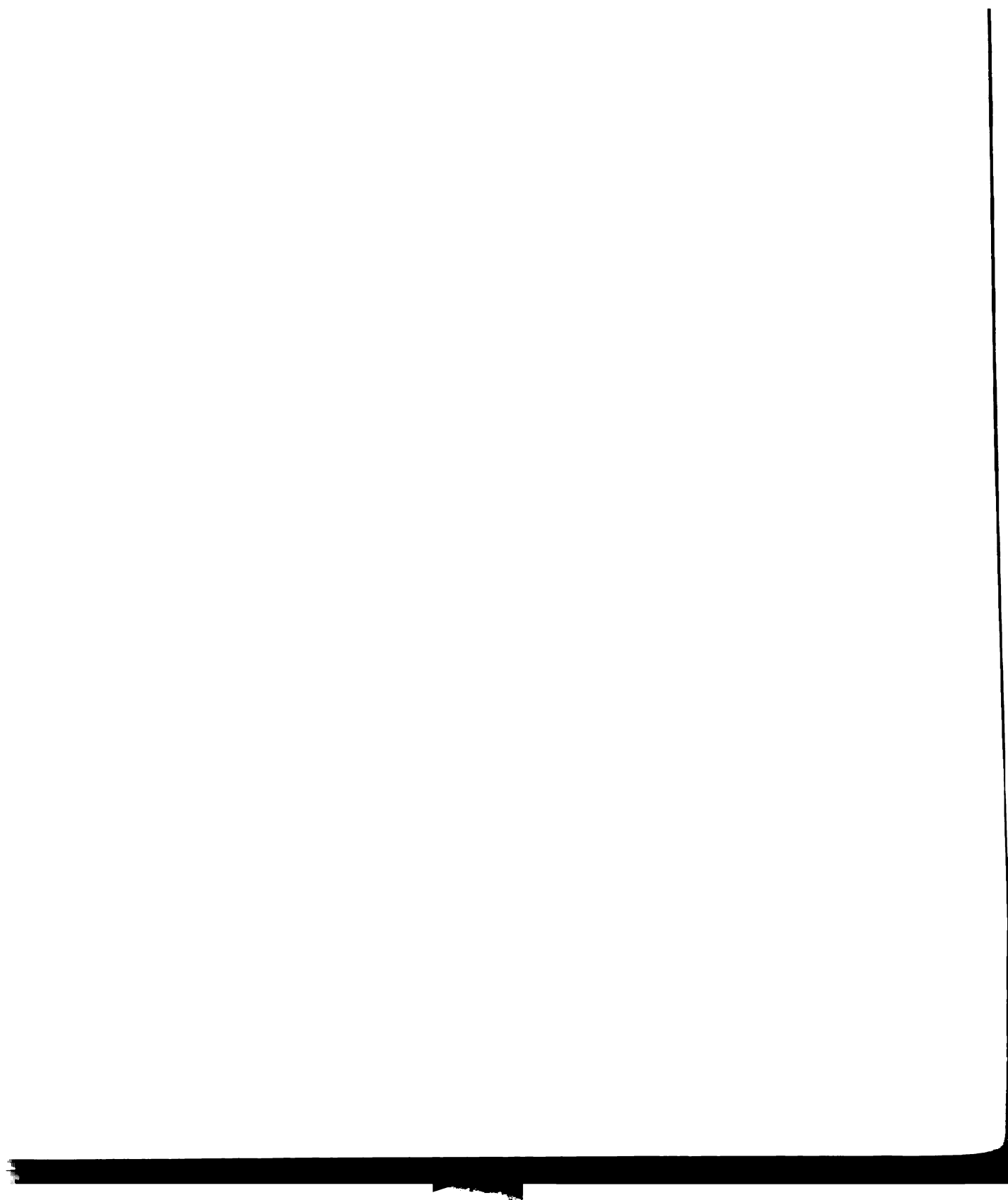
CHAPTER II

REVIEW OF LITERATURE

The review of literature is divided into four parts:
(1) the function of language, (2) influence of the situation,
(3) the influence of social class, and (4) the coding of com-
munication.

Function of Language

Susan Ervin-Tripp in her review of language develop-
ment stated that, "The greater theoretical agreement and
methodological precision in the study of linguistic form
has led to a natural emphasis on this aspect of children's
language, in contrast to studies of function where one must
devise testing methods and even social theories." (Ervin-
Tripp, 1966, p. 85)

Language is one of the ways in which we express our
ideas (Berlo, 1960). The main purpose of human communica-
tion as far as he is concerned is to affect the behavior of
others. He states that, "All communication behavior has as
its purpose the eliciting of a specific response from a
specific person (or group of persons)." (Berlo, 1960, p.
14) He listed five verbal communication skills:

(1) writing, (2) speaking, (3) reading, (4) listening, and
(5) reasoning or thought. This study was concerned with
spoken communication.

John Dewey (1925) and Edward Sapir (1949) agree that
the primary purpose of language is communication. "The
heart of language is not 'expression' of something anteced-
ent, much less expression of antecedent thought. It is com-
munication. . . ." (Dewey, 1925, p. 178)

In 1926 Piaget's book The Language and Thought of
the Child was published. This book presented a new approach
to the study of the function of language. Piaget was mainly
interested in the child's language as a means of revealing
his thought processes. Egocentric speech and socialized
speech were the two types of sppech that Piaget found in
the child's language. In egocentric speech, as defined by
Piaget, the child does not bother to know to whom he is
speaking nor whether he is being listened to. In socialized
speech the listener must be considered. The speaker must
consider the point of view of the listener, and try to in-
fluence him or exchange views with him. Egocentric speech
is defined as (1) repetition, vocalization in which the
child reports words and syllables for the pleasure of talk-
ing; (2) monologue, in which the child talks to himself as
though he were thinking aloud; (3) collective monologue, in
which another child is present but his point of view is
never taken into account. Socialized speech is defined as

(1) adapted information, when the child really exchanges his thought with others; (2) criticism, which includes remarks about the work or behavior of others; (3) commands, requests, and threats; (4) questions; and (5) answers. Socialized speech corresponds to communication as defined by Berlo (1960).

Miller (1951) sees language as serving four main functions: (1) to increase uniformity of information, (2) increase uniformity of opinion, (3) to change statuses in groups, and (4) to express emotion.

As we can see from the above theorists, language does serve many functions. Nevertheless, it does appear to this writer that the main function of language is that of communication. According to Gerald Miller (1966) communication has as its main focus ". . . those behavioral situations in which a source transmits a message to a receiver(s) with conscious intent to affect the latter's behaviors." (Miller, 1966, p. 92) Therefore, this study was designed to study communication that takes place in the home in which a mother and her preschool child are performing some household activity.

Influence of Situation

Piaget (1926) estimated that 38 per cent of a six year old child's remarks were egocentric and 62 per cent were socialized. Whereas Piaget made records on the verbal

behavior of two children during free play, McCarthy (1930) in her repetition of his work stimulated the child's speech by the use of pictures of animals, illustrated Mother Goose rhymes, and toys consisting of an auto, a cat, a telephone, a mouse, a music box, and a small ball. There were 140 children in McCarthy's study ranging in age from 18 months to 54 months. McCarthy reported that only 3.6 per cent of the vocalizations of these children were egocentric in nature.

One of the major differences between McCarthy's and Piaget's studies is that McCarthy's children talked with an adult. In Piaget's original work two children talked to each other.

In her review of the work done on language development of children, McCarthy (1954) found that many of the discrepancies in the various studies of the function of language in children can be accounted for in terms of (1) differences in definition and interpretation of terms, (2) the situation in which the responses are recorded, and (3) individual differences of the children being observed.

Reviewing the same literature on the function of language in children, Irwin (1960) concluded that the quantitative discrepancies in the per cent of egocentric versus socialized speech were not due to the method of data collection but to the manner of categorizing the data. That is, he did not believe that the method of data collection or

the situation in which the data are collected was as impor-
tant as they way the data were ultimately classified. He
was more concerned with how an investigator defined egocen-
tric or socialized speech.

McCarthy would certainly agree with Irwin. She
stated that differences in definition and interpretations
of terms played a big part in studies dealing with the func-
tion of language in children. However, she did find in her
1954 review of the literature that the situation in which
the language responses were recorded did have an effect upon
the results. For example, children used longer sentences
in conversation with adults than they used in conversation
with other children. Medorah Smith (1935) found that chil-
dren used longer sentences and asked more questions when
talking with adults.

This writer agrees with McCarthy's three points.
For this particular study a distinction between egocentric
and socialized speech is not of particular importance be-
cause of the nature of the situation in which the data were
collected. Communication is socialized speech (Cherry,
1966). The speaker, in order to communicate must consider
the position of the listener. The situation in which the
language was recorded was controlled. All children were
talking with their mothers in a home setting while perform-
ing four selected activities. Therefore, one can conclude
that the majority of the communications were socialized.

Influence of Social Class

Although it is recognized that differences, e.g., sex and age, might be important for language development, only differences due to social class membership were considered in this study.

There appear to be many class and cultural variations in the function and values attached to language. For example, Bernstein (1966) proposed a social class theory of communication in which he defined two codes of communication--restricted and elaborated. The first code emphasizes social relations and the second emphasizes information and opinion exchange. In order for an elaborated code to develop a speaker must consider the listener. The speaker is forced to expand and elaborate his meanings so that he will be understood. A person with only a restricted code cannot or does not consider the listener. Berstein noted that the middle class used both codes whereas the lower class used only the restricted code.

Berstein stated that as a child progresses through school it is important that he possess, or at least be oriented toward, an elaborated code if he is to succeed. He stated that: "The learning generated by these systems is quite different, whether it be social, intellectual, or affective. From a developmental perspective, an elaborated code user comes to perceive language as a set of theoretical

possibilities available for the transmission of unique experience." (Bernstein, 1966, p. 438)

According to this theory language structures and conditions what the child learns and how he learns, setting limits within which future learning may take place. The elaborated code is very important for learning. In it communication is specific to a particular situation, topic or person. It permits experience of a wide and complex range of thought. If this theory is correct then the lower class child who uses the restricted code exclusively is doomed to failure in our school system.

With this in mind Hess and Shipman (1965) have reported a series of studies testing derivations from Bernstein's theory. They have compared behavior of Negro mothers and children of various social classes and communication between them in experimental situations.

They used 160 mothers with 4-year old children selected from four different social status levels. The groups were upper middle class, upper lower class, lower lower class, and ADC mothers. The mothers were interviewed in their homes and later brought to the university ". . . for an interaction session between mother and child in which the mother was taught three simple tasks by the staff member and then asked to teach these tasks to the child." (Hess and Shipman, 1965, p. 874) They found that middle and lower class mothers differed little in the affective

elements of their interaction with their children. The differences appeared in the verbal and cognitive environments that they presented. The middle class mothers talked more with their children. Middle class mothers gave more explicit information about a task to their children and they used more abstract words with their children than did the lower class mothers.

Marge (1965) also found that home background played an influential part in the development of oral communication skills in children. He used 143 11-year old white subjects, their parents, and their teachers. The children were measured on 40 speech and language factors by classroom teachers and speech specialists. Marge found that permissive mothers have children who achieve high scores on language maturity. Although he had data on the socioeconomic status of each family he did not analyze social class differences. All of his data about parent-child relations were collected by means of questionnaires. This writer believes that the study would have been more informative if the child and his parent had been observed together.

In a study of verbal performance of 30 middle-aand lower-class males (ages 9-12) Schwebel (1966) found that middle class children described more ideas and events, used longer and better developed sentences, gave more accurate descriptions, and grouped objects more effectively. The children were compared on four standard tasks: (1) Picture

Description Task, (2) Events of the Day, (3) Sentence Con-
struction Task, and (4) Grouping of Objects Task. Schwebel
concluded that the inadequately developed vocabularies of
the lower class children resulted from a lack of parental
stimulation. This conclusion does seem to be consistent
with Bernstein's theory and Hess and Shipman's findings.

After analysis of data gathered from the partici-
pants in a natural disaster Schatzman and Strauss (1955)
concluded that one of the differences between the communica-
tion of the middle and lower class was that the person be-
longing to the lower class in answering questions could not
take the listener's role. Their explanations were not ade-
quate enough to make their meaning clear to a listener.
In other words, the lower class person fails to communicate
because he does not or cannot adequately consider the lis-
tener.

In a review of the literature on the language devel-
opment in socially disadvantaged children Raph (1965) found
that the process of language acquisition for socially dis-
advantaged children, in contrast to that of middle class
children, is more subject to: (a) a paucity of experiences
in conversations with more verbally mature adults in the
first three or four years of life, (b) severe limitations
in the opportunities to develop mature cognitive behavior,
and (c) the types of emotional encounters which result in
the restrictions of the children's conceptual and verbal

skills. As did Berstein, Raph found that disadvantaged children have a meagerness of quantity and quality of verbal expression which serves to depress intellectual functioning as the children grow older.

It does appear from the literature that there are class differences in language ability. It was expected that the coding procedure used in this study would discriminate between the two socioeconomic classes used in the study.

Coding of Communication

"Language is specifically a mode of interaction of at least two beings, a speaker and hearer. . . ." (John Dewey, 1925, p. 185) The problem is how to code or categorize communicative acts so that the interactive nature of language is considered.

One of the first social scientists to code interpersonal behavior was Bales (1950). He developed an interaction process analysis system. In his system all spoken or gestured acts are placed in one of twelve categories. This method uses on-the-spot coding.

Using a social exchange model, Longabaugh (1963) divided each communication message into (1) resources salient in the interaction and (2) modes of transmission. Resources are information, support, and control. Modes are seeking, offering, depriving, accepting, and not accepting. Longabaugh also used on-the-spot coding.

Observers were required to make judgments as to whether any bit of behavior was a social act. He stated that, "A social act was operationally defined as any coherent bit of behavior by an actor which was judged by the observer to have the intent of acting as a stimulus for a response by an present other." (Longabaugh, 1963, p. 329)

Longabaugh attempted to validate his category system in a pilot study using 51 mother-child dyads. The children ranged in age from 5 to 12 years of age. The dyads were observed in a waiting room from behind a one-way mirror. The mother was asked to fill out a short questionnaire in which she might or might not seek information from her child. The interaction of mother and child was coded while the mother filled out the questionnaire. The dyad was observed for five minutes after the mother had completed the questionnaire.

The reliability of two observers in coding the interaction was found to range from as low as 38 per cent to as high as 92 per cent. The two observers had simultaneously coded 49 of the 51 experimental sessions. The median percentage agreement for the 49 sessions was 60 per cent.

Magrabi et al. (1967) adapted Longabaugh's model by modifying the categories of salient resources to make them more appropriate to the study go family activity patterns within the home. The salient resources in this system are fact, preference, direction or command, and motivation or encouragement. The Magrabi coding procedure was

designed to code only verbal behavior collected by use of a tape recorder. It does not use on-the-spot coding.

Smith (1968) in attempting to identify the communication patterns of mothers used the Magrabi method to code the communication of mothers interacting with their preschool children. She related various situational variables, such as (1) number of community moves since marriage, (2) amount of time spent by mothers in household tasks, (3) amount of help with household duties, (4) mother's educational level, (5) father's daily hours away from home due to employment, (6) family income, and (7) frequency of eating dinner together, to the mother's communication patterns. She found that the situations or factors most frequently related to the communication patterns were: (1) family size and composition, (2) number of community moves since marriage, (3) amount of time spent by the mother performing household chores, and (4) amount of help with household duties.

Smith used two graduate students to code the communication of the mothers. The agreement of the two coders using this system to code a five-minute sample of communication was 85.6 per cent.

Summary

Language is not only important for communication, absorption, and interpretation of the environment, but it also reflects highly acculturated styles of thought and

ideational modes for solving and not solving problems. As
one studies the background influence on qualitative vari-
ables in language and language development one also studies
the effects of the same influence on cognitive development
and problem solving styles and abilities (Deutsch, 1965).

A review of the literature has shown that social
class has a great influence upon the language development
of the child. Language itself has been shown to be related
to the intellectual development of children.

One function of language is that of communication.
As humans we have a need to share our thoughts with our
fellow man. Communication was described as a process of
interaction that included at least two persons--a speaker
and a listener--in which the speaker tries to influence
the behavior of the listener. The situation in which the
language of the child is recorded has been shown to be a
vital factor in explaining results of language studies.

Methods of analyzing or coding language that take
into account the interactive nature of language were re-
viewed. This method must be flexible enough to handle data
that are gathered under many situations, such as the natural
setting of the home. Since the literature has emphasized
the importance of the influence of the parent upon the lan-
guage development of the child, the method of coding used
in this study had to be able to analyze the language of
adults as well as the language of children.

CHAPTER III

METHODS AND PROCEDURES

Communication is described as one of the main func-
tions of language. Communication as defined by this study
is an interaction process in which the person speaking
transmits a message to the receiver with the conscious at-
tempt to affect the latter's behavior.

It was assumed that verbal communication can be
meaningfully differentiated into categories for analysis.

The hypothesis upon which this study was based is
that communication patterns are learned by imitation of a
model. Several comparisons were made of the various sub-
jects.

Selection and Description of Sample

The data analyzed in this study were collected in
a Michigan State University Agricultural Experiment Station
Project 786, "Use of Space, Material and Communication Among
Family Members Performing Family Activities."

Data for Project 786 were obtained by observing a
mother and preschool child in each of ten urban families
in the Lansing area performing four selected activities.

The sample was drawn from a group of thirty families with children enrolled in the Laboratory Preschool at Michigan State University. Five of the families were from a lower socioeconomic class and five were from the middle socioeconomic level. Data for one of the lower socioeconomic class families are incomplete because of a death in the family, therefore only nine families were included in this study.

The socioeconomic levels of the families were indicated by the educational attainment of the parents and by the family's annual income. The income for the middle class families ranged from $8500 to over $15000. The lower socioeconomic group had incomes ranging from $1500 to $6499 (Table 1).

All of the middle class wives and husbands had some college education. Two of the husbands had Ph.D. degrees, one was a candidate for the doctorate, one had a B.A. degree, and one had some college. One of the middle class mothers was a candidate for a master's degree, one had done some graduate work, one had a B.A. degree, and two had some college experience (Table 2).

Of the four lower socioeconomic level families only one was a complete family in the sense that both husband and wife were present. The father in this one family had some high school education. One of the lower socioeconomic level mothers had some college, two were high school

Table 1.--Annual Income Per Family

	Family Identification Number								
	Middle Class						Lower Class		
	1	2	3	4	5	6	7	8	9
Income Per Year	$ 9,500 to 10,499	$4,500 to 6,499ᵃ	$11,500 to 12,499	$8,500 to 9,499	$15,500 and over	$1,500 to 2,499	$2,500 to 3,499	$5,500 to 6,499	$3,500 to 4,499ᵇ

ᵃAnticipated income $11,500 to 12,499 for next year.

ᵇADC recipient.

Table 2.--Distribution of Families According to Level of
Education of Parents

	Level of Education						
	Some High School	High School Graduate	Some College	Bachelor's Degree	Master's Degree	Doctorate	Total
Mothers	1	2	3	2	1	0	9
Fathers	1	1	1	1	1	2	7[a]

[a]Two husbands educational level not given.

graduates, and one had some high school training. Tables
3 and 4 provide additional background information on age
of parents and the number of children in each family.

Collection of Data

The data were collected during the Fall Term 1966
and Winter Term 1967 through the use of interviews, obser-
vations and recordings of verbal communication.

The interview schedules were designed to obtain
biographical information and information about household
routine and equipment. The interview was useful in getting
needed information and it also helped the interviewer es-
tablish rapport with the subjects. The careful establish-
ing of rapport was essential because the observer had to

Table 3.--Number of Children Per Family

	Family Identification Number									
	Middle Class					Lower Class				
	1	2	3	4	5	6	7	8	9	Total
Number of Children	3	4	2	2	2	2	3	3	6	27

Table 4.--Age of Parents in Each Family

	Family Identification Number								
	Middle Class					Lower Class			
	1	2	3	4	5	6	7	8	9
Mothers	32	33	31	33	42	31	24	28	26
Fathers	35	35	32	41	42	a	b	28	33[c]

Mean age of Mothers: 31
Mean age of Fathers: 35

[a]Divorced--age not given.

[b]Single--age not given.

[c]Separated.

be in the home and a part of the scene without actually participating in the activities.

Remaining a nonparticipant was difficult for the observer because even though it was explained to the families that the observer was not to talk, many families tended to

draw the observer into their conversations. None of the conversations between subjects and observer was coded.

Each of the nine families was observed participating in four shared activities. Although the observer suggested activities that the families might do, the families were free to do what they wished. The actual activities included: (1) cookie making, (2) tree trimming, (3) bed making, (4) meal preparation, (5) dressing, (6) story telling, (7) playing with toys, (8) feeding pets, (9) putting away groceries, and (10) making valentine cards.

For one family all four activities were observed on one day. Two families were observed on two different occasions. Six of the families were observed on four different days.

The verbal communication for each family was tape recorded during the observation period using a portable battery-operated tape recorder. The equipment allowed the observer to be very mobile. It meant that subjects could be followed throughout the house and outside if necessary as they engaged in their various activities.

Coding the Data

Once the communication data were tape recorded it was transcribed so that a permanent record of the communication could be kept. The written transcriptions facilitated working with the data. In the communication transcriptions the person speaking and the person(s) spoken to were identified.

The Magrabi et al. adaptation of the Longabaugh (1963) coding procedure was used to code the communication data. This coding procedure is a two part system that uses both resources and modes.

Resources are defined as:

1. Fact. That which actually exists or has actually occurred. That which is known by observation or experience to be true or real.

Example: "This is a car."

2. Preference. The choosing of one person or thing over another or others. The act of preferring.

Example: "I want to give away the green dress."

3. Command. To order, require, instruct or enjoin with authority. It includes self direction.

Example: Don't turn the stove on yet!"

4. Motivation. That which incites a person to some action or behavior. To inspire, hearten, help, or foster. To be favorable toward.

Example: "That's a good girl."

The modes are defined as follows:

1. Offering. To present for acceptance or rejection, suggest for consideration or action. They are usually declarative sentences.

Example: "This is a beautiful day."

2. Seeking. To search for, strive for, try to get or obtain, ask, inquire, or request. They are usually stated in question form.

Example: "Is this a beautiful day?"

3. Accepting. The act of receiving with favor. To give an affirmative answer.

Example: "That's fine with me."

4. Not accepting. The act of rejecting, refusing, disagreeing, disapproving. To receive with disfavor.

Example: "I will not clean my room!"

The four resources and the four modes form the sixteen categories of the coding system. These categories are: offering fact, offering preference, offering direction, offering motivation, seeking fact, seeking preference, seeking direction, seeking motivation, accepting fact, accepting preference, accepting direction, accepting motivation, not accepting fact, not accepting preference, not accepting direction, and not accepting motivation.

When coding the communication data it was necessary to decide which resource and which mode was being used separately. First, the resource was coded and then the mode was coded. This meant that it was very easy to compare the mode, the resource, and the mode-resource categories that each subject used.

Table 5 demonstrates how the coding was done. "A" can represent three different things: (1) an offering,

Table 5.--Paradigm of Mode-Resource Categories

Resources	Modes			
	Offering	Seeking	Accepting	Not accepting
Fact	A		B	
Preference		C		
Direction				
Motivation				

(2) fact, and (3) offering fact. "B" represents, (1) accept-
ing, (2) fact, and (3) accepting fact. "C" represents (1)
seeking, (2) preference, and (3) seeking preference.

The data that were coded for this study included
eight five-minute samples of conversation chosen for each
mother-child dyad. A total of forty (40) minutes of con-
versation for each dyad was selected. The one requirement
for selecting a five minute sample was that the mother must
have transmitted at least ten message units per five-minute
period.

Intercoder Agreement

Two coders, the writer and another graduate student,
were trained to use the coding procedure by familiarizing
themselves with the definition of terms and practicing

coding communication. A third graduate student who had used the method previously worked with the two coders for approximately three hours.

The verbal communication of the family that was dropped from the sample was used in the practice sessions. After the training period was over the two coders independently coded all of the communication of the nine families that were to be used in the study. The coding done by the second coder was only used for purposes of checking intercoder agreement. Differences between the two coders were not reconciled.

Intercoder agreement was checked by dividing the number of agreements by number of agreements plus number of disagreements, $\left(\dfrac{\text{agreements}}{\text{disagreements} + \text{agreements}} \right)$. This particular formula was used by Longabaugh (1963) in obtaining intercoder agreement. The intercoder agreement for this study was 65 per cent compared with an overall agreement of 60 per cent found by Longabaugh (1963).

Smith (1968) used the Magrabi method to code the communication of mothers interacting with their preschool children. The agreement of two coders using this system to code a five-minute sample of communication was 85.6 per cent. The difference in the intercoder agreement of this study and the Smith study could be in the amount of coding done by the four coders. The Smith agreement was found for a five minute sample. The agreement for this study was found for all of the subjects which means a total of 360 minutes.

Reliability

Reliability was calculated in two different ways. The first way determined the stability of the amount communicated across sessions. The second determined the reliability of the coding itself. Both reliability measures were odd-even calculations and were computed separately for mothers and children. The Spearman-Brown correction was used (Anastasi, 1961).

Validity

One method of testing for the validity of an instrument is to use extreme groups (Adkins, 1947). This was the method of checking for validity used in this study. The two groups of subjects are extreme groups in socioeconomic level. The difference between the two groups should be significant.

Analysis of Data

The data were analyzed using a three factor analysis of variance and various descriptive techniques.

The analysis of variance used was a three-factor model with one repeated measure (Winer, 1962). The repeated measure was the codes; socioeconomic status and family membership (mother-child dyad) were the other two factors. Since the significance of the difference between middle and lower socioeconomic status was the primary statistical

question, a simple t-test could have been used. However, two serious errors would have been committed by using the t-test:

1. Two sources of variability in the measurements would have been ignored.

2. The Alpha (significance) would have been inflated, e.g., the tabled value of .05 for a "t" with 17 degrees of freedom might in fact be .06, .10, or .20. The use of the three-factor analysis of variance avoided these errors. Table 6 summaries the methods used in the analysis of the data. A conservative test of significance was used to test for differences in the means (Winer, 1962).

Table 6.--Methods Used in Analysis of Data.

Purpose of Analysis	Data Used in Analysis	Statistic Used
Test of Significance		
Difference between socio-economic levels.	Message units for subjects on 16 mode-resource categories.	Analysis of variance and F-test.
Difference between family membership.		
Interaction between socioeconomic level and family membership.		
Difference between codes.		
Interaction between socioeconomic level and codes.		
Interaction between family membership and codes.		
Interaction between socioeconomic level, family membership, and codes.		
Reliability		
Across sessions.	Total message units for all subjects on the 16 codes for sessions one and three compared to sessions two and four.	Correlation coefficient, Spearman-Brown correction.
Across categories.	Total message units for all subjects for the four sessions on odd-even categories.	Correlation coefficient, and Spearman-Brown correction.

Table 6.--Continued.

Purpose of Analysis	Data Used in Analysis	Statistic Used
Validity		
Difference between socio-economic level.	Message units for all subjects on 16 mode-resource categories.	Analysis of Variance and F-test.
Comparisons		
Mother and child on the 16 categories.	Message units for all subjects on the 16 mode-resource categories, the four resource categories, and the four modes.	Percentages.
Two groups of children on the 16 categories.		
Mother and child on the four modes.		
Two groups of children on the four modes.		
Mother and child on the four resources.		
Two groups of children on the four resource categories.		
Two groups of children's responses to various communication patterns of their mothers.		

CHAPTER IV

PRESENTATION AND DISCUSSION OF RESULTS

This chapter is divided into several sections: (1) reliability, (2) validity, (3) identification of communication patterns, (4) relationships tested by the analysis of variance, and (5) limiations of the study.

Reliability

Table 7 shows that the reliability coefficients for sessions were as high for children as they were for mothers. These coefficients indicate that the measurements were stable across sessions. Table 7 also shows that the reliability of the code was as high for children as for mothers when the Spearman-Brown correction was used. However, the non-corrected coefficient was not significantly different from a coefficient of zero for the mothers.

Table 7.--Reliability Between Observation Sessions and Code Categories

	Session Reliability			Code Reliability		
	N	Not Corrected	Corrected	N	Not Corrected	Corrected
Mothers	9	.79[a]	.89[a]	9	.43[NS]	.60[a]
Children	9	.82[a]	.90[a]	9	.48[b]	.65[a]

[a]$p < .01$.
[b]$p < .05$.

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Validity

Table 8 shows that the socioeconomic levels differ significantly (p < .001) in the amount communicated. In addition, Table 9 shows that this difference is in the same direction as reported by Hess and Shipman (1965), i.e. the middle class communicates more than does the lower class. Moreover, the statistically significant interaction of socio-economic level and the codes (Table 8) confirms other results found by Hess and Shipman (1965), i.e. the middle class offered fact proportionately more than the lower class (Table 10).

Identification of
Communication Patterns

Several comparisons were proposed in Chapter I. They are based on percentages so that each comparison can be made across socioeconomic levels and within family groups.

Comparison I. The first comparison was of the mother and child on the sixteen mode-resource categories utilized in the Magrabi et al. coding procedure. Table 11 shows this comparison.

Comparison II. This comparison is of the two groups of children on the 16 categories. This comparison is also contained in Table 11.

As we can see from Table 11 not all of the categories are used by these families. The raw data on the mode-resource categories does show that all categories are used

Table 8.--Summary of Analysis of Variance

Source of Variation	df	MS	F
Between Subjects	<u>17</u>		
Socioeconomic level	1	3,836.701	12.167[a]
Family membership	1	3,120.500	9.896[a]
Socioeconomic level X family membership	1	69.565	.221[NS]
Subj. within group (error between)	14	315.338	
Within Subjects	<u>270</u>		
Mode-resource categories	15	7,764.251	50.236[b]
Socioeconomic level X mode-resource categories	15	1,133.799	7.336[c]
Family membership X mode-resource categories	15	1,060.507	6.862[c]
Socioeconomic level X family membership X mode-resource categories	15	105.046	.680[NS]
Mode-resource categories X subj. within group (error within)	210	154.554	

[a]$(p < .001) = 8.86.$

[b]$(p < .001) = 8.53.$

[c]$(p < .025) = 6.12.$

Table 9.--Total Number of Message Units of Mothers and
Children for Each Socioeconomic Level

Socioeconomic Level	Mothers	Children	Total	Number of Subjects
Middle	1478	881	2359	10
Lower	649	298	947	8
TOTAL	2127	1179	3306	18

by someone except seeking motivation and not accepting
motivation (Appendix I).

Table 11 shows that there were differences in the
categories utilized by the families. The children of both
groups offer fact proportionately more than their mothers.
The lower socioeconomic children used the category of not
accepting direction proportionately more than the middle
socioeconomic level children.

Mothers offered direction proportionately more than
the children. The lower socioeconomic status mothers offer
direction proportionately more than the middle class mothers.
The middle socioeconomic status mothers offer fact propor-
tionately more often than the lower socioeconomic mothers.

Comparisons III and IV. Comparison was made of the
mother and child on the four modes of offering, seeking,
accepting, and not accepting. Comparison IV was made of
the two groups of children on the four modes. Table 12
contains comparisons III and IV.

Table 10.--Mean Number of Message Units for Each Socioeconomic Level for Each Mode-resource Category

Socio-economic Level	OFFERING				SEEKING				ACCEPTING				NOT ACCEPTING				Sum Total
	F	P	D	M	F	P	D	M	F	P	D	M	F	P	D	M	
Middle	98.30	4.90	58.30	8.60	33.60	5.90	3.80	0	10.90	1.80	4.60	.20	2.90	.70	1.40	0	2359
Lower	33.25	2.75	46.38	1.75	22.25	2.00	.50	0	1.75	.38	.75	0	2.00	.38	4.25	0	947
Sum Total	1249	71	954	100	514	75	42	0	123	21	52	2	45	10	48	0	3306

Table 11.--Percentage of Message Units in the Mode-Resource
Categories for Mothers and Children in Each
Socioeconomic Group

| | Mode-Resource Categories | | | | | | | | | | | | | | | |
| | OFFERING | | | | SEEKING | | | | ACCEPTING | | | | NOT ACCEPTING | | | | |
	F	P	D	M	F	P	D	M	F	P	D	M	F	P	D	M	Total
Middle Class																	
Mothers	39	1	29	5	14	4	1	0	4	0	1	0	1	0	0	0	1478
Children	46	4	18	1	14	1	2	0	5	1	3	0	1	0	1	0	881
Lower Class																	
Mothers	20	1	48	2	21	2	0	0	2	0	0	0	2	0	1	0	649
Children	45	6	19	0	15	1	1	0	1	0	2	0	1	0	8	0	298

Table 12.--Percentage of Message Units in Each Mode for
Mothers and Children of Each Socioeconomic
Level

| | Modes | | | | |
	OFFERING	SEEKING	ACCEPTING	NOT ACCEPTING	Total
Middle Class					
Mothers	73	19	6	2	1478
Children	70	17	10	2	881
Lower Class					
Mothers	72	23	2	4	649
Children	70	17	3	10	298

Offering and seeking are the most frequently used modes for all groups. The middle class children used the accepting category proprotionately more often than the mothers of both groups and the children of the lower socio-economic group. The lower socioeconomic children used the not accepting mode proportionately more often than any of the other three groups of subjects.

Comparisons V and VI. These comparisons are of the four groups of subjects on the four salient resources-- fact, preference, direction, and motivation. Table 13 contains these comparisons.

Table 13.--Percentage of Message Units in each Resource for Mothers and Children of Each Socioeconomic Level

| | Resources | | | | |
	Fact	Preference	Director	Motivation	Total
Middle Class					
Mothers	58	5	31	5	1478
Children	67	7	25	1	881
Lower Class					
Mothers	44	3	50	2	649
Children	62	7	30	0	298

All of the salient resources are utilized by the subjects. Motivation and preference were not used very often by any of the subjects. The most frequently used

resource categories were fact and direction. The lower
socioeconomic status mothers utilized the direction resource
proportionately more than the other groups.

Comparison VII. This comparison is of the responses
of the two groups of children to various communication pat-
terns of their mothers. Three communication patterns of
the mothers were chosen for these comparison--offering
fact, offering direction, and seeking fact. These three
patterns were chosen because they were the most frequently
used categories for all subjects.

Tables 14, 15 and 16 contain these comparisons.
The tables represent the immediate responses of a child
after the mother used one of the three categories being
analyzed. If the mother made an intervening comment that
was not in the same category as the one being considered
then the child's next comment is not included in the tables.
These figures do not represent the complete responses for
the child in that particular category because in many
instances the child does not respond after the mother com-
municates. For example, child 7, Table 14, made only one
response to his mother's offering fact category.

On the average when a mother offered fact, a
child made several types of responses. He (1) offered
fact, (2) offered preference, (3) offered direction, (4)
sought fact, (5) sought direction, (6) accepted fact, and
did not accept fact. The nine other categories were not
used.

Table 14.--Percentage of Children's Responses in Each Mode-Resource Category to Mothers' Offering Fact[ual]

Family Identification Number	Mode-Resource Categories																Total
	OFFERING				SEEKING				ACCEPTING				NOT ACCEPTING				
	F	P	D	M	F	P	D	M	F	P	D	M	F	P	D	M	
1	43	5	19	0	19	0			10				5				21
2	57	2	3	0	11	2			25				0				61
3	24	5	14	3	35	3			11				5				37
4	29	6	19	0	10	0			26				10				31
5	21	10	10	0	21	0			16				21				19
6	45	10	0	0	25	0			5				15				20
7	0	0	0	0	100[a]	0			0				0				1
8	27	0	27	0	27	0			9				9				11
9	33	0	11	0	33	0			11				11				9

[a]Represents one response.

Table 15.--Percentage of Children's Responses in Each Mode-Resource Category to Mothers' Offering Direction

Family Identification Number	OFFERING				SEEKING				ACCEPTING				NOT ACCEPTING				Total
	F	P	D	M	F	P	D	M	F	P	D	M	F	P	D	M	
1	44	0	22	17		0	0		0		11				6		18
2	50	0	20	20		10	0		0		0				0		10
3	20	0	17	10		0	27		5		20				0		40
4	21	0	14	0		7	14		0		36				7		14
5	23	8	15	31		0	0		0		15				8		13
6	25	16	22	6		0	0		0		3				28		32
7	43	14	29	0		0	0		0		0				14		7
8	30	0	10	20		0	0		0		10				30		10
9	18	9	27	9		0	9		0		9				18		11

Mode-Resource Categories

Table 16.—Percentage of Children's Responses in Each Mode-Resource Category to Mothers' Seeking Fact

Family Identification Number	Mode-Resource Categories																Total
	OFFERING				SEEKING				ACCEPTING				NOT ACCEPTING				
	F	P	D	M	F	P	D	M	F	P	D	M	F	P	D	M	
1	89	4	6	0	0												47
2	95	0	0	0	5												20
3	88	0	4	0	8												24
4	71	0	0	0	29												7
5	60	20	0	0	20												5
6	84	0	4	4	8												25
7	64	9	18	0	9												11
8	87	0	7	0	7												15
9	75	8	0	0	17												12

The most frequent type of response that the children made to an offer of fact was to offer fact themselves. Seeking fact was a close second. This was followed by accepting fact. Even after disregarding child 7, the lower socioeconomic class children sought fact proportionately more often than the middle socioeconomic status children. The middle class children offered and accepted fact proportionately more often than did the lower class children.

Nine categories were utilized by the children in responding to mothers' offering direction. Again the most frequently utilized category was offering fact. The next most frequently utilized category was offering direction. The lower socioeconomic level children utilized categories of offering preference and not accepting direction proportionately more often than the middle socioeconomic children. The middle socioeconomic status children used seeking fact and accepting direction more often than the lower class children.

Only five different categories were used by the children to respond to their mothers' seeking fact. These included offering fact, offering preference, offering direction, offering motivation, and seeking fact. The two groups of children were very similar in proportion of responses to this category. The middle class children offered fact 80% of the time. The lower class children offered fact 77% of the time. The latter used seeking

fact 10% of the time and the former group of children used this category 12% of the time. The lower socioeconomic level children had a slight edge in offering direction.

This type of comparison tends to show that this system of categorizing communication does not automatically force communication into a particular slot. As has been noted, there were several possible ways of responding to an offer of fact. The child's response was not forced into offering fact or seeking fact. He might have used seven or eight other categories. He might have offered direction, accepted or not accepted fact, etc. However, it is apparent that he would not use some of the categories. Accepting or not accepting any resource other than the one offered is not possible.

Some of the categories did restrict the possible ways of responding. Seeking fact appeared to be very restrictive in actual use. Logically, all of the seeking categories could be utilized in responding to this category.

Relationships Tested by Analysis of Variance

Five of the seven relationships tested by the analysis of variance (Chapter III, Table 6) were found to be statistically significant (Table 8). As was mentioned in the section on validity, the middle class dyads communicated more than the lower class dyads (Table 9), thus supporting the findings of Hess and Shipman (1965).

It was also found that mothers talked more than did the children (Table 17). The interaction between socioeconomic status and family membership was not significant, thus implying that lower class children communicated proportionately as much with their mothers as the middle class children communicated with their mothers (Table 17); this particular finding supports the general hypothesis on which this study was based, i.e. communication is learned by imitating a model.

It was found that the coding procedure does discriminate between the different communication categories (Table 18). As mentioned in the section on validity, the interaction between socioeconomic level and the codes was statistically significant (Table 10). In addition, the interaction between family membership and the codes was statistically significant, apparently due to the more frequent offering of direction by the mothers (Table 17).

The triple interaction was not found to be significant, i.e. the interaction between socioeconomic level, family membership, and the coding system.

Limitations of the Study

The study is limited by the fact that there were so few subjects in the sample. Also, the two socioeconomic groups were not only extreme in terms of finance and educational background but were also extreme in terms of

Table 17.--Mean Number of Message Units for Mothers and Children in each Mode-Resource Category

	Mode-Resource Category																Sum Total
	Offering				Seeking				Accepting				Not Accepting				
	F	P	D	M	F	P	D	M	F	P	D	M	F	P	D	M	
Mothers	78.33	1.56	82.00	10.22	38.33	7.22	1.89	0	8.00	1.11	1.89	.11	3.22	.56	1.89	0	2127
Children	60.44	6.33	24.00	.89	18.78	1.11	2.78	0	5.67	1.22	3.89	.11	1.78	.56	3.44	0	1179
Sum Total	1249	71	954	100	514	75	42	0	123	21	52	2	45	10	48	0	3306

Table 18.--Frequencies of Message Units in each Mode-Resource Category for all Subjects

	Mode-Resource Category																Sum Total
	Offering				Seeking				Accepting				Not Accepting				
	F	P	D	M	F	P	D	M	F	P	D	M	F	P	D	M	
Means	69.39	3.94	53.00	5.56	28.56	4.17	2.33	0	6.83	1.17	2.89	.11	2.50	.56	2.67	0	
Sum Total	1249	71	954	100	514	75	42	0	123	21	52	2	45	10	48	0	3306

family composition, i.e. only one lower socioeconomic status family was a complete family with both parents present in the home. This fact could have made a difference in the way the mother interacted with her child.

The collection of the data was not consistent for all families. As was noted earlier some of the families were observed performing all four activities on one day. Others were observed on two or four different days. One day might not have been very representative of how the mother-child dyads interacted with each other.

The definition of the categories might not have been sufficiently defined to enable coding communication into the correct categories. For example, the definition of motivation did not include some of the verbal reinforcements that psychologists might consider motivating. Most "OK's" and "Uh huh's" were not coded because they were too ambiguous when reading the transcribed data.

Even though they reached 65% agreement for all of the coding, the two coders could have had more extensive training. Perhaps it would have helped if after coding every other family the coders had been rechecked for accuracy.

One final limitation was that some of the data were not coded (Appendix I). However, using a two-way analysis of variance it was found that there was no difference in the mean amount of uncoded data for the

four groups. The data which were not coded were: (1)
communication with the observer, (2) communication that
could not be accurately transcribed from the tape, and
(3) communication that was unclear to the coder as to its
meaning.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study was designed to test the reliability
and validity of the Magrabi et al. (1967) coding procedure
for coding the communication of children and to identify
the various communication patterns of children using the
coding procedure.

The subjects were nine children who were attending
the Laboratory Preschool at Michigan State University
during Fall term 1966 and Winter term 1967, and their
mothers. The families were divided into two groups. Five
families were from the middle socioeconomic level and four
were from the lower socioeconomic level. All of the fam-
ilies resided in the Greater Lansing area.

The coding procedure utilized four modes and four
resources to form sixteen communication categories. The
four modes are: (1) offering, (2) seeking, (3) accepting,
and (4) not accepting. The salient resources are: (1)
fact, (2) preference, (3) direction, and (4) motivation.

The coding procedure did discriminate between the
categories. That is, the coding procedure did show dif-
ferential frequencies of occurrence for the various

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communication categories. Offering fact, offering direction, and seeking fact were the most frequently used mode-resource categories. All of the categories were used with the exception of two. The most frequently used mode was offering. The most frequently used resource was fact.

It was shown that the middle socioeconomic group communicated significantly more frequently than did the lower socioeconomic group. Mothers communicated more frequently than their children. However, there was proportionately as much communication and interaction between the mothers and children in each socioeconomic level. This particular point tends to support the hypothesis that the communication patterns are learned because how much the child communicated seemed to be determined by how much the mother communicated.

There were some differences between the two socioeconomic groups. The middle class seemed to offer fact proportionately more often than the lower socioeconomic group. The lower socioeconomic group seemed to offer direction proportionately more than did the middle class.

It was noted that in examining the dyadic communication between mother and child that some categories used by the mothers elicited a wider range of responses from the children. For example, when responding to an offer of fact or direction children might use any of nine or ten mode-resource categories. Responses to seeking fact seemed to be restricted to five or six categories.

The reliability of the coding system appeared to be adequate. However, since some codes seemed to be very infrequently used, better reliability could perhaps be obtained by factor analyzing the mode-resource categories.

The validity of the instrument was checked. It does tend to discriminate between two extreme groups on the socioeconomic scale.

Perhaps the next step in studying communication patterns and interaction would be to study the interaction of all family members. This is, the father and other siblings should be included so that their effect upon the language development of the child could be determined.

Since one of the differences in the two socioeconomic groups is in the amount communicated, it would be helpful to explore ways of getting lower socioeconomic status mothers to talk more with their preschool age children. It also might be helpful to explore in more detail the sequence of communication between mother and child.

It is clear from this study that the coding procedure devised by Magrabi et al. is a reliable and valid procedure for analyzing verbal communication between mothers and children and for detecting differences between extreme groups.

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APPENDICES

Appendix I

Original Data for Mode-Resource Categories

Original Data

	Offering				Seeking				Accepting				Not Accepting				Total	Data Not Coded
	F	P	D	M	F	P	D	M	F	P	D	M	F	P	D	M		
Middle Class																		
Mothers																		
1	68	3	72	1	80	16	2	0	3	1	4	0	1	0	1	0	252	41
2	226	1	77	8	59	7	4	0	35	0	2	1	9	1	3	0	433	20
3	103	3	121	40	37	9	5	0	11	3	9	0	5	0	1	0	347	29
4	90	1	87	14	10	5	1	0	7	0	1	0	1	2	2	0	221	35
5	86	1	66	16	25	15	4	0	6	4	0	0	1	0	1	0	225	46
Children																		
1	94	11	46	0	22	1	0	0	2	0	3	0	1	1	2	0	183	56
2	117	1	18	2	32	1	3	0	20	1	2	0	2	0	0	0	199	35
3	114	7	49	2	43	0	17	0	13	5	13	1	2	1	0	0	267	32
4	54	7	30	1	15	5	2	0	8	1	7	0	3	0	2	0	135	48
5	31	14	17	2	13	0	0	0	4	3	5	0	4	2	2	0	97	34
Lower Class																		
Mothers																		
6	66	3	86	4	45	3	0	0	9	1	1	0	5	1	6	0	230	43
7	17	0	66	1	34	0	0	0	1	0	0	0	0	0	0	0	119	31
8	42	1	111	8	35	5	0	0	0	0	0	0	7	0	2	0	211	37
9	7	1	52	0	20	5	1	0	0	1	0	0	0	1	1	0	89	112a
Children																		
6	57	11	17	1	25	0	0	0	2	1	1	0	3	0	15	0	133	42
7	19	2	7	0	3	0	0	0	1	0	0	0	0	0	1	0	33	77
8	36	1	18	0	10	3	0	0	1	0	2	0	1	1	7	0	80	24
9	22	3	14	0	6	0	3	0	0	0	2	0	0	0	2	0	52	24
Total	1249	71	954	100	514	75	42	0	123	21	52	2	45	10	48	0	3306	766

a Includes 70 message units of a story.

Appendix II

Original Data for Modes

Original Data

	Modes			
	Offering	Seeking	Accepting	Not Accepting
Middle Class				
Mothers				
1	144	98	8	2
2	312	70	38	13
3	267	51	23	6
4	192	16	8	5
5	169	44	10	2
Children				
1	151	23	5	4
2	138	36	23	2
3	172	60	32	3
4	92	22	16	5
5	64	13	12	8
Low Class				
Mothers				
6	159	48	11	12
7	84	34	1	0
8	162	40	0	9
9	60	26	1	2
Children				
6	86	25	4	18
7	28	3	1	1
8	55	13	3	9
9	39	9	2	2
Total	2374	631	198	103

Appendix III

Original Data for the Resources

Original Data

	Resources			
	Face	Preference	Direction	Motivation

Middle Class

Mothers

1	152	20	79	1
2	329	9	86	9
3	156	15	136	40
4	108	8	91	14
5	118	20	71	16

Children

1	119	13	51	0
2	171	3	23	2
3	172	13	79	3
4	80	13	41	1
5	52	19	24	2

Lower Class

Mothers

6	125	8	93	4
7	52	0	66	1
8	84	6	113	8
9	27	8	54	0

Children

6	87	12	33	1
7	23	2	8	0
8	48	5	27	0
9	28	3	21	0

Total	1931	177	1096	102