A RELIABILITY STUDY OF THE ASSESSMENT OF COMMUNICATION IN EVERYDAY SITUATIONS

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ABSTRACT

The Assessment of Communication in Everyday Situations (ACES) was administered to sixty-three preschool and school-aged children in order to establish the reliability of ACES as a measure of communicative competence. Four types of reliability were studied: Alternate form, Test-retest, Internal consistency, and Rater reliability. Pearson Product Moment Correlations were computed for Overall scores, Social Use scores, Representational Use scores, and specific language use scores for the alternate form and test-retest studies. Results of these studies indicated that the three forms of ACES are parallel as well as stable over time. The Kuder-Richardson formula 20, used to compute the correlations for internal consistency of the three forms of ACES, suggest internal consistency. High, positive Pearson Product Moment Correlations were found for inter- and intra-rater reliability.

TABLE OF CONTENTS

Page

LIST OF TABLES

CHAPTER I

INTRODUCTION

Speech Pathologists often observe that the language disordered child lacks the ability to make language shifts in terms of appropriateness of language to the social situation. When children show competence in the areas of articulation, grammar, and meaning, they are often overlooked by the speech pathologist as having disordered language due to inappropriate use. This inappropriate use of language usually results in misunderstandings and a breakdown in communication. Therefore, skill in communicating, in addition to competence in articulation, grammar, and meaning, should be concerned with ways of expressing and interpreting information so effectively that misunderstandings are avoided.

It is important for a child and a teacher to be able to communicate in order to exchange thinking or feelings about a subject, to receive information, and to give and receive instructions (Tough, 1976). Early academic achievement may depend to a great extent upon a child's abilities in the oral uses of language since oral language may be the only means of communication available to the child. Teachers are aware of the effect that inappropriate use of language has upon success of communication among peers and on the responses that the child will be able to make to experiences presented within the school curriculum. Inappropriate use of language may lead to misunderstandings and arguments among peers. In terms of academics, these children may appear not to understand concepts being presented to them because of an inability to follow directions, or they may in fact not understand concepts being presented because of an inability to understand information presented.

Since language development may play an important role in a child's intellectual or cognitive development (Vygotsky, 1962), the child who has developed only a limited variety of language uses and strategies must also be considered. A limited development of language uses and strategies may result in a child who can only report on past experiences but who cannot draw from those experiences in order to reason or predict and anticipate possibilities or project into experiences of others. It may lead to a child being able to label the components of an experience while being unable to make comparisons, recognize related aspects of situations, extract a central meaning from or reflect upon the meanings of experiences. Since education appears to be based on the ability to analyze and use past experiences to bring relevant knowledge to present experiences (Tough, 1976), it can be seen that language uses and strategies which may not be developed in a child may be precisely those needed for academic success. If either inappropriate language uses or limited variety of language uses exists when the child enters school, it may have a profound effect upon the child's academic achievement and social success.

To date, there are various means of measuring language structure including phonology, the sound system of language; syntax, the grammatical system of language; and semantics, the meaning system of language. However, there appears to be no standardized, systematic, and efficient means of measuring language uses. R. Jane Lieberman (1979) has designed an instrument, Assessment of Communication in Everyday Situations (ACES), which purports to measure not only linguistic competence, appropriate use of form, but also the appropriate use of language. This test was based on Joan Tough's (1976) seven uses of language: self-maintaining,

directing, reporting, towards logical reasoning, predicting, projecting, and imagining. ACES does utilize a systematic and efficient approach to the assessment of the uses of language. However, this test has yet to be examined for validity and reliability.

Purpose of the Study

The purpose of this study is to measure the reliability of the portion of ACES which examines the uses of language. This portion will be examined for test-retest reliability, alternate form reliability, rational equivalence, inter-rater reliability and intra-rater reliability.

Hypotheses

1. There is a high positive correlation among the Overall scores on Forms 1, 2, and 3 of ACES.
2. There is a high positive correlation among Social Use and Representational Use scores on Forms 1, 2, and 3 of ACES.
3. There is a high positive correlation among use scores on Forms 1, 2, and 3 of ACES.
4. There is high test-retest reliability for each of the three forms of ACES.
5. There is a high positive correlation between the Social Use scores and Representational Use scores for each form of ACES.
6. There will be a high positive correlation between use scores for each form of ACES.
7. There is internal consistency within each of the three forms of ACES.

8. There is high intra-rater reliability for Form 1 of ACES.
9. There is high inter-rater reliability for Form 1 of ACES.

Limitations of the Study

1. The subject pools were drawn from Watauga and Wilkes Counties in North Carolina and therefore may not be reflective of the total population of the United States.
2. The child who played the role of the friend may have participated in as many as six test administrations, three administrations for any one form.

CHAPTER II

REVIEW OF RELATED LITERATURE

In the past fifteen to twenty years, there has been much research on normal and deviant aspects of language. Different disciplines have described language in different ways. Philosophers believed that the essential function of language was to describe the world. Sociologists examined language in terms of social usage and concentrated upon types of interaction. Psychologists have viewed language through the realm of learning theory. Linguists have been involved with the description of the form of normal language. Educators have looked at language in terms of what is necessary for academic success, with much emphasis on graphic skills. Speech and Language Pathologists are interested in the language user, especially the child or adult who uses language in a deviant way. Language, thus, covers a very broad category of human behavior.

For the purpose of this study, language has been defined as a system of arbitrary symbols which represents the real world and is used for the primary purpose of communication. Language is considered to be common knowledge among the members of the language community, with a shared system of rules and patterns. It is systematic, containing an organized set of symbols or a code. The rules governing the groupings and sequential arrangements of items are a feature of the code. The rule systems include phonology, the study of the sound system of language; syntax, the grammatical system of language; semantics, the meaning system of language; and pragmatics, the use of language (Bloom, 1978).

In the late 1950's and early 1960's, investigations of language were involved primarily with syntax of child language, both deviant and normal. Noam Chomsky (1957) developed the theory of Transformational Grammar which is primarily concerned with syntactic structures without considering context. In a transformational grammar, sentences are generated from abstract syntactic deep structures. Based on a hierarchy of phrase structure rules it is possible to change deep structures to surface structures through a variety of transformations. With syntax as the central focus, child language was not investigated until a child was twenty to twenty-four months of age, when early syntax, two word utterances, appears.

In the 1960's and 1970's, researchers of child language (Brown, 1973; Schlesinger, 1971; Bloom, 1973; and Bowerman, 1973) began to look at Generative Semantics. They felt that transformational grammar did not adequately explain language, and that it was necessary to bridge the gap between cognitive development and language. Deep structures became semantic categories. Semantic relations worked on cognitive and perceptual grounds, and were considered to be representative of what children perceived in their environment, such as agents, actions, objects and locations. In this way, it became possible to examine language with the development of a child's first meaningful word, sometime between nine and eighteen months.

In the 1970's researchers (Bates, 1976; Hopper and Naremore, 1973; and Prutting, 1979) felt that by waiting until a child was nine months old too much information was being lost. They wished to examine communication before the first meaningful word and thus became interested in the Contextualist approach or pragmatics, which makes it

possible to examine child communication as early as two months of age. This is when the birth cry becomes differentiated in order to communicate changes in internal state.

Although until five or six years ago the study of the pragmatic area of language was largely ignored, it is not a new concept. The term pragmatics was first used in 1931 by a philosopher named Pierce. Morris (1938), an anthropologist, redefined the term and divided the study of language into three areas, syntactics, semantics, and pragmatics. Syntax was defined as the relation of signs to one another; semantics as the relation of signs to the objects they refer to; and pragmatics as the relationship between signs and their human users and the condition under which the signs became a vehicle of communication. Pragmatics of language deals with principles that account for how language works. The knowledge of these rules and the ability to use them is what Hymes (1971) referred to as "communicative competence."

Expanding the Notion of Competence

Linguistic competence is not sufficient to account for the realities of children as communicative beings. Linguistic competence refers to the ideal speaker/hearer's ability to judge the grammaticality of sentences, but does not explain how real children judge the appropriateness of everyday communication. Hopper (1971) stated that the narrowness of the idea of linguistic competence could be seen in psycholinguistic research, where linguistic competence is defined as "knowledge of rules of grammar which underlies speaking" (Hopper, 1971, p. 29). Therefore it can be argued that linguistic competence ignores the issue of the communication situation in speech behavior.

Communicative competence, on the other hand, takes into account not only the implicit grammar but also the use of language (Hymes, 1971). In order to expand the notion on competence not only grammar but the totality of the speech act must be examined. The issue of the communication situation must be addressed since the situation can influence communication strategies. An example of this issue can be seen in the following situation:

> Upon a child waking up in the morning, the Mother asks, "How do you feel this morning?" The child responds, "We went to the zoo."

While the child's response was grammatically correct, it was not appropriate to the situation. Had the child responded, "I fine." the statement would not have been grammatically complete, but it would be appropriate to the situation. In other words, the first response was grammatical but was of no relevance because it made no sense in terms of the question. The second response, while not applying all the rules of grammar, was relevant since the answer to the question could be understood. Therefore, learning to communicate becomes a relationship between learning the forms of language and the function or use of language (Hopper and Naremore, 1973). The term competence must be expanded to include pragmatics, knowledge of use, in addition to linguistic knowledge.

Hymes (1972) defined eight areas which he felt accounted for the total speech event:

1. Act sequence includes the form and the content or topic of the message.

2. Act situation refers to the time and place of the speech event and to the psychological setting.
3. Participants include the audience, speaker, hearer, sender, receiver, addressor, and addressee.
4. Ends are defined as the purpose of the speech event in terms of goals and outcomes.
5. Key is the term used tc describe the tone or manner of the speech event.
6. Instrumentalities include the channel of the speech event, whether written or verbal, and the form of speech.
7. Norms refer to the rules which govern speaking and the interpretation placed upon these rules.
8. Genres are defined as specific traditional categories or types of speaking and writing.

Of these eight areas in the speech act, only instrumentalities is being analyzed by linguistic technique. The other areas cannot be analyzed through the linguistic techniques currently available.

Cazden (1970) and Wood (1976) support the point of view that effective communication is not necessarily related to an elaborate vocabulary, grammatical correctness, or well-articulated speech sounds. Language may be incomplete or faulty in form; but due to its appropriateness to the situation, the message will be considered effective. Individuals who are effective communicators adjust their message to account for the persons involved in the communication, the time and place of the communication event, the subject matter, and the purpose or goal of the communication.

Hopper and Naremore (1971) view these aspects of situational context as parameters which influence the communication strategies which the individual will choose to employ. They define the personal context in terms of the effect of those involved in the communication interaction, whether by age, sex, educational status, or any other cultural aspect, will have upon the event. They also consider how individuals respond to their perception of the role people play in their lives. The physical context includes the effect of the time and place on the communication event. The message context considers what has been said just prior to the communication event. Each communication event is based on a prior event and all must be interpreted together. The context content deals with the fact that the topic will effect what is said, and how it is said. It is evident that in order for communication to be effective, it must be adapted to various factors of the communication situation: participants, setting, topic and task.

Speech Acts

The philosophers' interest in language has emphasized the study of language use and intent. Two of the most significant contributors to this area of study are J. L. Austin and John Searle. They have been instrumental in shifting the focus of language study away from purely linguistic analysis to the analysis of how sentences function in communication. Thus, the focus of interest has become the communication act. In any speech situation there is a speaker, a hearer, and a speech act being performed by the speaker (Searle, 1975). The basis of Searle's (1969) theory of speech acts can be found in the work of

Austin (1962). Austin was interested in what communication can do. He believed that every communication act consisted of a locutionary, illocutionary, and perlocutionary act.

> '/performing/ a locutionary act...is roughly equivalent to uttering a certain sentence with a certain sense and reference, which is again equivalent to meaning in the traditional sense. Second, we said that we also perform illocutionary acts such as informing, ordering, warning, undertaking, etc., i.e. utterances which have certain conventional force. Thirdly, we may also perform perlocutionary acts: what we bring about or achieve by saying something such as convincing, persuading, detering, and even say, surprising or misleading (Austin, 1962, p. 108).'

Searle (1969) expanded on Austin's work when he stated that speech acts, not sentences were the basic or minimal units of linguistic communication. The speech-acts theory became a way of analyzing the intentions of a speaker and how the listener reacted to those intentions. Searle (1969) defined four types of speech acts: utterance acts, propositional acts, illocutionary acts, and perlocutionary acts. These four acts were viewed as parts of the total speech act and are all part of a total explanation of what is happening when a speaker says something to a listener. Utterance acts are the actual production of speech. They will always be present since an individual cannot perform a speech act without producing speech. Propositional acts are the production of meaningful sentences. Illocutionary acts are what Austin (1962) referred to as performatives, sentences which perform acts of promising, commanding, warning, begging and so forth. Perlocutionary acts refer to the effect or influence that the speech act has on the listener. In order to understand the speech-act theory, a better look must be taken at the illocutionary force or function of a

sentence. Searle (1975) presented a taxonomy of five functions of communication or illocutionary force:

1. Representatives -- the speaker is making an assertion which he believes to be true.
2. Directives -- the speaker is trying to get the listener to do something. In other words, the speaker is trying to control the behavior of the listener.
3. Commissives -- the speaker is committing himself to some further action.
4. Expressives -- the speaker reveals a psychological state such as attitude or mood.
5. Declarations -- the actual speech act brings about a new state of affairs.

This taxonomy was based on adult language. While it may be considered adequate for describing the function of adult communication, it has not been successful as a means to describe the function of the child's language. In terms of the young child, let us take another look at Searle's (1975) taxonomy:

1. Representatives -- young children do make assertions which they believe to be true.
2. Directives -- young children use directives from the preverbal stage on. This can be seen in the fact that an infant cries when he is hungry in order to get a parent to feed him.
3. Commissives -- young children will very rarely use this type of utterance. A commissive, linguistically, requires a complex sentence which children are not capable of making until they are approximately 3 to $3\frac{1}{2}$ years of age.

4. Expressives -- these are heard in young children's language and usually take the form of hi, bye, or uh-oh.

5. Declaratives -- children are not capable of this speech act.

Thus, it can be seen that while Austin (1962) and Searle's (1969, 1975) work form the theoretical framework for analyzing language according to intent and function, another taxonomy must be found for examining children's utterances.

Other Taxonomies

According to Halliday (1975), early infant vocalizations do not contain form or structure but do contain expression and meaning in terms of the function the vocalization serves. Bates (1976) also found that pragmatic function may be fulfilled by means other than linguistic utterances. Children have been noted to effectively communicate messages before they have little or any control over language. Dore (1975) attempted to use a speech acts analysis for child language beginning at the one word stage. He described these one word utterances as "primitive speech acts," each of which contains a "rudimentary referring expression" and a "primitive force." The rudimentary referring expression was the single word and the primitive force was the intonation pattern which accompanied the word. The intonation pattern was used by the listener to clarify the intent of the utterance. From this beginning, Dore (1976) expanded his work in an attempt to describe child language in a speech acts framework. He made video recordings of seven, three-year-old children in a free play, preschool situation while they were interacting with each other and with their teacher. From these

recordings, Dore (1976) identified a list of numerous illocutionary acts which he placed into the following six categories:

1. Requests -- solicit information or action.
2. Responses -- complement the immediately preceding utterance.
3. Descriptions -- represent verifiable aspects of content.
4. Statements -- express analytical facts, beliefs, attitudes, and so forth.
5. Conversational devices -- regulate conversation.
6. Performatives -- accomplish acts merely by being said.

This work was an important first step in identifying how preschool children can and do perform speech acts.

Halliday (1975) in his report of his son, Nigel's language development, begins to integrate child and adult language functions in terms of the speech acts framework. He theorized that language is at the center of socialization and that the structure that language takes is a reflection of the changing function of language, from its beginnings through its adult form. From an analysis of Nigel's language in context, Halliday (1975) showed how the early system was transformed into the adult system of language functions. This progression took place in three phases. Phase I, which for Nigel covered a period from approximately $10\frac{1}{2}$ months to 18 months, was characterized by idiosyncratic communication. These communications did not necessarily contain adult-type words but were inclusive of the child's vocabulary of utterances. As Phase I proceeded, the utterances did become recognizable as adult-type words. Phase I contained the following six functions:

1. Instrumental -- a means of getting things -- the "I want" function, comparable to Searle's (1975) directive function.
2. Regulatory -- communication used to direct the behavior of others -- the "Do as I tell you" function, comparable to Searle's (1975) directive function.
3. Interactional -- communication used to maintain interaction between the child and someone else -- the "Me and you" function, most like Searle's (1975) expressive function.
4. Personal -- communication used to express feelings and attitudes -- the "Here I come" function, comparable to Searle's (1975) expressive function.
5. Heuristic -- communication used to find out about the environment -- the "Tell me why" function.
6. Imaginative -- communication used by the child to create a world of his own -- the "Let's pretend" function.

Phase II, which for Nigel began between 16½ and 18 months and ended about two years, was a period of transition. During this phase, a seventh specific function emerged, the informative or "I've got something to tell you" function. In this function, language was used to convey a message. However, during Phase II the seven aforementioned functions merged into two major functions, the pragmatic and the mathetic. The pragmatic function was defined as "language as doing." It was a derivative of the instrumental and the regulatory functions of Phase I. The mathetic function was defined as "language as learning" and was derived from the personal and the heuristic functions. The interactional function of Phase I contributed to both the pragmatic and the mathetic functions of Phase II. In Phase II, the system was

described as becoming more complex as the child was able to play different roles as the user of language. Halliday (1975) defined these roles as that of the observer in the mathetic function and that of the intruder in the pragmatic function. It was in this phase that dialogue containing linguistic conventions began.

Phase III, which for Nigel began at approximately two years, was the beginning of the adult system. Its two main functions were the ideational, or the use of language to describe the real world, and the interpersonal function, or the means by which the individual participated in the speech situation. The ideational function took over the role of the observer, while the interpersonal function took over the role of the intruder. A third function, the textual, was also identified. This function appeared to be the one that enabled the other two functions to work. It was derived from the imaginative, informative, pragmatic, and mathetic functions. While Halliday's (1975) system appears to represent a detailed analysis of the functions of language, it should be noted that in Phase II and Phase III there are only three functions by which to analyze and classify all of the functions of child language. As noted by Tough (1977), Halliday's (1975) classifications do not adequately differentiate between numerous areas of child language.

From an examination of Piaget's theory, Joan Tough (1976), a British educator, believed that a classification system which would represent a greater range of differences in meanings expressed by children than those already mentioned, could be developed. She based her work on the theoretical viewpoints of Vygotsky, Luria, Lewis,

Bruner and Bernstein and defined seven uses of language which she felt were necessary in order for a child to achieve academic success:

1. Self-maintaining -- the use of language to create an awareness of the speaker's identity and to promote the individual's position in relation to others.
2. Directing -- use of language to control or regulate the physical actions and operations performed by others.
3. Reporting -- use of language to provide information about past and present experiences.
4. Toward Logical Reasoning -- use of language which employs rational thought and argument to interpret experiences.
5. Predicting -- use of language to extend communication beyond the immediate present or past experiences to events that have not yet occurred and which may never take place.
6. Projecting -- the use of language within an unfamiliar or external context.
7. Imagining -- use of language by an individual to create his or her own world.

Each of these seven uses can be further divided into strategies of use, which are the means by which the child reveals the purpose or intent of his speech, such as labeling or comparing. The seven uses can also be grouped according to social use, self-maintaining and directing, and according to representational or cognitive uses, reporting, towards logical reasoning, predicting, projecting, and imagining.

In a longitudinal study to test the validity of her classification system, Tough (1977) recorded 64 children at 3 years of age. She again recorded these children at $5\frac{1}{2}$ and 7 years of age. At the outset of the

study, Tough (1977) divided the children into two groups, 32 of whom had entered nursery school and 32 who had not and were not expected to enter nursery school. The two groups were further divided in half, into groups of "advantaged" and "disadvantaged" children. Advantaged children were considered to be those children whose parents practiced professions reached through higher education. The disadvantaged children were considered to be those children whose parents completed their education at the minimum age and worked at semi-skilled or unskilled jobs. All children included in the study achieved a minimum IQ of 105 as measured by the Stanford-Binet Scale of Intelligence (1960). The first language of the mother of each participant had to be English. The data was collected in three phases each lasting two years.

At 3 years of age, the children were recorded in a free play situation with a companion. The duration of the tape-recordings was for one hour or until the children wished to leave the room. No tape-recording of less than three quarters of an hour was used. At the ages of $5\frac{1}{2}$ and 7, recordings were made of interviews with the children. These interviews were based on situations that required the children to use language for the purposes which appear necessary for academic success. All uses and strategies did appear in the transcribed data at each age level.

From the taxonomies discussed here, it appears that the one presented by Tough (1977) is the only one which will allow for the classification of the majority of utterances used by children. It also provides a simple, yet efficient, means of classification. Further, it appears to be the only one that looks at a large enough population to insure some amount of validity and reliability.

Measures of Communicative Competence

Ricillo (1978) used an interview format to assess communicative competence in children $2\frac{1}{2}$ to 4 years of age. A series of pre-established probes centered around seven functional uses of speech made up the interview. The functions represented were: 1) contactive -- initiating communication, 2) conversative -- keeping interaction going, 3) descriptive, 4) directive, 5) explanatory, 6) narrative and 7) persuasive. Each child was given two chances to respond to the probe. Responses were judged as either appropriate or inappropriate. The only measure of reliability reported was that of interobserver reliability. The correlation coefficients reported ranged from 0.78 to 0.81.

Tough (1976) developed a picture description task for the appraisal of language use. Since both preschool and school age children are familiar with looking at books and pictures, the format represented a common activity. Two sets of six pictures each were designed to provide enough detail so that when questioned about the pictures, a child could demonstrate the full range of his language use. By use of questions and comments, the examiner guides the child into making an overall interpretation of the picture. In order to make the interpretation, the child must recognize sufficient detail in regard to actions and incidents which involve the various characters in the stories. Responses are tape-recorded and analyzed according to Tough's (1976) framework for classification of language use.

The use of picture story situations is seen also in the work of Pagel (1978). He used situations of interpersonal conflict involving two boys of the same age. Each story describes a confrontation and requires the child to resolve the conflict in terms of what he feels

the main character in the story should do. To aid in the decision, five alternatives are presented at the end of each story, one violent and four nonviolent.

Blank, Rose, and Berlin (1978) developed the Preschool Language Assessment Instrument to assess children's skills in terms of their ability to deal with language demands of the academic setting. The test is to be used with children ages 3 to 6, and includes three major components of classroom discourse defined by Moffet (1968): speaker-listener, the topic, and the level of discourse. The speaker-listener relationship refers to teacher-child interaction; topic represents perceptually based experiences common to any preschool program; and level of discourse reflects the increasing distance between a child's perception of the world and the language the child chooses to represent these perceptions. Blank et al. (1978) considered language which represents preceptions to lie along a continuum. Their test has been divided into four main levels of perception: 1) matching perception, 2) selective analysis, 3) reordering perception and 4) reasoning about perception. Test items are presented in a two-dimensional, black and white booklet format. Due to the variability of natural discourse, the authors have interspersed items from each of the levels throughout the test. The test can be used to analyze a child's performance in two ways. The first way in which the test can be used is based on a 0 to 3 point scoring system. The scores can be totaled and a mean score derived for the overall test or summed according to each of the four discourse skills, and a mean score can be derived for each category. The scores can also be used to compare the child's mastery of discourse skills to those of other children in the same age group.

As reported by Blank et al. (1978), rater reliability among four raters giving identical scores ranged from .81 to .93 across protocols. The correlation for split-half reliability for each of the four categories were: Group I = .64, Group II = .80, Group III = .83, and Group IV = .88. Content, discriminative, and construct validity was also examined.

Ritti (1978) used six picture story sequences of three, black and white line drawings each, in order to study development of the social functions of speech. The stories include a card game, swimming, bicycle riding, bedtime, the bus stop, and school. These stories were presented to 240 middle-class, second, fourth, and sixth grade students. In response to the stories, the children were asked to write a statement which they would say in each situation. In addition, the children were asked to circle yes, no, or sometimes in response to ten alternate responses provided by the examiner in order to indicate whether or not the child would make a particular response to the situation. The five social speech function categories used in the analysis were developed by Soskin and John. These included: 1) informative -- object statements about the self, 2) directives -- direct regulatory statements, 3) inductives -- indirect messages that reveal inner physical or psychological states, 4) evaluations -- value statements and 5) expressives -- messages that may or may not effect the listener while discharging emotion. The results of this study indicated that choice of speech function message was affected by situation, and age and sex of the child.

Schachter, Kirshner, Klips, Fredricks, and Sanders (1974) developed a scoring system for the functions of spontaneous, interpersonal preschool speech from the viewpoint of the child's need to talk. The

scoring system, "Functions of Interpersonal Spontaneous Preschool Speech" (FIS-P), was developed inductively. Schachter et al. (1974) developed their scoring system from 6,000 statements delivered by 150 preschoolers. These preschoolers consisted of four groups, advantaged and disadvantaged, black and white, all of above-average IQ. In addition, a fifth group of disadvantaged, black of lower IQ was used. The criteria for inclusion of a statement were: 1) the statement had to be spontaneous and 2) it had to be interpersonal. The FIS-P scoring system was used with twelve, three-minute language samples per child. Speech was observed in a free play situation, on at least two different days and on four days when possible. The observer hand recorded all utterances as well as the context and tone of each utterance.

The scoring system consists of category scores and additional scores. Within the category scores, there were nine subdivisions: 1) expressive, 2) desire implementing, 3) possession rights implementing, 4) ego-enhancing, 5) self-referring-including, 6) joining, 7) collaborative, 8) learning implementing and 9) reporting. These nine categories were considered all inclusive of interpersonal spontaneous statements. Categories one through four covered personal motives; categories five through seven covered social motives; and categories eight and nine covered other motives not related to personal or social motives. Additional scores were used for appended scores, nonscores and listener designations.

The .70 level of agreement for reliability was considered as adequate for this system. Interscorer reliability was .73 agreement. For an assessment of the reliability of subject stability, results from a previous study (Schachter, 1971) in which 11 4-year old children

were observed by one observer, were used. Reliability was .97. Coefficients were also calculated for those FIS-P scores which were produced by at least seven of the eleven subjects. The median consistency coefficient of reliability was .67.

After reviewing several measures of language use, it can be seen that there are problems with each, including limited age range, lack of standardization, classification systems which were not all inclusive, difficult or inappropriate means of data collection and scoring procedures that are too involved. None of these measures represents an easy, efficient, standardized means of analyzing the use of language in children. These measures purport to measure communicative competence, yet none of them looks at linguistic competence.

Assessment of Communication in Everyday Situations

The Assessment of Communication in Everyday Situations (Lieberman, 1979), which is based on Tough's (1977) taxonomy, was designed as a test of communicative competence. The test elicits spontaneous language through the use of situations familiar to a young child. Props are used to make the situations more real to the child. This test examines language in terms of syntax, morphology, and use of language. Two children are involved in the test situation, the subject and a friend selected by the subject. Test items are presented to both the subject and the friend. In this way, the Assessment of Communication in Everyday Situations provides an opportunity for the subject to use each of the seven uses and thirty-six strategies of Tough's system in an interactional situation with either the examiner, who takes on various roles such as a mommy, a daddy, a saleslady and so forth, or with the friend.

The children are also left alone for five minutes of free play during which time their conversation is recorded. The test administration is entirely recorded for later scoring. No scoring or recording is done during the administration so as not to interrupt the normal flow of conversation. Scoring values of 2, 1, and 0 are assigned to responses in terms of appropriateness of use and strategy. The score of 2 is given for a spontaneous appropriate response; a score of 1 is given for an appropriate response after a prompt; and a score of 0 is given for an inappropriate response. Syntax is analyzed for each response through the use of Developmental Sentence Scoring (Lee, 1974).

Content validity for the three forms of ACES was determined by asking 56 experts to judge whether or not specific test items would elicit correct responses. Out of 56 judges, there was 83 percent agreement that the test items from Form 1 would measure what they were purported to measure. The percentages of agreement for Forms 2 and 3 were 85 percent and 81 percent respectively (Peebles, 1980).

Of all the measures of communicative competence examined, it appears that the Assessment of Communication in Everyday Situations is the only one to systematically examine the intent of communication. It also, although less systematically, examines the topic, setting, and participants of the communication act. In addition, it is the only test which includes an analysis of the linguistic competence of a child's language. Just as it was felt that the use of communication could not be overlooked during the evaluation of a child's language, neither can linguistic competence be omitted, as it is an integral part of a child's communicative competence. Since the initial content validity study on ACES indicated good validity, this reliability study

was undertaken in the hope that a test of communicative competence which is easy to administer and score, efficient, and standardized has been developed.

Importance of Reliability

There are three essential elements in the development of a good test: standardization, validity, and reliability. Standardization indicates that the group that the test has been administered to was well defined and that careful records had been kept of the group's performance. Selecting a well-defined group is important because validity and reliability will be based upon this group. A test is valid when it measures the characteristics that it was designed to measure. Reliability refers to consistency of measurement from one time to the next, or precision of measurement. The reliability coefficient tells what amount of the test variance is nonerror variance. Test validity is dependent upon reliability. A test will not be valid if it is not reliable. However, a test can be reliable without being valid. That is, a test may measure consistently from one time to the next without measuring the characteristics the test purports to measure (Roscoe, 1975).

"Concern over reliability comes from the necessity for dependability in measurement" (Kerlinger, 1973, p. 442). For example, if a cash register in a grocery store cannot be relied upon to give an accurate total of a consumers purchases from one time to the next, it is of no value to either the grocery store or the consumer for it is undependable. Neither the consumer nor the store personnel would know which total was accurate unless they added up the purchases themselves; therefore, the cash register becomes worthless. If a test is

undependable, it cannot be relied upon to give an accurate measurement of the same objectives from one time to the next. Therefore, an examiner who uses an unreliable test would not know which score was an accurate measure. Also, if a test is not reliable, little faith can be placed in the data collected from the test. Conclusions drawn from an unreliable test would be subject to question (Kerlinger, 1973).

Rarely are tests ever perfectly reliable, and even highly reliable tests are subject to some degree of variance. This degree of variance is referred to as the standard deviation of a test. When selecting a test, it is important that the tester know the level of confidence, reliability, that can be placed in the score and the standard error of measurement for the test. The standard error of measurement is computed from the reliability coefficient and the standard deviation (Miller, 1972). There are several ways of determining reliability; each defines the variance or error of measurement in a slightly different way. Certain kinds of inconsistencies and not others are taken into account by each type of reliability. Each type of reliability then has its own significance (Issac and Michael, 1971).

Test-retest reliability refers to the administration of the same test to the same sample on two different occasions. A correlation between the two test scores for each subject is ascertained. This type of reliability may also be referred to as a coefficient of stability which implies that the characteristics being measured are fairly stable over a period of time. Test-retest reliability assumes that there is no practice effect or fatigue effect and that it is practical to administer the test twice to the same set of subjects in a short period of time. Error when using this type of reliability is due to any factor

which will cause an individual to achieve two different scores for the two administrations (Roscoe, 1975).

Coefficient of equivalence, also referred to as alternate forms, equivalent forms, or parallel forms, accounts for the administration of two parallel forms of the same test being administered to the same group of subjects. Because the forms are parallel but contain different test items, the tests may be administered fairly close in time. Therefore, the error introduced by change in ability through time will be minimal. Practice and fatigue effects will also be greatly reduced. Another type of error will be introduced in relation to the extent to which the two parallel forms are not equivalent (Roscoe, 1975).

Internal consistency is a measure of the homogeneity of the test items. This type of reliability coefficient may be obtained in two ways. The split-half technique requires that a test be administered only once. The test items are split into two halves, usually by odd items and even items, which are scored separately. A correlation coefficient is calculated between the two test scores. The second method is through the use of the Kuder-Richardson formula 20. This formula examines the intercorrelation of test items and the extent to which the test items measure the same characteristics. This formula may be used with tests that have more than two categories of response. The advantages to these means of determining a reliability coefficient are that there is no time lag between administration and that the condition of administration and that the condition of administration will be constant. However, the definition of reliability refers to consistency of measurement over time. This method does not take into account the effect of testing on two separate occasions (Ferguson, 1971).

Inter-rater reliability examines the amount of agreement among different individuals scoring the test. It is necessary to determine whether or not the score is the product of the test itself, or the product of the scorer. If the test can be objectively scored, the rater should have no influence over the results. Another way to examine rater reliability is to look at intra-rater reliability, or the extent to which a rater will score the same test the same way on two different occasions. If a test cannot be scored consistently by one rater, there is very little chance it will be scored consistently by a group of raters (Larson, Backlund, Redmond and Barbour, 1978).

CHAPTER III

METHODS

Subjects

Twenty-one children, ages 3 years, 9 months to 4 years, 3 months, were selected at random from a population pool of approximately 35 4-year old children enrolled at either the United Methodist Day Care Center, the Appalachian Early Learning Center, the Watauga County Child Development Center, or SHAPES Montessori School, all of Boone, North Carolina. In addition, 21 children, ages 5 years, 9 months to 6 years, 3 months, were selected at random from a population pool of approximately 35 6-year old children enrolled in kindergarten at Moravian Falls Elementary School, Wilkesboro, North Carolina. Another 21 children, ages 7 years, 9 months to 8 years, 3 months, were selected at random from a population pool of approximately 35 8-year old children enrolled in second grade at C. C. Wright Elementary School, Wilkesboro, North Carolina. Some of the children not selected from these population pools were used as the subjects' friend during test administration. Other children who participated in the test administrations as the friends were selected by the subjects from their classmates. If a child who had been selected to be a subject was also selected to be a friend, the child received the tests as a subject prior to acting as a friend. No child was allowed to act as a friend on any one form of ACES more than three times.

Apparatus

Wollensak, portable, audio, tape recorders (Model 2620) and Realistic, condensor, lapel microphones (Model 33-1056A) were used to

record all test administrations. Ampex, sixty-minute, lo-noise, audio, recording cassettes were used for the recordings.

Procedures

Training procedures for test administration. Six graduate students and three faculty members from the Department of Speech Pathology and Audiology were trained on each of the three forms of ACES. The test format and administration procedures were presented and discussed. Appropriate and inappropriate responses to test items were devised. Practice testing was performed by each of the trainees on other members of the group. After each trainee had administered the test, a second administration by each trainee was critiqued by the group. The next stage of training consisted of test administration to preschool and school-aged children by each of the trainees on at least three occasions. A fourth administration by each trainee was videotaped and then critiqued by the group as a whole. Following review of the videotapes, changes in test administration were made to facilitate data collection. After the changes in the test procedures had been mastered, videotapes of the administration of the test to preschool and school-aged children by each of the trainees were critiqued by the group as a whole.

Training procedures for scoring. The training group consisted of six graduate students and two faculty members from the Department of Speech Pathology and Audiology. A number of transcripts of actual test administrations for each of the three forms at each of the three age levels was prepared. A series of transcripts was scored by each

member of the group with intervening periods of discussion and instruction. This procedure was continued until greater than 90 percent accuracy in scoring was attained by each member in the group for all three forms of the test at the three age levels that were used in the study.

Experimental Design

The 4-year old and 8-year old age groups were divided at random into three groups of seven each. Each group of seven subjects was tested on one of the following schedules: Form 1, Form 1, Form 2; Form 2, Form 2, Form 3; or Form 3, Form 3, Form 1. All testing was completed on any one subject within a one-month time period.

The 6-year old age groups were all tested on a Form 1, Form 1 schedule. Testing schedules were developed in this manner to ensure that both a test-retest and alternate form situation existed with equal populations from the 4-year old group and the 8-year old group being represented. The addition of the 6-year old group in the test-retest situation for Form 1 was made to determine what effect a larger sample size would have on reliability.

The members of each of the above groups were assigned at random for testing to one of seven testers. Each group had members tested by from four to six testers. All tests were scored by the seven members of the testing group.

Rater-reliability. Each of seven raters scored and rescored a set of five tests which had been administered to the 6-year old age group. The tests were scored and rescored one week apart and were scored in random order at each session. Each rater was supplied with

a blank copy of the test, an answer form, directions for scoring, definitions and examples of the 7 uses and 36 strategies (Appendix A), a written transcript of each test and the audio tape of the test. Raters were permitted to listen to each test item twice when necessary and were permitted forty-five minutes to score each test.

Data Analysis

For Hypotheses 1 through 6 and 8 and 9, the Pearson Product Moment Correlation formula (r) for raw scores (Runyan and Haber, 1976) was used to analyze the data:

$$r = \frac{\sum XY - \frac{(\sum X)(\sum Y)}{n}}{\sqrt{\left[\sum X^2 - \frac{(\sum X)^2}{n}\right]\left[\sum Y^2 - \frac{(\sum Y)^2}{n}\right]}}$$

For Hypothesis 7, the Kuder-Richardson formula 20 (r_{xx}) was used to analyze the data for internal consistency (Ferguson, 1971).

$$r_{xx} = \frac{n}{n-1} \quad \frac{S_x^2 - \sum_{i=1}^{n} p_i q_i}{S_x^2}$$

CHAPTER IV

RESULTS

The correlation coefficients for alternate forms, test-retest, inter-rater and intra-rater reliability were derived from the Pearson Product Moment Correlation. The Kuder-Richardson Formula 20 was used to test for internal consistency. A high correlation was defined as .71 or above, coefficient of determination equaling .50 or higher (Guilford, 1956). For the overall scores on alternate form and test-retest reliability, a difference between the correlation coefficient and coefficient alpha of less than 20 points (Nunnally, 1967) was included in the definition of a high correlation. All of the correlation coefficients were analyzed for levels of confidence using a one-tailed test of significance since a prediction that the correlations would be positive was made (Roscoe, 1975). The results are discussed in terms of the combined 4- and 8-year old population unless otherwise stated. The discussions were based on combined populations as each segment of the total population contributed equally or near equally to the correlations.

Restatement of Hypotheses

Ho 1.1 The correlation between Overall scores for Forms 1 and 2 of ACES is zero.

Ho 1.2 The correlation between Overall scores for Forms 1 and 2 of ACES is zero.

Ho 1.3 The correlation between Overall scores for Forms 3 and 1 of ACES is zero.

Ho 2.1 The correlation between the Social Use scores and the correlation between the Representational Use scores (see p. 17) for Forms 1 and 2 of ACES is zero.

Ho 2.2 The correlation between the Social Use scores and the correlation between the Representational Use scores for Forms 2 and 3 of ACES is zero.

Ho 2.3 The correlation between the Social Use scores and the correlation between the Representational Use scores for Forms 3 and 1 of ACES is zero.

Ho 3.1 The correlation between the use scores (see pp. 16-17) for Forms 1 and 2 of ACES is zero.

Ho 3.2 The correlation between the use scores for Forms 2 and 3 of ACES is zero.

Ho 3.3 The correlation between the use scores for Forms 3 and 1 of ACES is zero.

Ho 4.1 The correlation between an initial test and a retest on Form 1 of ACES is zero.

Ho 4.2 The correlation between an initial test and a retest on Form 2 of ACES is zero.

Ho 4.3 The correlation between an initial test and a retest on Form 3 of ACES is zero.

Ho 5.1 The correlation between the Social Use scores and the correlation between the Representational Use scores for Form 1 of ACES as determined in a test-retest situation is zero.

Ho 5.2 The correlation between the Social Use scores and the correlation between the Representational Use scores for

Form 2 of ACES as determined in a test-retest situation is zero.

Ho 5.3 The correlation between the Social Use scores and the correlation between the Representational Use scores for Form 3 of ACES as determined in a test-retest situation is zero.

Ho 6.1 The correlation between use scores for Form 1 of ACES as determined in a test-retest situation is zero.

Ho 6.2 The correlation between use scores for Form 2 of ACES as determined in a test-retest situation is zero.

Ho 6.3 The correlation between use scores for Form 3 of ACES as determined in a test-retest situation is zero.

Ho 7.1 The correlation for internal consistency of Form 1 of ACES is zero.

Ho 7.2 The correlation for internal consistency of Form 2 of ACES is zero.

Ho 7.3 The correlation for internal consistency of Form 3 of ACES is zero.

Ho 7.4 The correlation for internal consistency between Forms 1 and 2 of ACES is zero.

Ho 7.5 The correlation for internal consistency between Forms 2 and 3 of ACES is zero.

Ho 7.6 The correlation for internal consistency between Forms 3 and 1 of ACES is zero.

Ho 8 The correlation for intra-rater reliability is zero.

Ho 9 The correlations for inter-rater reliability are zero.

A summary of the hypotheses is presented in tabular form (Tables 1, 5, 9 and 10).

Alternate Forms

The correlation coefficients (r) among the Overall scores for the three forms of ACES were all found to be high, positive correlations at the .005 level of statistical significance; r = .97 for Forms 1 to 2, .93 for Forms 2 to 3, and .89 for Forms 3 to 1 (Table 2). The coefficient of determination (r^2), the portion of the variance shared by two variables (Kerlinger, 1973) was .95 for Forms 1 to 2, .87 for Forms 2 to 3, and .80 for Forms 3 to 1. Coefficient alpha (r_{xx}) between the three sets of test forms was .94, .93 and .93 respectively. This indicates that the three forms of ACES are alternate or parallel forms of the same test and that they do measure the same characteristics overall. When the tests were divided into the two subsets of Social Use and Representational Use, the correlation coefficients, with the exception of the correlation between Social Uses Form 3 and 1, were all found to be high, positive correlations at the .005 level of statistical significance (Table 3). The coefficients of determination for the subsets of Social Use revealed shared variance of Forms 1 and 2 to be .63, .60 for Forms 2 and 3, and .43 for Forms 3 and 1. The coefficients of determination for the subsets of Representational Use revealed a shared variance for Forms 1 and 2 to be .93, .88 for Forms 2 and 3, .69 for Forms 3 and 1. It was expected that both r and r^2 for Social Use and Representational Use would be lower than r and r^2 for the Overall scores since Social Use is a combination of only two of the seven subcategories or uses of language measured by ACES and Representational Use is a combination of five of the seven uses. However, even

these somewhat lower correlation coefficients and coefficients of determination indicate that these subsets are probably parallel to one another, Social Uses to Social Uses and Representational Uses to Representational Uses, thus measuring the same characteristics. When the tests were subdivided even further by the seven specific language uses, a clear pattern of co-relationship could not be identified (Table 4). The $\underline{r}$ and $\underline{r}^2$ for the use of Self-maintaining between Forms 1 and 2 do suggest parallelism. This was also noted for the use of Reporting between Forms 1 and 2, and Forms 2 and 3; Towards Logical Reasoning between Forms 2 and 3, and 3 and 1; Predicting between Forms 1 and 2; and Projecting between Forms 2 and 3. The uses of Directing and Imagining did not show any co-relationships among tests. The apparent lack of consistent co-relationship among various use scores from test to test may have been due to the small sample population tested and/or to the relatively few items employed to measure each language use: 6 test items for Self-maintaining, 5 for Directing, 9 for Reporting, 7 for Towards Logical Reasoning, 7 for Predicting, 5 for Projecting, and 3 for Imagining.

Test-Retest

The correlation coefficients between Overall scores in a test-retest situation for each of the three forms of ACES for the combined 4- and 8-year old population were all found to be high, positive at the .005 level of statistical significance; $\underline{r}$ = .90 for test-retest on Form 1, .94 for test-retest on Form 2, and .91 for test-retest on Form 3 (Table 6). The coefficients of determination revealed shared variance between the initial test on Form 1 and the retest to be .81,

TABLE 1

Summary For Alternate Forms

Hypotheses	4-Year Olds	8-Year Olds	Total Population	Decision
Ho 1.1 Form 1 and 2	$\underline{r}$ = .92 $\underline{p}$ = <.005 r_{xx} = .93 df = 5	$\underline{r}$ = .58 $\underline{p}$ = >.05 r_{xx} = .68 df = 5	$\underline{r}$ = .97 $\underline{p}$ = <.005 r_{xx} = .94 df = 12	Rejected
Ho 1.2 Form 2 and 3	$\underline{r}$ = .77 $\underline{p}$ = <.025 r_{xx} = .92 df = 5	$\underline{r}$ = .89 $\underline{p}$ = <.01 r_{xx} = .93 df = 4	$\underline{r}$ = .93 $\underline{p}$ = <.005 r_{xx} = .93 df = 11	Rejected
Ho 1.3 Form 3 and 1	$\underline{r}$ = .69 $\underline{p}$ = >.05 r_{xx} = .91 df = 4	$\underline{r}$ = .42 $\underline{p}$ = >.05 r_{xx} = .78 df = 5	$\underline{r}$ = .89 $\underline{p}$ = <.005 r_{xx} = .93 df = 11	Rejected
Ho 2.1 Form 1 and 2 SU	$\underline{r}$ = .88 $\underline{p}$ = <.005 df = 5	$\underline{r}$ = .12 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .79 $\underline{p}$ = <.005 df = 12	Rejected
RU	$\underline{r}$ = .89 $\underline{p}$ = <.005 df = 5	$\underline{r}$ = .69 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .97 $\underline{p}$ = <.005 df = 12	Rejected
Ho 2.2 Form 2 and 3	$\underline{r}$ = .23 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .80 $\underline{p}$ = <.05 df = 4	$\underline{r}$ = .77 $\underline{p}$ = <.005 df = 11	Rejected
RU	$\underline{r}$ = .83 $\underline{p}$ = <.025 df = 5	$\underline{r}$ = .96 $\underline{p}$ = <.005 df = 4	$\underline{r}$ = .94 $\underline{p}$ = <.005 df = 11	Rejected
Ho 2.3 Form 3 and 1 SU	$\underline{r}$ = .55 $\underline{p}$ = >.05 df = 4	$\underline{r}$ = .22 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .65 $\underline{p}$ = <.01 df = 11	Accepted
RU	$\underline{r}$ = .44 $\underline{p}$ = > .05 df = 4	$\underline{r}$ = .45 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .83 $\underline{p}$ = <.005 df = 11	Rejected

TABLE 1 (Continued)

Hypotheses	4-Year Olds	8-Year Olds	Total Population	Decision
Ho 3.1 Form 1 and 2 SM	r = .76 p = <.025 df = 5	r = .31 p = >.05 df = 5	r = .73 p = <.005 df = 12	Rejected
DR	r = .64 p = >.05 df = 5	r = -.72 p = <.05 df = 5	r = .26 p = >.05 df = 12	Accepted
RP	r = .67 p = <.05 df = 5	r = -.20 p = >.05 df = 5	r = .88 p = <.005 df = 12	Rejected
LR	r = .19 p = >.05 df = 5	r = -.13 p = >.05 df = 5	r = .59 p = <.025 df = 12	Accepted
PD	r = .63 p = >.05 df = 5	r = .75 p = <.05 df = 5	r = .77 p = <.005 df = 12	Rejected
PJ	r = .09 p = >.05 df = 5	r = .30 p = >.05 df = 5	r = .51 p = <.05 df = 12	Accepted
IM	r = .64 p = >.05 df = 5	r = .35 p = >.05 df = 5	r = .67 p = <.005 df = 12	Accepted
Ho 3.2 Form 2 and 3 SU	r = -.17 p = >.05 df = 5	r = .05 p = >.05 df = 4	r = .46 p = >.05 df = 11	Accepted
DR	r = .48 p = >.05 df = 5	r = .26 p = >.05 df = 4	r = .63 p = <.025 df = 11	Accepted
RP	r = .62 p = >.05 df = 5	r = .72 p = >.05 df = 4	r = .85 p = <.005 df = 11	Rejected

TABLE 1 (Continued)

Hypotheses	4-Year Olds	8-Year Olds	Total Population	Decision
LR	$\underline{r}$ = .53 $\underline{p}$ = > .05 df = 5	$\underline{r}$ = .69 $\underline{p}$ = > .05 df = 4	$\underline{r}$ = .88 $\underline{p}$ = < .005 df = 11	Rejected
PD	$\underline{r}$ = .33 $\underline{p}$ = > .05 df = 5	$\underline{r}$ = -.05 $\underline{p}$ = > .05 df = 4	$\underline{r}$ = .64 $\underline{p}$ = < .01 df = 11	Accepted
PJ	$\underline{r}$ = .64 $\underline{p}$ = > .05 df = 5	$\underline{r}$ = .18 $\underline{p}$ = > .05 df = 4	$\underline{r}$ = .75 $\underline{p}$ = < .005 df = 11	Rejected
IM	$\underline{r}$ = .76 $\underline{p}$ = < .025 df = 5	$\underline{r}$ = .00 $\underline{p}$ = > .05 df = 4	$\underline{r}$ = .51 $\underline{p}$ = > .05 df = 11	Accepted
Ho 3.3 Form 3 and 1 SM	$\underline{r}$ = .42 $\underline{p}$ = > .05 df = 4	$\underline{r}$ = .57 $\underline{p}$ = > .05 df = 5	$\underline{r}$ = .69 $\underline{p}$ = < .005 df = 11	Accepted
DR	$\underline{r}$ = .52 $\underline{p}$ = > .05 df = 4	$\underline{r}$ = -.71 $\underline{p}$ = < .05 df = 5	$\underline{r}$ = .11 $\underline{p}$ = > .05 df = 11	Accepted
RP	$\underline{r}$ = -.54 $\underline{p}$ = > .05 df = 4	$\underline{r}$ = .24 $\underline{p}$ = > .05 df = 5	$\underline{r}$ = .56 $\underline{p}$ = > .05 df = 11	Accepted
LR	$\underline{r}$ = .88 $\underline{p}$ = < .025 df = 4	$\underline{r}$ = -.05 $\underline{p}$ = > .05 df = 5	$\underline{r}$ = .77 $\underline{p}$ = < .005 df = 11	Rejected
PD	$\underline{r}$ = .02 $\underline{p}$ = > .05 df = 4	$\underline{r}$ = .05 $\underline{p}$ = > .05 df = 5	$\underline{r}$ = .57 $\underline{p}$ = > .05 df = 11	Accepted
PJ	$\underline{r}$ = .23 $\underline{p}$ = > .05 df = 4	$\underline{r}$ = -.10 $\underline{p}$ = > .05 df = 5	$\underline{r}$ = .43 $\underline{p}$ = > .05 df = 11	Accepted
IM	$\underline{r}$ = .76 $\underline{p}$ = < .05 df = 4	$\underline{r}$ = .60 $\underline{p}$ = > .05 df = 5	$\underline{r}$ = .61 $\underline{p}$ = < .025 df = 11	Accepted

TABLE 2

Correlation Coefficients For Alternate Forms
By Overall Scores

Forms	4-Year Olds	8-Year Olds	Total Population
1 to 2	.92**	.58	.97**
2 to 3	.77*	.89**	.93**
3 to 1	.69*	.42	.89**

*p= .05 **p= .005

Forms 1 to 2
4-year olds - cases= 7, df= 5
8-year olds - cases= 7, df= 5
total population - cases= 14, df= 12

Forms 2 to 3
4-year olds - cases= 7, df= 5
8-year olds - cases= 6, df= 4
total population - cases= 13, df= 11

Forms 3 to 1
4-year olds - cases= 6, df= 4
8-year olds - cases= 7, df= 5
total population - cases= 13, df= 11

TABLE 3

Correlation Coefficients For Alternate Forms
By Social Use Scores and Representational Use Scores

Forms	4-Year Olds	8-Year Olds	Total Population
1 to 2			
SU	.88**	.12	.79**
RU	.89**	.69*	.97**
2 to 3			
SU	.23	.80*	.77**
RU	.83*	.96**	.94**
3 to 1			
SU	.55	.22	.65*
RU	.44	.45	.83**

*p= .05 **p= .005

Forms 1 to 2
4-year olds - cases= 7, df= 5
8-year olds - cases= 7, df= 5
total population - cases= 14, df= 12

Forms 2 to 3
4-year olds - cases= 7, df= 5
8-year olds - cases= 6, df= 4
total population - cases= 13, df= 11

Forms 3 to 1
4-year olds - cases= 6, df= 4
8-year olds - cases= 7, df= 5
total population - cases= 13, df= 11

TABLE 4

Correlation Coefficients For Alternate Forms
By Specific Language Uses

Use	Forms 1 and 2			Forms 2 and 3			Forms 3 and 1		
	4-Year Olds	8-Year Olds	Total Pop.	4-Year Olds	8-Year Olds	Total Pop.	4-Year Olds	8-Year Olds	Total Pop.
SM	.76*	.31	.73**	-.17	.05	.46	.42	.57	.69**
DR	.64	-.72*	.26	.48	.23	.63*	.52	-.71*	.11
RP	.67*	-.20	.88**	.62	.72	.85**	-.54	.24	.56
LR	.19	-.13	.59*	.53	.69	.88**	.87*	-.05	.77**
PD	.63	.75*	.77**	.33	-.05	.64*	.02	.05	.57
PJ	.08	.30	.51*	.64	.18	.75**	.23	-.10	.43
IM	.64	.35	.67**	.76*	.00	.51	.76*	.60	.61*

*p = .05 **p = .005

Forms 1 to 2
4-year olds - cases= 7, df= 5
8-year olds - cases= 7, df= 5
total population - cases= 14, df= 12

Forms 2 to 3
4-year olds - cases= 7, df= 5
8-year olds - cases= 6, df= 4
total population - cases= 13, df= 11

Forms 3 to 1
4-year olds - cases= 6, df= 4
8-year olds - cases= 7, df= 5
total population - cases= 13, df= 11

.94 between the initial test and retest of Form 2, and .83 between the initial test and retest of Form 3. The coefficient alpha between each of the three sets of tests was .92, .94, and .94 respectively. When the tests were divided into subsets of Social Uses and Representational Uses, the correlation coefficients were all found to be high positive at the .005 level of statistical significance (Table 7). The coefficients of determination for the subsets of Social Uses revealed the shared variance between the initial test on Form 1 and the retest to be .56, between the initial test on Form 2 and the retest to be .75, and between the initial test on Form 3 and the retest to be .77. The $\underline{r}^2$ for the subsets of Representational Uses revealed the shared variance between the initial test on Form 1 and the retest to be .82, .88 for the initial and retest on Form 2, and .83 for the initial and retest on Form 3, again indicating a high test-retest reliability. When the tests were subdivided into the smaller units of language use, the majority of the correlations did indicate test-retest reliability (Table 8). The $\underline{r}$ and $\underline{r}^2$ for the initial test and retest of Form 1 for the uses of Self-maintaining, Reporting, Predicting, and Imagining are high positive. The $\underline{r}$ and $\underline{r}^2$ for the initial test and retest of Form 2 for the uses of Self-maintaining, Directing, Reporting, Towards Logical Reasoning, Predicting, and Projecting are all high positive. The $\underline{r}$ and $\underline{r}^2$ for specific language uses on the initial test of Form 3 and the retest are high positive for the uses of Self-maintaining, Reporting, Towards Logical Reasoning, Predicting, Projecting, and Imagining. This indicates that the aforementioned language uses do have high test-retest reliability and do measure the same characteristics over time. In addition, the specific use scores with high test-retest reliability for

any of the three forms are a good indication of the overall score reliability over time, although, they would be a somewhat lower estimate. It should be noted that test-retest reliability is usually affected by practice effect.

In an attempt to determine the effect of a larger population on reliability, a group of 6-year old children was added to the test-retest population for Form 1. The effect of this new population was to mildly depress both the correlation coefficient, from .90 to .86, and the coefficient of determination from .81 to .74. The alpha coefficient was .92. The correlation coefficient for Social Use scores was moderate but still indicated a substantial relationship at the .005 level of statistical significance. The coefficient of determination was .26. The correlation coefficient between Representational Use scores was high positive, $\underline{r}$ = .88, $\underline{p}$ = .005, $\underline{r}^2$ = .77. The only specific use scores which indicated a high positive correlation were Reporting, $\underline{r}$ = .76, $\underline{p}$ = .005, $\underline{r}^2$ = .58, and Predicting, $\underline{r}$ = .75, $\underline{p}$ = .005, $\underline{r}^2$ = .56.

One of the sources of variance may be related to the stability of a child's language system at various ages. Since the 6-year old group was the largest contributor to the above results, it may be that their system of language use is in a higher state of fluctuation than either the 4-year old or 8-year old age groups. It is known that children develop the concept of "home talk" and "school talk" (Hopper and Naremore, 1973). It may be that the language systems of 4-year old children are more stable because they have not yet been exposed to this difference; the 8-year old children may have already overcome dealing with the two

systems; whereas, the 6-year old children may be in a state of transition.

Internal Consistency

The coefficient alpha (r_{xx}), which measures the homogeneity of test items, was found to be high positive for all three sets of alternate forms of ACES (Table 9); r_{xx} = .94, r_{xx} = .93, and r_{xx} = .93, respectively. For the test-retest situation, the r_{xx} for each form was also found to be high positive; for Form 1, r_{xx} = .92, .94 for Form 2, and .94 for Form 3. When the 6-year old population was included in the Form 1 test-retest, the r_{xx} was .92.

Rater Reliability

Seven raters each scored and rescored five tests. The results of these scorings revealed that the correlation for intra-rater reliability was high positive overall; r = .84, p = $<$.001, r^2 = .71 (Table 10). The correlations for inter-rater reliability among six of the seven raters was also high positive, ranging from r = .95, p = $<$.001 to r = .73, p = $<$.009. The seventh rater obtained correlations between .61, p = $<$.03 and .86, p = $<$.001 (Table 10). This indicated that a rater will score the same test in the same manner on two separate occasions and will score tests given to different subjects in the same manner.

TABLE 5

Summary For Test-Retest

Hypotheses	4-Year Olds	6-Year Olds	8-Year Olds	Total Pop.	Decision
Ho 4.1 Form 1	$\underline{r}$ = .96 $\underline{p}$ = <.005 r_{xx} = .93 df = 4	$\underline{r}$ = .73 $\underline{p}$ = <.005 r_{xx} = .89 df = 16	$\underline{r}$ = .16 $\underline{p}$ = >.05 r_{xx} = .71 df = 5	$\underline{r}$ = .86 $\underline{p}$ = <.005 r_{xx} = .92 df = 30	Rejected
Ho 4.2 Form 2	$\underline{r}$ = .95 $\underline{p}$ = <.005 r_{xx} = .93 df = 5		$\underline{r}$ = .76 $\underline{p}$ = <.05 r_{xx} = .90 df = 4	$\underline{r}$ = .93 $\underline{p}$ = <.005 r_{xx} = .94 df = 11	Rejected
Ho 4.3 Form 3	$\underline{r}$ = .80 $\underline{p}$ = <.05 r_{xx} = .93 df = 4		$\underline{r}$ = .49 $\underline{p}$ = >.05 r_{xx} = .88 df = 5	$\underline{r}$ = .91 $\underline{p}$ = <.005 r_{xx} = .94 df = 11	Rejected
Ho 5.1 Form 1 SU	$\underline{r}$ = .40 $\underline{p}$ = >.05 df = 4	$\underline{r}$ = .43 $\underline{p}$ = <.05 df = 16	$\underline{r}$ = .32 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .51 $\underline{p}$ = <.005 df = 30	Accepted
RU	$\underline{r}$ = .99 $\underline{p}$ = <.005 df = 4	$\underline{r}$ = .79 $\underline{p}$ = <.005 df = 16	$\underline{r}$ = -.10 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .88 $\underline{p}$ = <.005 df = 30	Rejected
Ho 5.2 Form 2 SU	$\underline{r}$ = .77 $\underline{p}$ = <.025 df = 5		$\underline{r}$ = .83 $\underline{p}$ = <.025 df = 4	$\underline{r}$ = .77 $\underline{p}$ = <.005 df = 11	Rejected
RU	$\underline{r}$ = .90 $\underline{p}$ = <.005 df = 5		$\underline{r}$ = .25 $\underline{p}$ = >.05 df = 4	$\underline{r}$ = .94 $\underline{p}$ = <.005 df = 11	Rejected
Ho 5.3 Form 3 SU	$\underline{r}$ = .84 $\underline{p}$ = <.025 df = 4		$\underline{r}$ = .52 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .65 $\underline{p}$ = <.01 df = 11	Accepted
RU	$\underline{r}$ = .82 $\underline{p}$ = <.025 df = 4		$\underline{r}$ = .40 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .78 $\underline{p}$ = <.005 df = 11	Rejected
Ho 6.1 Form 1 SM	$\underline{r}$ = .77 $\underline{p}$ = <.05 df = 4	$\underline{r}$ = .58 $\underline{p}$ = <.05 df = 16	$\underline{r}$ = .25 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .68 $\underline{p}$ = <.005 df = 30	Accepted

TABLE 5 (Continued)

Hypotheses	4-Year Olds	6-Year Olds	8-Year Olds	Total Pop.	Decision
DR	$\underline{r}$ = -.60 $\underline{p}$ = >.05 df = 4	$\underline{r}$ = .48 $\underline{p}$ = <.025 df = 16	$\underline{r}$ = .26 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .29 $\underline{p}$ = >.05 df = 30	Accepted
RP	$\underline{r}$ = .75 $\underline{p}$ = <.05 df = 4	$\underline{r}$ = .31 $\underline{p}$ = >.05 df = 16	$\underline{r}$ = -.05 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .76 $\underline{p}$ = <.005 df = 30	Rejected
LR	$\underline{r}$ = .52 $\underline{p}$ = >.05 df = 4	$\underline{r}$ = .70 $\underline{p}$ = <.005 df = 16	$\underline{r}$ = -.54 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .54 $\underline{p}$ = <.005 df = 30	Accepted
PD	r = .41 $\underline{p}$ = >.05 df = 4	r = .67 $\underline{p}$ = <.005 df = 16	r = .77 $\underline{p}$ = <.025 df = 5	r = .74 $\underline{p}$ = <.005 df = 30	Rejected
PJ	$\underline{r}$ = .68 $\underline{p}$ = >.05 df = 4	$\underline{r}$ = .45 $\underline{p}$ = <.05 df = 16	$\underline{r}$ = .36 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .64 $\underline{p}$ = <.005 df =30	Accepted
IM	$\underline{r}$ = .83 $\underline{p}$ = <.025 df = 4	$\underline{r}$ = -.10 $\underline{p}$ = >.05 df = 16	$\underline{r}$ = -.64 $\underline{p}$ = >.05 df = 5	$\underline{r}$ = .46 $\underline{p}$ = <.005 df = 30	Accepted
Ho 6.2 Form 2 SM	$\underline{r}$ = .06 $\underline{p}$ = >.05 df = 5		$\underline{r}$ = .79 $\underline{p}$ = <.025 df = 4	$\underline{r}$ = .87 $\underline{p}$ = <.005 df = 11	Rejected
DR	$\underline{r}$ = .92 $\underline{p}$ = <.005 df = 5		$\underline{r}$ = .60 $\underline{p}$ = >.05 df = 4	$\underline{r}$ = .83 $\underline{p}$ = <.005 df = 11	Rejected
RP	$\underline{r}$ = .62 $\underline{p}$ = >.05 df = 5		$\underline{r}$ = .19 $\underline{p}$ = >.05 df = 4	$\underline{r}$ = .78 $\underline{p}$ = <.005 df = 11	Rejected
LR	$\underline{r}$ = .70 $\underline{p}$ = <.05 df = 5		$\underline{r}$ = .79 $\underline{p}$ = <.05 df = 4	$\underline{r}$ = .92 $\underline{p}$ = <.005 df = 11	Rejected
PD	$\underline{r}$ = .59 $\underline{p}$ = >.05 df = 5		$\underline{r}$ = .52 $\underline{p}$ = >.05 df = 4	$\underline{r}$ = .77 $\underline{p}$ = <.005 df = 11	Rejected

TABLE 5 (Continued)

Hypotheses	4-Year Olds	6-Year Olds	8-Year Olds	Total Pop.	Decision
PJ	$r = .89$ $p = <.005$ $df = 5$		$r = .45$ $p = >.05$ $df = 4$	$r = .94$ $p = <.005$ $df = 11$	Rejected
IM	$r = 1.$ $p = <.000$ $df = 5$		$r = -.22$ $p = >.05$ $df = 4$	$r = .66$ $p = <.01$ $df = 11$	Accepted
Ho 6.3 Form 3 SM	$r = .96$ $p = <.005$ $df = 4$		$r = .36$ $p = >.05$ $df = 5$	$r = .69$ $p = <.005$ $df = 11$	Accepted
DR	$r = .59$ $p = >.05$ $df = 4$		$r = .48$ $p = >.05$ $df = 5$	$r = .11$ $p = >.05$ $df = 11$	Accepted
RP	$r = .56$ $p = >.05$ $df = 4$		$r = .91$ $p = <.005$ $df = 5$	$r = .56$ $p = >.05$ $df = 11$	Accepted
LR	$r = .79$ $p = <.05$ $df = 4$		$r = .14$ $p = >.05$ $df = 5$	$r = .77$ $p = <.005$ $df = 11$	Rejected
PD	$r = .69$ $p = >.05$ $df = 4$		$r = .76$ $p = <.025$ $df = 5$	$r = .57$ $p = >.05$ $df = 11$	Accepted
PJ	$r = .80$ $p = <.05$ $df = 4$		$r = .22$ $p = >.05$ $df = 5$	$r = .43$ $p = >.05$ $df = 11$	Accepted
IM	$r = 1.$ $p = <.000$ $df = 4$		$r = .28$ $p = >.05$ $df = 5$	$r = .61$ $p = <.025$ $df = 11$	Accepted

TABLE 6

Correlation Coefficients For Test-Retest
By Overall Scores

Forms	4-Year Olds	6-Year Olds	8-Year Olds	Total Population
1	.96**	.73**	.16	.86**
2	.95**		.76*	.93**
3	.80*		.49	.91**

*p= .05 **p= .005

Form 1
4-year olds - cases= 7, df= 5
6-year olds - cases= 18, df= 16
8-year olds - cases= 7, df= 5
total population - cases= 32, df= 30

Form 2
4-year olds - cases= 7, df= 5
8-year olds - cases= 6, df= 4
total population - cases= 13, df= 11

Form 3
4-year olds - cases= 6, df= 4
8-year olds - cases= 7, df= 6
total population - cases= 13, df= 11

TABLE 7

Correlation Coefficients For Test-Retest
By Social Use Scores and Representational Use Scores

Forms	4-Year Olds	6-Year Olds	8-Year Olds	Total Population
1				
SU	.40	.43	.32	.51
RU	.99**	.79**	-.10	.88**
2				
SU	.77*		.83*	.77**
RU	.90**		.25	.94**
3				
SU	.84*		.52	.65*
RU	.82*		.40	.78**

*p= .05 **p= .005

Form 1
4-year olds - cases= 7, df= 5
6-year olds - cases= 18, df= 16
8-year olds - cases= 7, df= 5
total population - cases=32, df= 30

Form 2
4-year olds - cases=7, df= 5
8-year olds - cases= 6, df= 4
total population - cases= 13, df=11

Form 3
4-year olds - cases=6, df=4
8-year olds - cases= 7, df=5
total population - cases= 13, df= 11

TABLE 8

Correlation Coefficients For Test-Retest
By Specific Language Uses

Use	Form 1				Form 2			Form 3		
	4-Year Olds	6-Year Olds	8-Year Olds	Total Pop.	4-Year Olds	8-Year Olds	Total Pop.	4-Year Olds	8-Year Olds	Total Pop.
SM	.77*	.58*	.25	.68*	.06	.79*	.87**	.96**	.36	.69**
DR	-.60	.48	.26	.29	.92**	.60	.83**	.59	.48	.11
RP	.75*	.31	-.05	.76**	.62	.19	.78**	.56	.91**	.56*
LR	.52	.70**	.54	.54*	.70*	.79*	.92**	.79*	.14	.77**
PD	.41	.67*	.77*	.74**	.59	.52	.77**	.69*	.76*	.57*
PJ	.68*	.45	.36	.64**	.89**	.45	.94**	.80**	.22	.43
IM	.83*	-.10	-.64	.46	1.00**	-.22	.66*	1.00**	.28	.61*

*p = .05 **p = .005

Form 1
4-year olds - cases 7, df= 5
6-year olds - cases 18, df= 16
8-year olds - cases 7, df= 5
total population - cases 32, df= 30

Form 2
4-year olds - cases 7, df= 5
8-year olds - cases 6, df= 4
total population - cases 13, df= 11

Form 3
4-year olds - cases 6, df= 4
8-year olds - cases 7, df= 5
total population - cases 13, df= 11

TABLE 9

Summary For Internal Consistency

Hypotheses	4-Year Olds	6-Year Olds	8-Year Olds	Total Pop.	Decision
Ho 7.1 Form 1	r_{xx}= .93	r_{xx}= .89	r_{xx}= .71	r_{xx}= .92	Rejected
Ho 7.2 Form 2	r_{xx}= .93		r_{xx}= .93	r_{xx}= .94	Rejected
Ho 7.3 Form 3	r_{xx}= .93		r_{xx}= .88	r_{xx}= .94	Rejected
Ho 7.4 Form 1 to 2	r_{xx}= .93		r_{xx}= .68	r_{xx}= .93	Rejected
Ho 7.5 Form 2 to 3	r_{xx}= .92		r_{xx}= .93	r_{xx}= .94	Rejected
Ho 7.6 Form 3 to 1	r_{xx}= .91		r_{xx}= .78	r_{xx}= .93	Rejected

TABLE 10

Summary For Rater Reliability

Hypothesis	r	Decision
Ho 8 Intra-rater	.84 p = <.001	Rejected
Ho 9 Inter-rater		
1 to 2	.76 p = <.009	Rejected
1 to 3	.90 p = <.001	Rejected
1 to 4	.93 p = <.001	Rejected
1 to 5	.82 p = <.002	Rejected
1 to 6	.62 p = <.027	Accepted
1 to 7	.94 p = <.001	Rejected
2 to 3	.88 p = <.001	Rejected
2 to 4	.78 p = <.004	Rejected
2 to 5	.81 p = <.002	Rejected
2 to 6	.67 p = <.02	Accepted
2 to 7	.79 p = <.003	Rejected
3 to 4	.93 p = <.001	Rejected

TABLE 10 (Continued)

Hypothesis	r	Decision
3 to 5	.95 p = <.001	Rejected
3 to 6	.83 p = <.002	Rejected
3 to 7	.87 p = <.001	Rejected
4 to 5	.90 p = <.001	Rejected
4 to 6	.69 p = <.014	Accepted
4 to 7	.90 p = <.001	Rejected
5 to 6	.86 p = <.001	Rejected
5 to 7	.80 p = <.003	Rejected
6 to 7	.61 p = <.032	Accepted

CHAPTER V

SUMMARY

In this study, an attempt was made to establish the reliability of the Assessment of Communication in Everyday Situations. Twenty-one children, ages 3 years, 9 months to 4 years, 3 months, and 21 children, ages 7 years, 9 months to 8 years, 3 months, were selected at random to receive the various forms of ACES in both test-retest and alternate form situations. An additional group of 21 children, ages 5 years, 9 months to 6 years, 3 months, were selected at random to receive Form 1 as a test and retest. After discarding tapes of poor quality and dividing the children into various groups, the following sets of children were actually used: test schedule 1,1,2, seven 4-year olds and seven 8-year olds; test schedule 2,2,3, seven 4-year olds and six 8-year olds; test schedule 3,3,1, six 4-year olds and seven 8-year olds; test schedule 1,1 eighteen 6-year olds.

Results of the alternate form study indicated that the Overall score, Social Use score, and Representational Use score all correlate significantly with their counterpart between each of the three forms of ACES. The coefficients of determination indicated that variance which occurred was shared variance. The correlations between specific use scores did not reveal any clear pattern of co-relationship. Therefore, the three forms of ACES do measure the same characteristics.

Results of the test-retest study for the combined 8- and 4-year old population indicated that the Overall scores, Social Use scores, Representational Use scores and the majority of specific use scores did correlate significantly from one test to the next. This indicated that

the various forms of ACES do measure the same characteristic over a period of time. When the 6-year old population was included in the test-retest situation for Form 1 of ACES, a lower but high positive correlation was the result.

The alpha coefficients between forms of the test and within test forms were all high positive for the combined 4- and 8-year old population. The alpha coefficient for Form 1 test-retest when the 6-year old population was included was also high positive.

To assess rater reliability, five tape recordings of 6-year old children on Form 1 were scored and rescored by seven raters which meant that a total of 450 items were scored in all. The correlation coefficient for intra-rater reliability was high positive at the .005 level of statistical significance. This indicated that a rater will score and rescore the same test on two separate occasions in the same manner. The correlation coefficients between six of the seven raters were also high positive varying between the .000 and .009 level of statistical significance. The seventh rater's correlation to the other raters varied between moderate but definite, and high positive.

Suggestions for Further Research

The results of this pilot study established the reliability of an efficient, systematic assessment of language use for children ages 4 through 8. The information that can be obtained through the use of ACES yields valuable information not only to the speech and language pathologist, but also to the classroom teacher. For the speech and language pathologist, it can add the area of language use to present therapy procedures; and for the classroom teacher, it can add this area

of language to present language stimulation programs, aiding both normal and deviant users of language.

In order for ACES to be of even greater value, further research should include:

1. A replication of this reliability study with a larger sample population drawn from different geographic areas of the country.
2. A developmental study to establish test norms for the various age groups to be examined by ACES.
3. A hierarchical analysis of the seven specific language uses.
4. An examination of teaching strategies that may best be used to develop appropriate language uses for both normal and deviant users of language.

APPENDIX A

A FRAMEWORK FOR THE CLASSIFICATION OF THE USES OF LANGUAGE

A FRAMEWORK FOR THE CLASSIFICATION OF THE USES OF LANGUAGE

Operational Definitions and Examples

I. SELF-MAINTAINING - the use of language to create an awareness of the speaker's identity and to promote his position in relation to others.

a. Referring to physical and psychological needs - includes utterances which seek to satisfy desires.

1. I want a new bicycle.
2. I need to wash my hands.
3. I want the yellow one.

b. Protecting the self and self interests - includes utterances spoken in defense of oneself and one's rights and property.

1. That's my bow.
2. Give me that back, I'm using it.
3. Don't take it, it's mine.

c. Justifying behavior and claims - includes utterances which give a psychological (appealing to internal states or motivations) or social (appealing to rules, conventions, what is expected or simply fact) reason for actions or demands.

1. Please let me go to the party. I promise to clean up my room.
2. I'm gonna mess your picture all up because I don't like it.
3. You can't play. You're too little.

d. Criticizing others - includes utterances which find fault with the listener often by belittling his status or abusing him by name calling.

1. You're a dummy.
2. You're not setting the table right.
3. I don't like your house, it's yukky.

e. Threatening others - includes utterances which promise to bring about a state considered to be unpleasant to the listener. A threat is usually accompanied by a statement of the external conditions under which the event will take place.

1. You better let me have a turn or I'll tell the teacher.
2. If you don't stop bothering us, I'll tell my mother.
3. Your house is ugly. I'm gonna mess it all up.

II. DIRECTING - the use of language to control or regulate the physical actions and operations performed by oneself and others.

a. Monitoring own actions - includes the running commentary or monologue which accompanies and reflects upon the speaker's own ongoing activity.

1. I'll put some tape on here and over here.
2. I'll put the doors here and the window here.
3. I'm putting the peanut butter on this and the jelly on this.

b. Directing the actions of the self - includes the running commentary or monologue which guides and controls the speaker's own ongoing activity. It implies a measure of high concentration on precise, sustained or intricate activity which commonly occurs in the face of some difficulty or obstacle.

1. I have to slide this off and put the thing through the paper.
2. I'm pulling it, pulling it; it tore.
3. This is hard to open. I'm twisting it, turning it.

c. Directing the actions of others - includes utterances which are designed to guide a listener through an immediate action or series of actions.

1. Pick out a square. Put the door in the middle and the chimney on top.
2. Put the toy in the box, then put the paper over the box and tape it down. Next you put the bow on top.
3. Slide the wings through there and put the tail right here.

d. Collaborating in action with others - includes utterances made in a context of cooperation which propose or plan a course of action for the speaker and one or more listeners.

1. You put the plates and the cups out and I'll do the napkins and the silverware.
2. I'll look at the car and you look at the jump rope.
3. When you finish putting on the wheels, I'll put on the windows.

III. REPORTING - the use of language to provide information about past and present experiences.

a. Labeling - includes utterances which serve the simple purpose of identifying observed phenomena.

1. I see a pencil, kleenex, and an eraser.
2. I like the ball and the babydoll.
3. Peanut butter and jelly sandwiches and juice.

b. Referring to detail - includes utterances which serve to describe the criterial attributes of objects, actions and/or events.

1. I want the orange ball with the stars on it.
2. The nurse's kit has some tiny bandaids and a thermometer in it.
3. I use the one with the little bug sitting under the mushroom.

c. Referring to incidents - includes utterances which describe the occurrence of an action or event.

1. She's jumping rope and they're playing marbles.
2. We played with the shapes and I got to clean the blackboard.
3. The bandit is shooting his gun.

d. Referring to the sequence of events - includes utterances which accurately reflect the serial nature of several, related actions or incidents.

1. First we played Pin-the-Tail-on-the-Donkey and then Jean opened her presents.
2. I get up in the morning, get dressed, eat my breakfast and pack my lunch.
3. We played ball, flew an airplane and finally we ate lunch.

e. Making comparisons - includes utterances which link objects, actions or experiences through examination of similarities and differences.

1. My ball is bigger and it's a different color than this one.
2. This lunchbox is little and this one is big.
3. On my picnic we didn't go to a park. We went to the beach.

f. Recognizing related aspects - includes utterances which posit an association between two or more actions or events.

1. The cowboy is driving the stagecoach and it's going very fast.
2. He was walking on top of the monkey bars in his new shoes and he slipped and fell.
3. The wind stopped blowing and my plane crashed.

g. Extracting or recognizing central meaning - includes utterances which impose a primary structure or coherence upon a situation or event and serve to unify the contributing parts into a composit whole.

1. The robber stole all the money from the stagecoach.
2. The dog wasn't happy with just one pork chop and he tried to get another one and lost them both.
3. Mom was in the kitchen making juice and she dropped something.

h. Reflecting on the meaning of experiences - includes utterances which express the speaker's attitudes or feelings about a situation.

1. I liked the party. We had a good time.
2. I feel sad about my best friend being in a different class.
3. I was mad because my plane crashed.

IV. TOWARDS LOGICAL REASONING - the use of language which employs rational thought and argument to interpret experiences.

a. Explaining a process - includes utterances which describe a particular method of doing something, generally involving several steps or operations.

1. You put on a blindfold and get turned all around. Then you pin the tail on the donkey.
2. Everybody gets in a circle and one person walks around the circle and taps everyone on the head. When he says goose you got to run and try to catch him.
3. You put the peanut butter on a piece of bread and the jelly on another piece and then you put them together.

b. Recognizing causal and dependent relationships - includes utterances which acknowledge a logical and relevant connection between two situations and which express this most commonly in terms of "how" and "why".

1. She gets a tummy ache cause she eats too much cake.
2. I can't write with this pencil cause it doesn't have a point.
3. If it rains, we can't go on the picnic.

c. Recognizing problems and their solutions - includes utterances which acknowledge obstacles to a course of action and suggest ways to surmount them.

1. That box is too small. I need a bigger one.
2. The red blouse is missing a button, I'll wear the white one.
3. That bag's got a hole in it. Let's use the other one.

d. Justifying judgments and actions - includes utterances which offer a reason or explanation for decisions and behaviors which apply only to a particular situation.

1. I don't want to buy the dog. One eye is missing.
2. I can't go with you now. I have to clean the blackboards first.
3. If she climbs the tree, she might fall and break her arm again.

e. Reflecting on events and drawing conclusions - includes utterances which evaluate the implications of an action or event and result in judgments.

1. It's not nice to take someone else's candy.
2. It's not nice to be greedy.
3. She's gotta be careful so she won't break her arm again.

f. Recognizing principles - includes utterances which provide an elemental rule or rules to explain observed phenomena.

1. It's worse for a big boy cause they should know better.
2. No, it's not right cause we should take turns.
3. The sun has been shining on the slide all day and it's very hot.

V. PREDICTING - the use of language to extend communication beyond immediate present or past experiences to events that have not yet occurred and which may never take place.

a. Anticipating/forecasting - includes utterances which contemplate future happenings.

1. My birthday is in the summer.
2. I'm gonna play on the swing.
3. We're going on Saturday.

b. Anticipating the detail of actions and events - includes utterances which delineate or describe future happenings or remote concerns.

1. I would like to have a dress-up party.
2. I'd like some sugar cookies and some chocolate milk.
3. She should put down the plates for each of us. Put the cups above the plates and the silverware on each side.

c. Anticipating the sequence of events - includes utterances which propose an ordered series of related actions or events.

1. First, I'll put the paper on, then I'll put a bow on top.
2. First I get dressed and then I eat breakfast.
3. We'll play in the park and then we'll eat.

d. Anticipating problems and possible solutions - includes utterances which acknowledge possible obstacles to a planned course of action and suggest ways to surmount them.

1. There won't be enough cake. She'll have to cut more pieces.
2. If the door was locked, I'd go over to Jeff's house and wait til Mom got home.
3. If it rains, we'll go to the movies.

e. Anticipating and recognizing alternative courses of action - includes utterances which offer several different interpretations or explanations of a situation.

1. He might be running to catch a bus or he might have stolen a toy.
2. I could use a pen or a crayon.
3. We could have some lemonade or ice tea.

f. Predicting consequences of actions or events - includes utterances which suggest a possible outcome of some immediate or future action or event.

1. The police might catch him and put him in jail.
2. If I'm not careful, I might fall down and hurt myself.
3. She'll have to clean it up.

VI. PROJECTING - the use of language within an unfamiliar or external context.

a. Projecting into the experiences of others - includes utterances which contemplate everyday occurrences from another's perspective.

1. He'll have to sleep on a hard bed.
2. She will make new friends.
3. She couldn't tie her shoes.

b. Projecting into feelings of others - includes utterances which reflect what it feels like to be another individual. Emotions and attitudes which are representative of another's point of view are expressed.

1. I think Jean feels happy.
2. She's sad, too.
3. He feels bad.

c. Projecting into reactions of others - includes utterances which consider how another individual would respond to a particular situation or experience.

1. That's alright Jeff. I'll clean it up.
2. Alright quiet down or we won't go outside.
3. I don't want to climb the tree.

d. Projecting into situations never experienced - includes utterances in which the speaker conjectures about his own feelings and reactions to unfamiliar activities or events.

1. I'd be locked up in a cell and I wouldn't get much to eat.
2. I'd let everybody go home at noon.
3. The doctor would fix my arm.

VII. IMAGINING - the use of language by an individual to create his own world.

a. Developing an imaginary situation based on real life - includes utterances used to assume a make-believe role in a situation which is possible in everyday life.

1. May I take your order please. Yes, I'd like some coffee and a piece of blueberry pie. O.K. Coming right up.
2. Look! The horse is chewing on the fence. Hey, Tex come help me with this pony.
3. Hurry up! The judges are already seated and the rodeo is about to start. Let's buy our tickets.

b. Developing an imaginary situation based on fantasy - includes utterances used to assume a make-believe role in a situation which has never happened or could never happen.

1. I'm gonna radio the base ship. There's a falling star in our path.
2. Spiderman won't catch me this time. I'm gonna rob the bank.
3. Look! Tyrannosaurus Rex is eating the tree for lunch. We better get in the cave.

c. Developing an original story - includes a fictional account of incidents or events, generally consisting of an introduction, development, and conclusion.

1. One day Joey found an old dirty ball in the street. He picked it up and took it home. Then he washed it off and it was as good as new.
2. One day a little doggie got sick. Nurse Nellie gave him some medicine and made him all better.
3. One day I found a little silver cup in a drawer. My mom told me it was my baby cup so I polished it and put it on a shelf in my room.

APPENDIX B

FORM 1 OF ACES - THE BIRTHDAY PARTY

INSTRUCTIONS

We're going to talk to some puppets and play with some toys today. While we're playing, I'll be asking both of you many questions. Some of the questions will be hard to answer and some of them will be easy, but I want you to answer all of them as completely and as well as you can.

Sometimes, I'll be talking to _____ a little
subject's name

bit more than _____ but I want _____
friend's name friend's name

to listen very carefully so he/she can be the helper. Are you ready? Let's meet my puppet friends, now.

ITEM	ACTION	INSTRUCTION	INTRODUCTION - THE BIRTHDAY PARTY
1.	Hold up Gene/Jean Puppet	_____ and subject's name _____ I have some friend's name friends I'd like you to meet. This is Gene/Jean. Hi _____ and _____. subject name friend's name --- _____, *say hello to* *subject's name* *Gene/Jean.* _____ *say hello to* *friend's name* *Gene/Jean.*	
2.	Hold up Mom Puppet	This is Gene's/Jean's Mom, Mrs. Winkler. Hi _____. subject's name Hi _____. friend's name --- _____, *say hello to* *subject's name* *Mrs. Winkler.* _____, *say hello to* *friend's name* *Mrs. Winkler.*	
3.		Mrs. Winkler and Gene/Jean would like to get to know you better. They want to talk with you for a few minutes. Will you talk to Mrs. Winkler and Gene/Jean _____? subject's name _____? friend's name ---	

ITEM	ACTION	INSTRUCTION
		Will you talk to Mrs. Winkler and Gene/Jean _____? *subject's name* *How about you* _____? *friend's name*
4.	Hold up Gene/Jean Puppet	Today's my birthday. I'm going to have a party. Do you like parties _____? subject's name How about you, _____? friend's name --- *I want you to come to my party. Will you come* _____? *will you* *subject's name* _____? *friend's name*
5.	Hold up Gene/Jean Puppet	I'm having ice cream at my party. _____, do subject's name you like strawberry or vanilla ice cream? _____? friend's name --- *I like strawberry ice cream. I'm having some cake, too. Do you like chocolate or yellow cake* _____? *subject's name* _____? *friend's name*

ITEM	ACTION	INSTRUCTION
6.	Hold up Gene/Jean Puppet	We're going to play some games at my party, too. What kinds of games do you like to play _____? How about subject's name you _____? friend's name --- *I like to play musical chairs. What other games do you like to play _____? How subject's name about you _____? friend's name*
7.	Hold up Gene/Jean Puppet	Tell me how you play _____ use game child mentioned, _____. _____ subject's name friend's name how do you play _____ use game child mentioned. --- *When we play musical chairs, Mom turns on the record player and we all march around the chairs. Then she stops the music and everybody tries to find a chair. _____ subject's name tell _____ how to friend's name play _____ use game subject mentioned.*

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
1.	Hold up Mother Puppet	Your friend Gene/Jean is going to have a birthday party. He/she wants you to come to the party and you really want to go. But you need to ask your mother first if it will be alright. What will you say to your mother? --- *Ask your mother to let you go to the party.*	May I go to Gene/Jean's birthday party, mom?	SM-f	1.6			
2.	Hold up Mother Puppet	Your mother is not sure if she should let you go to the party. She says, "Yesterday, you forgot to clean up your room and today, you left your toys all over the house." What would you say to your mother to get her to change her mind. --- *Tell your mother why you should go to the party.*	Please let me go to the party. I promise to clean up my room and pick up my toys.	SM-c	1.3			
3.	Give Phone to subject	Finally, she decides to let you go to the party. You are very happy. You race to the phone to call your friend _____. You want to know if he's/she's going to the party also. What would you say to _____? friend's name --- *Ask _____ if he/she is going to the party.* *friend's name*	Are you going to Gene/Jean's party?	Pd-g	5.7			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
4.	Point to friend	_____ says he/she friend's name hasn't been invited. Find out how he/she feels about not being invited. --- *Ask _____ how he/she friend's name feels about not being invited to the party.*	Are you sad cause you weren't invited to the party?	Pj-e	6.5			
*5.	Give play money to subject and friend Hold up Toy Store window	As you are about to hang up the phone, _____ Mom friend's name tells him/her that his/her invitation just arrived in the mail. You are both very happy. Your Mom gives you a dollar to buy Gene/Jean a present and takes you to the toy store to pick something out. In the window, you see many nice toys. Tell _____ which toys you friend's name like best. --- *Name the toys you like the best.*	I like the ball and the drum.	Rp-a	3.1		
*6-7		As you are looking at the toys in the window, you see an older boy leaving the store very quickly. What do you think might be happening? Anything else? Anything else? --- *Tell me what the older boy might be doing? Anything else? Anything else?*	He might be running to catch the bus. Or he might have stolen a toy.	Pd-a Pd-e	5.1 5.5			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
8.		Suppose the boy stole a toy from the store and that's why he's leaving in such a hurry. What do you think might happen to him? --- *Repeat*	The police might catch him and put him in jail.	Pd-f	5.7			
9.		Suppose they send the boy to jail. What do you think might happen to the boy while he's in jail? --- *Suppose they send the boy to jail. What might the boy do while he's in jail?*	He'll have to sleep on a hard bed.	Pj-a	6.1			
*10.		Pretend you had to go to jail for stealing a toy. Tell me about it. --- *What might happen to you in jail?*	I'd be locked up in a cell and I wouldn't get much to eat.	Pj-d	6.4			
11.	Show strange toy Hold up Saleslady Puppet	You decide to go in the store to look at the toys more closely. On the shelf, you see a strange-looking toy. You don't know what it is. What do you say to the saleslady? --- *You see a strange-looking toy on the shelf. Find out what it is.*	What's that?	Rp-i	3.6			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
12.	Show three balls	You decide to buy Gene/Jean a ball, but there are many to choose from. Describe to the saleslady which ball you want. --- *Describe to the saleslady the ball you want to buy.*	I want the orange one with the stars.	Rp-b	3.2			
*13.	Saleslady Puppet	Make up your own story about the ball. --- *Tell me a story about the ball.*	One day Joey found an old dirty ball in the street. He took it home and washed it off and it was as good as new.	Im-c	7.3			
14.	Three balls Saleslady Puppet	The saleslady seems pleased that you want the ball. She asks if you have a ball at home. Tell her about your ball. How is your ball different from these balls? --- *How are <u>these</u> balls different from one another?*	My ball is bigger than this one.	Rp-e	3.5			
15.	Saleslady Puppet	While you are picking out your ball, your friend _____ is running around the store. The saleslady says, "Please don't run!" Find out why she said that. friend's name --- *Ask the saleslady why running is not allowed in the store.*	Why can't _____ run in the store? friend's name	LR-g	4.7			
*16.	Place assorted toys in front of children	_____ wants to buy a present, too. Talk it over. Help him/her decide what to buy. friend's name --- *REPEAT*	I'll look at the cards and you look at the jumprope.	Dr-d	2.4			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
17.	Saleslady Puppet shows stuffed dog to friend	The saleslady thinks that you are having a hard time deciding what to buy. She suggests, "Why don't you buy a stuffed dog." What do you say to her? Why? --- *Do you want to buy the stuffed dog? Why do/don't you want to buy it?*	I don't want to buy the dog. The eye is missing.	LR-d	4.4			
*18.	Mom puppet hands small box to subject	You pay for your presents and take them home to be wrapped. You are very happy about your purchases. Your mother gives you a box to wrap the ball in. What do you say to her? --- *REPEAT*	That box is too small. I need a bigger one.	LR-c	4.3			
19.	Place other box and wrapping materials on table	Now _____, it's time (subject's name) to wrap your present. Tell us how you will do it? What will you do next? --- *How will you wrap your present? What will you do next?*	First, I'll put the paper on and then I'll put a bow on top.	Pd-c	5.3			
20.	Mom puppet hands empty tape dispenser to subject Full tape dispenser, glue & paste are on table	Mom says, "Here's some tape to hold the wrapping paper together." --- *"Here's some tape." (IF SUBJECT DOESN'T NOTICE THAT THE ROLL OF TAPE IS EMPTY .....SAY....."I'm sorry, we're out of tape. What could you use instead?"*	This tape is allgone. I need another roll.	LR-c	4.3			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
21.		Oh, I'm sorry. I didn't notice that we were out of tape. Now go ahead and wrap it. --- *Wrap your present.*	I'll put some tape on here and here.	Dr-a	2.1			
22.	Mom puppet hands red bow to friend	As you continue to wrap your present, Mom gives the red bow to _____. You (friend's name) don't want him/her to have it; you want to use it yourself. What would you say to him/her? --- *Mom gives the red bow to _____ as you continue (friend's name) to wrap your present. You don't want him/her to have it. You want to use it yourself. What would you say to him/her?*	That's my bow.	SM-b	1.2			
23.	Wrapping materials	Now, it's _____ turn (friend's name) to wrap his/her present. Tell him/her how he/she should do it so that it looks just like yours. And then, what should he/she do? --- *How should _____ (friend's name) wrap his/her present to make it look just like yours? And then, what should he/she do?*	Put the paper on. Now tape it shut and put a bow on top.	Dr-c	2.3			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
24.	Hang up Pin-the-Tail on the Donkey	You've wrapped your presents and now you are off to the party. When you arrive, you see that the other children are playing Pin-the-Tail on the Donkey. You don't remember how to play the game. What would you say to Gene's/Jean's mother? --- *You don't remember how to play Pin-the-Tail on the Donkey. Ask Gene's/Jean's mother how to play.*	How do you play Pin-the-Tail on the Donkey?	Dr-e	2.5			
25.	Gene's/Jean's Mom Puppet	Gene's/Jean's mother tells you how to play. _____ (friend's name) wasn't listening. Tell _____ how to play (friend's name) the game. --- *REPEAT*	You put on a blind fold and get turned around. Then you pin-the-tail on the donkey.	LR-a	4.1			
*26.-27.	Paddle ball	After you finish playing Pin-the-Tail on the Donkey, you decide to play with the paddle ball. _____ (friend's name) wants to play with it, too, so he/she grabs it away from you. You don't like what he/she has done. You are not finished playing with the paddle ball. Pretend you are arguing with _____. (friend's name) What do you say to each other? --- *Now, you decide to play with the paddle ball. _____ (friend's name) wants to play with it, too.*	Give it back, you dummy or I'll tell Gene/Jean's Mom.	SM-d SM-e	1.4 1.5			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
*26.-27. (cont.)		*He grabs it away from you. You get into an argument with _____ about the friend's name paddle ball. Pretend you are arguing with _____. friend's name What would you say to each other?*						
*28.-29.	Wild West Model Gene/Jean Puppet	Now it's time to open the presents. Everyone gathers round to see what Gene/Jean got. He/she opens the first present. It's a wonderful Wild West Model. Gene/Jean passes it around for everyone to look at. Take a look and make up a story about what is happening. --- *Make up a story about what is happening in the Wild West Model.*	The cowboy is driving the stagecoach and it's going very fast. All of a sudden, a robber jumps out and steals all the money.	Rp-f Rp-g	3.6 3.7			
30.	Wild West Model	What are each of the people in the model doing? --- *What is the cowboy/bandit/ horse in the model doing?*	The cowboy is driving the stagecoach.	Rp-c	3.3			
31.		How do you think Gene/Jean feels about getting the model for a present? --- *REPEAT*	Happy	Pj-b	6.2			
32	Gene's/Jean's Mom Puppet	It's been a wonderful party, but you are getting hungry. What could you ask Gene's/ Jean's mother? --- *You are getting hungry. You would like to eat. Ask Gene's/ Jean's mother when you're gonna eat?*	When are we gonna eat?	SM-f	1.6			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
*33.	Shopping Center (Examiner assumes role of shopper to encourage initiation of play. Then examiner allows children to play, unassisted, for two minutes) (move shopper toward bank) (move shopper toward restaurant) (move waiter toward table)	Gene's/Jean's mother says, "I'm going to get the refreshments now. While I'm gone, you may play with Gene's/Jean's new toys. And here are some others you may play with, too." You and _____ decide to play friend's name with the shopping center first. I'll be Mrs. Cox and you be the banker and you be the waiter/waitress. I need to get some money at the bank. I think I'll have a cup of coffee before I do my shopping. --- *May I take your order please.* *I'll have a cup of coffee.*	Good morning Mrs. Cox. Do you need some money today? Good morning, may I take your order.	Im-a	7.1			
*34.	Spiderman-Incredible Hulk Colorforms (Examiner assumes role of Dr. Octopus to encourage initiation of play. Then examiner allows children to	Next you and _____ friend's name decide to play with the Spiderman and Incredible Hulk Colorforms. I'll be Dr. Octopus and you be Spiderman and you be the Incredible Hulk.	It looks like Dr. Octopus is robbing the bank. We better stop him.					

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
34. (cont.)	play unassisted, for two minutes. (move Dr. Octopus toward bank)	Spiderman won't catch me this time.						
	(move Dr. Octopus inside bank)	I'm gonna rob the bank.		Im-b	7.2			
	(move Dr. Octopus toward tellers' windows)	*Alright everybody, put your hands up, this is a stick up.*						
	(move Kraven toward Dr. Octopus)	*Kraven, give me a hand with this money.*						
*35.	Cake Gene's/ Jean's Mom Puppet Gene/Jean Puppet	Now, it's finally time to eat. Gene's/Jean's mother brings out the cake and places it on the table so that Gene/ Jean can blow out the candles. He/she makes a wish and blows them all out on the first try. What would you wish for if it were your birthday?	I want a new bicycle.	SM-a	1.1			
		Pretend it's your birthday. Blow out the candles. Make a wish.						
36.	Cake Gene's/ Jean's Mom Puppet	Gene's/Jean's mother cuts the cake into three pieces. There are five children at the party. What is wrong? What should Gene's/Jean's mother do?	There won't be enough cake. She'll have to cut more pieces.	Pd-d	5.4			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
36. (cont.)		*REPEAT*						
*37.	Pretend to spill juice	While you are eating, you spill your juice on Gene's/ Jean's mother's brand new carpet. What do you think his/her mother will say? --- *REPEAT*	That's allright _____. subject's name I'll clean it up.	Pj-c	6.3			
38.		Gene/Jean is eating very quickly. He/She has already eaten two pieces of cake. He/She wants another. What might happen if Gene/Jean eats three pieces of cake? Why? --- *What might happen if Gene/ Jean eats three pieces of cake? Why?*	He/She gets a tummyache cause he/she eats too much cake.	LR-b	4.2			
39.	Give candy in child-proof container to subject	Gene's/Jene's mother has placed some candy on the table for each guest. Open up your candy and have some. --- *Open up your candy and have some.*	This is hard to open. I'm twisting it and twisting it.	Dr-b	2.2			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
40.-41.	Candy Gene/Jean Puppet	As you are opening your candy, Gene/Jean grabs it away from you. What do you think about that? Suppose Gene's/Jean's baby brother grabbed your candy away from you. Would it be worse for a baby to take your candy than it is for a big boy/girl? Why is/isn't it worse? --- *REPEAT*	It's not nice to take someone else's candy. It's worse for a big boy/girl cause they should know better.	LR-e LR-f	4.5 4.6			
*42.	Hold up Mom Puppet	Now it's time to go home. You say good-bye to all and walk down the street to your house. Mother greets you at the door. She says, "I want to hear all about the party." Tell her all about the party from the time you got there till the time you left. Anything else? --- *Tell mother all about the party from the time you got there till the time you left. Anything else?*	First we played pin-the-tail on the donkey and then Gene/Jean opened his/her presents.	Rp-d	3.4			
43.	Mom Puppet	Tell mother what you thought of the party. --- *Did you like the party? Why/Why not?*	I liked the party. It was fun.	Rp-h	3.8			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
44.		When is your birthday? --- *REPEAT*	My birthday is in the summer.	Pd-a	5.1			
45.		What kind of pary would you like to have on your birthday? --- *REPEAT*		Pd-b	5.2			

APPENDIX C

FORM 2 OF ACES - THE FIRST DAY OF SCHOOL

INSTRUCTIONS

We're going to talk to some puppets and play with some toys today. While we're playing, I'll be asking both of you many questions. Some of the questions will be hard to answer and some of them will be easy, but I want you to answer all of them as completely and as well as you can.

Sometimes, I'll be talking to _____ a little
subject's name

bit more than _____ but I want _____
friend's name friend's name

to listen very carefully so he/she can be the helper. Are you ready? Let's meet my puppet friends, now.

ITEM	ACTION	INSTRUCTION	INTRODUCTION - THE FIRST DAY OF SCHOOL
1.	Hold up Danny Puppet	_____ and subject's name _____, I have some friend's name friend's I'd like you to meet. This is Danny, a new boy in your class this year. Hi _____ and subject's name _____. friend's name --- _____, *say hello to* *subject's name* *Danny.* _____, *say hello to* *friend's name* *Danny.*	
2.	Hold up Mrs. Greene Puppet	This is your new teacher, Mrs. Greene. Hi _____. subject's name Hi _____. friend's name --- _____, *say hello to* *subject's name* *Mrs. Greene.* _____, *say hello to* *friend's name* *Mrs. Greene.*	
3.	Hold up Danny Puppet	Mrs. Green and Danny would like to get to know you better. They want to talk with you for a few minutes. Will you talk to Mrs. Greene and Danny, _____? subject's name Will you _____? friend's name	

ITEM	ACTION	INSTRUCTION
3.		*Will you talk to Mom and Bobby,* _____? *subject's name* *Will you* _____? *friend's name*
4.	Hold up Danny Puppet	Today's my first day of school. I'm going to be in Mrs. Greene's class. Do you like school _____? subject's name How about you _____? friend's name ---------- _____ *and* *subject's name* _____, *I want you to* *friend's name* *come with me to school. Will you come to school with me* _____? *How about you* *subject's name* _____? *friend's name*
5.	Hold up Danny Puppet	My mom packed some pudding in my lunchbox for school. _____, do you like subject's name chocolate or vanilla pudding? _____? friend's name ---------- *I like chocolate pudding. Mom also packed some juice.* _____, *do you like* *subject's name* *apple or orange juice?* _____? *friend's name*

ITEM	ACTION	INSTRUCTION
6.	Hold up Danny Puppet	We're going to play outside during recess, too. What kinds of things do you like to do during recess _____? How about subject's name you _____? friend's name --- *I like to swing and climb on the monkey bars. What other kinds of things do you like to do _____? subject's name _____? friend's name*
7.	Hold up Danny Puppet	Tell me how you play _____, use activity child mentioned _____. _____ subject's name friend's name how do you play _____ use activity _____ child mentioned. --- *When I play on the monkey bars, I like to climb way up to the top and hang upside down from my knees. Tell _____ how to friend's name play. _____ use activity child _____. mentioned*

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT.	TARGET		RESPONSE		SCORE
1.	clock	Brrrring! It's seven o'clock and time to get up and get ready for the first day of school. You want to roll over and go back to sleep. What might happen if you sleep longer? --- *What might happen if you go back to sleep?*	If I sleep longer, I'll be late for school.	Pd-f	5.6			
*2.	Hold up Mother Puppet	Mom comes to your bed and says, "Time to get up!" She wants to make sure that you have plenty of time to get ready. Tell her <u>every-thing</u> you need to do to get ready for school from the time you get up til the time you leave. --- *From the time you get up til the time you leave what do you need to do to get ready for school?*	First I get dressed and then I eat breakfast.	Pd-c	5.3			
3.		You don't know what to wear this morning. What would you say to your mom? --- *Ask your mom what you should wear to school?*	What should I wear, Mom?	Dr-e	2.5			
4.	Show red shirt and white shirt	Mom wants you to look very nice on your first day of school. She takes out two shirts/blouses, a red one and a white one. She says "wear the red one." What would you say to her? ---		LR-c	4.3			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
4. (cont.)		*Do you want to wear the red shirt/blouse? Why do/don't you want to wear it?*						
5.	Hold up Two pencil boxes Hold up Mom Puppet	Finally you get dressed, eat your breakfast and are ready to go. Mom bought two pencil boxes, one for you and one for your big brother. Tell mom which pencil box you want. --- *Which pencil box do you want?*	I want the blue one with the blackboard on it.	SM-a	1.1			
* 6.	Give Pencil Box to child	You are very excited about your new pencil box. Mom put several things inside that you will need for school. Open up your pencil box and tell me what you find inside. --- *Name the things in your pencil box.*	pencils, scissors, and an eraser	Rp-a	3.1			
7.	Hold up Mother Puppet and give broken pencil to child	Mom doesn't want you to lose your pencil box. She says, "Here's a pencil. Write your name on your box." --- *"Here's a pencil. Write your name on your box."*	I can't write with this pencil cause it doesn't have a point.	LR-b	4.2			
8.	Mother Puppet	"Oh, I'm sorry. I didn't notice that the pencil was broken and I don't have another one," says mom. "What else could you use to put your name on your box?" "Anything else?" ---	I could use a pen or a crayon.	Pd-e	5.5			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
8. (cont.)		*Besides a pencil, what else could you use to put your name on your box? Anything else?*						
*9.	Sister Puppet	As you are putting your name on your pencil box with the crayon/pen etc., your little sister comes by. She wants the crayon/pencil/etc. so she walks up & grabs it. What would you say to her? --- *What would you say to your little sister if she grabbed your crayon/pen/etc. away from you while you were using it?*	**Give it back. I'm using it.**	SM-b	1.2			
10.	Give notebook and paper to child. Point to notebook clip.	Mom also bought you a notebook and some paper. Put the paper in the notebook. --- *Put the paper in your notebook.*	**I have to slide this off and put the thing through the paper.**	DR-b	2.2			
*11.	Mother Puppet-Hand lunchbox to child	You gather up all of your new school supplies and are about ready to leave. Mom hands you your lunchbox and says, "Have a nice day!" Do you have a lunchbox at home? Tell me about <u>your</u> lunchbox. How is it different from this one? --- *Tell me about these lunchboxes. How are they different from each other?*	**My lunchbox has Snoopy on it and this one has Star Trek on it.**	Rp-e	3.5			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
12.	Sister Puppet Mother Puppet	As you are walking out the door, your two-year old sister says, "I want to go to school, too." Mom says she will have to wait a couple of years. Why? --- *Why can't your little sister go to school with you?*	She can't go to school cause she's too little.	LR-b	4.2			
13.	Set up school blackboard and flag	When you get to school, you find out that one of your best friends won't be in your classroom this year. He/ She has to go to another room. How do you feel? --- *How do you feel when you find out that your best friend will not be in the same class with you?*	I feel sad.	Rp-h	3.8			
14.		How do you think your best friend feels about being moved to another room? --- *Repeat*	He/ She's sad, too.	PJ-b	6.2			
*15.		What do you think will happen to your friend in his/her new classroom? --- *What will your friend do in his/her new classroom?*	He/ She will make new friends.	PJ-a	6.1			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
16.	Boy Puppet	After you sit down, you notice that there is a new boy seated next to you. Find out his name. --- *Ask the new boy what his name is.*	What's your name?	Rp-1	3.9			
17	Boy Puppet	You like the new boy. You want him to sit with you and _____ at lunch. What would you say to him? (friend's name) --- *Ask the new boy to sit with you at lunch.*	Will you sit with us at lunch?	Sm-f	1.6			
*18.	Set out toys	Now, it's time for school to begin. The teacher says, "pick out a toy and describe it to the rest of the class." --- *Describe a toy to the rest of the class.*	The nurse's kit has some teeny weeny bandaids in it and a thing to take your blood pressure.	Rp-b	3.2			
19.		Now make up your own story about the toy. --- *Tell me a story about the toy.*	One day a little doggie got sick. Nurse Nellie gave him some medicine and made him all better.	Im-c	7.3			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
20.	Set out paper shapes	After show and tell, your teacher gives you and your friend _____ (friend's name) some freetime to do whatever you would like. You and _____ (friend's name) decide to play with the shapes. You decide to make a house with the shapes. Go ahead and make it. --- *Make the house.*	I'll put the door here and the windows here.	DR-a	2.1			
21.	Shapes	Now it's _____ (friend's name) turn to make something with the shapes. He/she decides to make a house, too. Tell him/her what to do. --- *Tell _____ (friend's name) how to make his house.*	Pick out a square. Put the door in the middle and the chimney on top.	DR-c	2.3			
*22.-23.		As _____ (friend's name) finishes his house, you both get into an argument about whose house is the best. What do you say to each other? --- *Have an argument with _____ (friend's name) about whose house is the best.*	I'm gonna mess your house all up cause it's yukky. I don't like your house.	SM-c/d	1.3 1.4			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
*24.	Shapes	You are about ready to clean up when you and _____ (friend's name) decide to make a car together. Talk it over and decide how you will do it. --- *Repeat*	I'll put the wheels on and you put the windows on.	DR-d	2.4			
25.		You have been working hard and are ready to go out to play. What will you do on the playground? --- *What will you do on the playground?*	I'm gonna play on the swing.	Pd-a	5.1			
26.		Find out from your teacher when you will be going out to play. --- *Ask your teacher when you will be going out to play.*	When are we going out to play?	Pd-g	5.7			
*27.	Teacher Puppet	Your teacher says, "We'll be going out to play in a few minutes. But first, I have to take something down to the principal's office." When your teacher returns, the class is very noisy. What do you think your teacher will say? --- *Repeat*	Alright quiet down or we're not going outside.	PJ-c	6.3			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
28.	Boy Puppet	Your teacher was very angry because the class was making so much noise. One of your classmates, the new boy even started to cry. What would you say to the new boy to find out why he was crying? --- *Ask the new boy why he is crying.*	Why are you crying?	PJ-e	6.5			
29.	Teacher Puppet Playground Set	It's almost time to play. Your teacher says, "Please stay a few minutes and clean the blackboard before you go outside." _____ (friend's name) wants to be the first on the playground. He/She asks you to go to the front of the line with him/her. What would you say to _____ (friend's name)? --- _____ (friend's name) *wants you to go out on the playground with him/her but your teacher has asked you to stay and clean the blackboards. What would you say to your friend?*	I can't go with you, now. I have to clean the blackboards first.	LR-d	4.4			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
30.		You finally finish cleaning the blackboards and join the other children on the playground. Everyone is playing duck, duck goose. You don't remember how to play. What would you say to the teacher? --- *Ask your teacher how to play Duck, Duck Goose.*	How do you play duck, duck, goose?	LR-g	4.7			
31.		_____ would like to friend's name play also, but he doesn't know the rules. Tell _____ how to play the friend's name game. (If child does not know how to play Duck, Duck Goose, find out what games he/she does know how to play and have him/her tell friend how to play.) --- *Repeat*	Everybody gets in a circle and one person is it. He walks around the circle and taps everyone on the head. When he says goose, that person tries to catch him.	LR-a	4.1			
*32.		After you've finished playing Duck, Duck Goose, you decide to swing on the monkey bars. What will happen if you're not careful? --- *What will happen if you're not careful while playing on the monkey bars?*	If I'm not careful, I might fall down and hurt myself.	Pd-f	5.6			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
33.	Teacher Puppet	_____ was not very friend's name careful. He was walking on top of the monkey bars in his new shoes and he slipped and fell. Tell the teacher what happened. --- *While walking on top of the monkey bars, _____ friend's name slipped and fell. Tell the teacher what happened.*	_____ was walking friend's name on the monkey bars and he slipped and fell.	Rp-f	3.6			
34.	Boy Puppet	Now you decide to take a turn on the swing. The new boy has been swinging for a long time. You would like to swing now. What would you say to the new boy? --- *Ask the new boy if you can take a turn on the swing.*	May I swing now?	SM-f	1.6			
35.	Boy Puppet	The new boy says "no". You ask him again but he still won't give you a turn. You have tried to ask him nicely. Now, what would you say to him? --- *The new boy doesn't want to let you take a turn on the swing. You have asked him nicely to let you swing several times--now what would you say to him?*	You better let me swing or I'll tell the teacher.	SM-e	1.5			
36.		Do you think it's right for the new boy to refuse to let	No, it's not right cause we should take turns.					

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
36. (cont.)		you have a turn on the swing? Why? --- *Repeat*		LR-f	4.6			
*37.	Story-The Dog and His Reflection	Play time is over. You and _____ go back into the classroom for storytime. Today your teacher will read the story of The Dog and His Reflection. Listen very carefully because when the teacher has finished the story, she will ask you to tell it in your own words. friend's name THE DOG AND HIS REFLECTION One day a dog stole a pork chop from his master's table. He rushed out of the house with it before anyone could stop him, and never stopped running until he reached the woods. As he carried the chop over a bridge, the dog looked down into the stream. There he saw his own reflection in the clear water. But he thought he was looking at another dog with another, biggerlooking pork chop. Being greedy, he wanted to have that, too. The dog let out a loud growl and opened his mouth	The dog stole a pork chop and ran away. Then he dropped it in the stream.					

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
37. (cont.)		to grab the other dog's chop. Alas! As soon as he opened his mouth, his own chop dropped into the water and sank out of sight. Instead of having two chops, the greedy dog had nothing at all. Now _____ you subject's name tell the story in your own words. --- *Now _____, you* *subject's name* *tell the story in your own words.*		Rp-d	3.4			
38.		"That was very good." What do you think this story was really about? --- *Repeat*	The story was about a dog who stole a pork chop. But he wasn't happy with just one pork chop and he tried to get another one and ended up losing them both.	Rp-g	3.7			
39.		What do you think we could learn from this story? --- *What does this story teach us?*	It's not nice to be greedy.	LR-e	4.5			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
*40.	Farm (Examiner assumes role of farmer's wife to encourage initiation of play. Examiner then allows children to play, unassisted, for approximately two minutes.) (pretend to feed lambs) (Move car up to house) (horse goes up to fence and chews on it) (move cowboy over to coral)	Now, it's almost time for lunch. Your teacher gives you and _____ some free time to play in the "Lets Pretend" corner. You decide to play with the farm set, first. "I'll be the farmer's wife and you be a hired hand and you be a hired hand." "These baby lambs sure are hungry." "I hear a car coming. I wonder who it is." --- *"Look! The horse is chewing on the fence."* *"Hey, Tex! Come help me with this new pony."*	I'm gonna go feed the horses. Here's some hay and water.	Im-a	7.1			
*41.	Star Patrol (Examiner assumes role of Star Commander to	Next you and _____ decide to play with the Star Patrol.	I'm gonna radio the base ship. There's a falling star in our path.					

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
*41. (cont.)	encourage initiation of play. Then examiner allows children to play, unassisted for two minutes.)	I'll be the Star Commander and you be a crew member and you be a crew member.						
	(move star ship through air)	The star ship is in space drive.						
	(move crew members to star ship)	Beam the crew members aboard.		Im-b	7.2			
	(move enemy ship towards star ship)	*Enemy ship approaching, secure battle stations.*						
	(move star patrol members)	*Activate your phasors.*						
42.		After lunch, time passes quickly and soon you're ready to go home. What kind of snack would you like when you get home from school?	I'd like some sugar cookies and some chocolate milk.					
		What kind of snack would you like?		Pd-b	5.2			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
43.		Suppose your mother is not at home when you get there and the door is locked. What would you do? --- *What would you do if you got home from school and found your mother gone and the door locked?*	If the door was locked, I'd go over to _____ (friend's name's) house and wait til mom got home.	Pd-d	5.4			
44.	Mother Puppet	Fortunately, your mom is waiting for you when you get home from school. She wants to hear all about your first day of school. What would you tell her? --- *Tell your mom some of the things you did at school today.*	We played duck, duck, goose and Mrs. Greene read us a story.	Rp-c	3.3			
*45.		Suppose you were the principal (director) of the school, for a day. What do you think it would be like? --- *What would you do if you were the principal (director) of school for a day?*	I'd let everybody go home at noon.	Pj-d	6.4			

APPENDIX D

FORM 3 OF ACES - THE PICNIC

INSTRUCTIONS

We're going to talk to some puppets and play with some toys today. While we're playing, I'll be asking both of you many questions. Some of the questions will be hard to answer and some of them will be easy, but I want you to answer all of them as completely and as well as you can.

Sometimes, I'll be talking to _____ a little
subject's name

bit more than _____ but I want _____
friend's name friend's name

to listen very carefully so he/she can be the helper. Are you ready? Let's meet my puppet friends, now.

INTRODUCTION - GOING ON A PICNIC

ITEM	ACTION	INSTRUCTION
1.	Hold up Mom Puppet	_____ and subject's name _____, I have friend's name some friends I'd like you to meet. This is Mom. Hi _____ and subject's name _____. friend's name --- _____, *say hello* *subject's name* *to Mom.* _____, *say* *friend's name* *hello to Mom.*
2.	Hold up Bobby Puppet	This is Bobby. Hi _____. Hi subject's name _____. friend's name --- _____, *say hello* *subject's name* *to Bobby.* _____, *friend's name* *say hello to Bobby.*
3.		Mom and Bobby would like to get to know you better. Will you talk to Mom and Bobby, _____? Will you subject's name _____? friend's name --- *Will you talk to Mom and Bobby,* _____? *subject's name* *Will you* _____? *friend's name*

ITEM	ACTION	INSTRUCTION
4.	Hold up Mom Puppet	Today's Saturday. We're going on a picnic. Do you like picnics _____? How about subject's name you _____? friend's name
	Hold up Bobby Puppet	---------- _____ *and* *subject's name* _____, *I want you to* *friend's name* *come with me on the picnic.* *Will you come* _____? *subject's name* *Will you* _____? *friend's name*
5.	Hold up Bobby Puppet	I'm bringing peanutbutter and jelly sandwiches on the picnic. _____ subject's name do you like strawberry or grape jelly? _____? friend's name ---------- *I like Strawberry jelly on my sandwiches. I'm bringing some juice, too. Do you like orange juice or grape juice* _____? _____? *subject's name* *friend's name*

ITEM	ACTION	INSTRUCTION
6.	Hold up Bobby Puppet	We're going to play games at the picnic, too. What kind of games do you like to play _____? (subject's name) How about you, _____ (friend's name)?
		I like to play hide 'n' go seek. What other games do you like to play _____ (subject's name)? _____ (name) _____ (Friend's name)?
7.	Hold up Bobby Puppet	Tell me how you play _____ (use game child mentioned) _____ (subject's name), _____ (Friend's name) how do you play _____ (use game child mentioned).
		When we play hide 'n' go seek one person closes his eyes and counts to ten . . . while everybody else finds a place to hide. Tell _____ (friend's name) how to play _____ (use game child mentioned).

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
1.	Hold up Mom Puppet	It's Wednesday afternoon and mom has been promising all week that she would take you on a picnic. Find out from mom when she will take you. --- *Ask mom when she will take you on a picnic.*	When are we going on our picnic?	Pd-g	5.7			
2.	Hold up Mom Puppet	Mom says, "I promise to take you on Saturday." You are very excited. You would like to ask your best friend to go along, too. What would you say to your mother? --- *Ask your mother if* _____ *can go on the picnic with you.* *friend's name*	Can _____ go with us on the picnic? friend's name	SM-f	1.6			
3.	Hold up Mom Puppet	Mom says, "You may take _____ on the picnic with you." friend's name _____ has never been on a picnic before. Tell _____ all about the things you might do on the picnic from the time you get there til the time you leave. friend's name friend's name --- *Tell* _____ *all about the things you might do on the picnic from the time you get there til the time you leave.* *friend's name*	We'll play in the park and then we'll eat. © Copyright, 1980 Rita Jane Lieberman	Pd-c	5.3			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
4.		_____ is very happy friend's name that you asked him/her to go along. He/She needs to tell his/her mother when he/she will be going on the picnic. What should she tell her mother? --- *Tell _____ when you* *friend's name* *will be going on the picnic.*	We're going on Saturday.	Pd-a	5.1			
*5.		_____ mom says that friend's name he/she may go on the picnic. But she warns him/her to be very careful. He/She has just gotten the cast off his/her arm. He/She broke it at school while playing on the jungle gym. Why must _____ be friend's name / you careful? --- *_____ mom warns* *friend's name* *_____ to be very* *friend's name* *careful on the picnic. He/She has just gotten the cast off his/her arm. He/She broke it at school while playing on the jungle gym. Why must _____* *friend's name* *be careful?*	She's gotta be careful so she won't break her arm again.	LR-e	4.5			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
6.		What do you think it was like for _____ when his/her friend's name arm was broken? --- *Repeat*	She couldn't tie her shoes.	Pj-a	6.1			
7.		Suppose you broke your arm and had to go to the hospital. What do you think would happen to you at the hospital? --- *Repeat*	The doctor would fix my arm.	Pj-d	6.4			
*8.	Hold up Mom Puppet	Before you make too many plans for Saturday, mom says, "You better listen to the local weather report." Why does mom want you to listen to the weather report? --- *Repeat*	If it rains, we can't go on our picnic.	LR-b	4.2			
9.	Hold up Weatherman Puppet Set out Weather Chart	Suppose the Weatherman says, "Today will be sunny and clear and warm. Saturday's temperatures will be lower with a 50% chance of rain." What would you do? Why? --- *What would you do if the weatherman says that it may rain on Saturday? Why?*	If it rains, we'll go to the movies.	Pd-d	5.4			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
10.		What else could you and _____ do? friend's name *REPEAT*	We could stay home and watch cartoons.	Pd-e	5.5			
*11.	Set out Paper plates, cups, napkins, plastic forks, knives, spoons, Potato chips Juice	It's Saturday morning. Mom says, "It's time for you and _____ to pack the friend's name picnic lunch. "She places all the things that you will take on the table. What will you pack for lunch? --- *Name the things you will pack in your picnic lunch.*	Plates and Cups	Rp-a	3.1			
12.	Set out Peanutbutter and jelly bread knife	Mom decides that you should make some peanutbutter and jelly sandwiches to take along. How do you make peanutbutter and jelly sandwiches? --- *Repeat*	You put the peanutbutter on a piece of bread and the jelly on another piece and then you put them together.	LR-a	4.1			
13.	Peanutbutter and jelly bread knife	Make your peanutbutter and jelly sandwich. --- *Repeat*	I'm putting the peanutbutter on this and the jelly on this.	Dr-a	2.1			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
14.	Hand Crumpled foil to child	Now wrap up your sandwich. (If child says "I can't do it," ask him to try) --- *REPEAT*	I'm pulling it.... pulling it. It tore.	Dr-b	2.2			
*15.	Show Two paper bags- one with a hole	Mom gives you two bags to put all the picnic goodies in. What would you say to Mom? --- *Repeat*	This bag's got a hole in it. Let's use the other one.	LR-c	4.3			
16.	Pour water in jar, stir, touching sides of jar, drop spoon on floor, say "oh no"	Now I want you to close your eyes and listen. While you are packing the bags, you hear mom making some noises in the kitchen. What do you think is happening? --- *REPEAT*	Mom was making some juice. She dropped her spoon on the floor and got upset.	Rp-g	3.7			
* 17.	Hang up The Park Poster	Everything is finally packed and ready. You all hop into the car and in no time you're at the park. _____ friend's name has never been to the park before. What are the children doing here? --- _____ *has never been friend's name to the park before. Tell him/her what you can do here.*	She's jumping rope and he's riding a bike.	Rp-c	3.3			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
18.		First, you decide to play ball. While you are playing, the ball hits _____ on the head. Find out if _____ is alright. friend's name friend's name --- *Ask _____ how he/she feels.* *friend's name*	Are you hurt _____? friend's name	Pj-e	6.5			
19.	Hold up Mom Puppet	_____ is fine. The ball didn't hurt him/her. You begin to play again but now you would like mom to watch. What would you say to her? friend's name --- *You begin to play ball again but now you want mom to watch. Ask mom to watch you.*	Will you watch me, Mom?	SM-f	1.6			
*20.		Some little children start to watch you, too. They keep pestering you to let them play. What would you say to them? --- *Some little children beg you to let them play ball too. You don't want them to play. What would you say to them?*	You can't play. You're too little.	SM-c	1.3			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
21.	Set out Wooden Airplane	Soon you decide to do something else. Mom has bought you a brand new wooden airplane. _____ wants friend's name to put it together so you can fly it. Tell _____ how to make friend's name the airplane. --- *Tell _____ how to friend's name make the airplane.*	Put the wings in here and the tail right here.	Dr-c	2.3			
22.	Hold up Mom Puppet Complete construction of Wooden airplane	The plane is ready to fly. You begin to wonder how airplanes fly. Find out from mom. --- *Ask mom how airplanes fly.*	How do airplanes fly, Mom?	Lr-g	4.7			
*23.	Wooden Airplane	You and _____ are friend's name having fun flying your airplane. While you are playing an older boy tries to grab your airplane away from you. What would you say to him? --- *What should you say to the older boy when he tries to grab your airplane away from you?*	Don't take it' it's mine.	SM-b	1.2			

24.	Sec out tree.	It's a good day for flying a plane. But all of a sudden the wind stops and your plane crashes into a very large tree. Tell mom what happened. _____ *As you are flying your plane, the wind stops and your plane crashes into a large tree. It's stuck and you can't get it down. Tell mom what happened.*	My plane't stuck in the tree and I can't get it down	Rp-f	3.6			
*25.	Hold up Mom Puppet	Tell mom how you feel about what happened to the new plane. _____ *How do you feel about what happened to your new plane?*	I'm sad.	Rp-h	3.8			
26.		The plane is stuck in the tree and even mom can't get it down. So you decide to climb the tree and you want _____ to climb it too. friend's name Remember _____ has friend's name just gotten the cast off his/her arm. What do you think _____ will say? friend's name --- *Remember, _____ has* *friend's name* *just gotten the cast off his/her arm. What do you think _____ will say* *friend's name* *when you suggest that you climb the tree.*	I don't want to climb the tree.	Pj-c	6.3			

ITEM	ACTION	INSTRUCTION	COMMUNICATION	TARGET		RESPONSE		SCORE
27.		Why do you think _____ (friend's name) does/does not want to climb the tree? --- *Repeat*	If she climbs the tree, she might fall and break her arm again.	Lr-d	4.4			
28.	Hold up Mom Puppet	It's time to eat. Mom says, "Please set the table." Find out how mom would like the table set. --- *Ask mom how she wants the table set.*	How should we set the table, mom?	Dr-e	2.5			
29.		_____ (friend's name) wasn't listening. Tell _____ (friend's name) how you will set the table. --- *Tell _____ (friend's name) how you will set the table.*	Put down a plate for each of us. Put the cups above the plates and the Silverware on each side of the plates.	Pd-b	5.2			
*30.	Set out paper plates, cups, napkins and plastic utensils	_____ (friend's name) would like to help you. Talk it over. Decide what each of you will do and do it. --- *Repeat*	You put the plates and the cups out and I'll do the napkins and the silverware.	Dr-d	2.4			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
31.	Show cups	Mom has brought along several of your favorite cups. Describe to _____ (friend's name) the one you usually use. --- *Describe to _____ (friend's name) which cup you usually use.*	I use the one with the little bug eating the strawberry ice cream.	Rp-b	3.2			
32.	Cups	Find out which cup _____ (friend's name) wants to use. --- *Ask _____ (friend's name) which cup he/she would like to use.*	Which cup do you want to use?	Rp-i	3.9			
*33.	Cups	Make up your own story about the cups. --- *Tell me a story about the cups.*	One day I found a shiny silver cup in a drawer. I showed it to my mom. Mom said it was my baby cup. So I polished it up and put it on my shelf.	Im-c	7.3			
*34.-35.		You don't like the way _____ (friend's name) is setting the table. You don't think he/she is following mom's instructions. Pretend you are having an argument about setting the table. What would you say to each other? --- *Repeat*	You're not setting the table right. I'm gonna tell my mom.	SM-d SM-e	1.4 1.5			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
36.	Pretend to spill juice	As _____ (friend's name) is putting the juice on the table, he/she trips and spills it all over the ground. How do you think _____ (friend's name) feels? --- *How do you think _____ (friend's name) feels about spilling the juice.*	He/She feels bad.	Pj-b	6.2			
37.		What will mom do about the spilled juice? --- *Repeat*	She'll have to clean it up.	Pd-f	5.6			
38.		The juice is gone. What else could you drink instead of the juice? Anything else? --- *_____ (friend's name) spilled the juice. What else could you drink with lunch? Anything else?*	We could have some lemonade or some iced tea.	Pd-e	5.5			
*39.	Hold up Mom Puppet	Lunch is finally ready. Mom says, "Come and get it." Your hands are dirty. What would you say to mom? --- *Repeat*	I need to wash my hands.	SM-a	1.1			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
40.	Hold up Mom Puppet	You've finished your lunch and mom says, "It's time to go now." You would like to stay and play for a little while longer. What would you say to mom? --- *What would you say to mom to get her to let you stay at the park for a few more minutes?*	Please let us stay a bit longer. I'll pick up all the garbage.	SM-c	1.3			
*41.	Western Rodeo (Examiner assumes the role of one of the spectators to encourage initiation of play. Then examiner allows children to play, unassisted for two minutes.) (move lady toward ticket booth) (move lady through gate) (move lady toward grandstand) (move bronco to center of ring)	Mom decides to let you stay and play for a few more minutes. While she cleans up. You and _____ friend's name head straight for the sandbox. You decide to play with the western rodeo, first. I'll be Mrs. Trivette. You, be a cowboy/cowgirl and you, be a cowboy/cowgirl. I better hurry up and buy my ticket. The show's about to begin. Look! The judges are already seated. --- *There sure is a large crowd today.* *That bronco looks mean.*	I'm gonna ride the bucking bronco now. You better watch out. He sure looks mean.	Im-a	7.1			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
*42.	Dinosaurs and Cavemen (Examiner assumes role of one of the cavemen to encourage initiation of play. Then examiner allows children to play, unassisted for two minutes.) (move Brontosaurus toward tree.) (move Tyranosaurus toward caveman) (Move caveman toward tree) (Caveman pretends to eat.)	Next you decide to play with the dinosaurs and cavemen. I'll be a caveman. You be a dinosaur and you be a dinosaur. Look! That Brontosaurus eat tree for lunch. Hm, Better run. Here come mean Tyranosaurus, --- *Me hungry. Need food.* *Mmm. This banana good.*	Me hungry. Aargh. Me look for food. Aargh. Me gonna eat that caveman.	Im-b	7.2			
43.	Show sliding board	Finally, mom puts the last picnic fork away. Just enough time for a quick turn on the sliding board. It's been a very hot day and as _____ climbs to the friend's name top, he decides not to go down. Why? ---	The sun has been shining on the slide all day, and it's very hot.	LR-f	4.6			

ITEM	ACTION	INSTRUCTION	COMMUNICATION ACT	TARGET		RESPONSE		SCORE
43. (cont.)		*Before leaving, you decide to take a quick turn on the slide. It's been a very hot day and as _____ climbs to the top he decides not to go down. Why?*						
44.		What a day! You've had so much fun. Have you ever been on a picnic before? How was your picnic like the one we went on today? --- *Have you ever been on a picnic before? How was your picnic like the one we went on today?*	On my picnic we didn't eat peanutbutter and jelly sandwiches. We ate hotdogs.	Rp-e	3.5			
*45.	Hold up Dad Puppet	When you arrive home, Dad wants to hear all about your day. Tell him about the picnic from the time you got there til the time you left. --- *Tell Dad all about your picnic from the time you got there till the time you left.*	First, we played ball and then we flew an airplane.	Rp-d	3.6			

APPENDIX E

SCORING FORM AND SCORE GUIDES

SCORING GUIDE

THE BIRTHDAY PARTY

ITEM	TARGET	CODE	FUNCTION	STRATEGY
1.	SM-f	1.6	Self-Maintaining	Questioning
2.	SM-c	1.3	Self-Maintaining	Justifying behavior and claims
3.	Pd-g	5.7	Predicting	Questioning
4.	Pj-e	6.5	Projecting	Questioning
5.	Rp-a	3.1	Reporting	Labelling
6.	Pd-a	5.1	Predicting	Anticipating/forecasting
7.	Pd-e	5.5	Predicting	Anticipating and recognizing
8.	Pd-f	5.6	Predicting	Predicting the consequences of actions or events
9.	Pj-a	6.1	Projecting	Projecting into the experiences of others
10.	Pj-d	6.4	Projecting	Projecting into situations never experienced
11.	Rp-f	3.6	Reporting	Recognizing related aspects
12.	Rp-b	3.2	Reporting	Referring to detail
13.	Im-c	7.3	Imagining	Developing an original story
14.	Rp-e	3.5	Reporting	Making comparisons
15.	LR-g	4.7	Logical Reasoning	Questioning
16.	Dr-d	2.4	Directing	Collaborating in action with others
17.	LR-d	4.4	Logical Reasoning	Justifying judgements and action
18.	LR-c	4.3	Logical Reasoning	Recognizing problems and solutions
19.	Pd-c	5.3	Predicting	Anticipating a sequence of event
20.	LR-c	4.3	Logical Reasoning	Recognizing problems and solutions
21.	DR-a	2.1	Directing	Monitoring own actions
22.	SM-b	1.2	Self-Maintaining	Protecting the self and self-interest
23.	Dr-c	2.3	Directing	Directing actions of others
24.	Dr-e	2.5	Directing	Questioning
25.	LR-a	4.1	Logical Reasoning	Explaining a process

ITEM	TARGET	CODE	FUNCTION	STRATEGY
26.	SM-d	1.4	Self-Maintaining	Criticizing others
27.	SM-e	1.5	Self-Maintaining	Threatening others
28.	Rp-f	3.6	Reporting	Recognizing related aspects
29.	Rp-g	3.7	Reporting	Extracting or recognizing the central meaning
30.	Rp-c	3.3	Reporting	Referring to incidents
31.	Pj-b	6.2	Projecting	Projecting into the fellings of others
32.	SM-f	1.6	Self-Maintaining	Questioning
33.	Im-a	7.1	Imagining	Developing an imaginary situation based on real life
34.	Im-b	7.2	Imagining	Developing an imaginary situation based on fantasy
35.	SM-a	1.1	Slef-Maintaining	Referring to needs
36.	Pd-d	5.4	Predicting	Anticipating problems and possible solutions
37.	Pj-c	6.3	Projecting	Projecting into the reactions of others
38.	LR-b	4.2	Logical Reasoning	Recognizing casual and dependent relationships
39.	Dr-b	2.2	Directing	Directing the actions of the self
40.	LR-e	4.5	Logical Reasoning	Reflecting on events and drawing conclusions
41.	LR-f	4.6	Logical Reasoning	Recognizing principles
42.	Rp-d	3.4	Reporting	Referring to the sequences of events
43.	Rp-h	3.8	Reporting	Reflecting on the meaning of experiences
44.	Pd-a	5.1	Predicting	Anticipating/forecasting
45.	Pd-b	5.2	Predicting	Anticipating the detail of events

SCORING GUIDE

FIRST DAY OF SCHOOL

ITEM	TARGET	CODE	FUNCTION	STRATEGY
1.	Pd-f	5.6	Predicting	Predicting the consequences of actions or events
2.	Pd-c	5.3	Predicting	Anticipating a sequence of events
3.	Dr-e	2.5	Directing	Questioning
4.	LR-c	4.3	Logical reasoning	Recognizing problems and solutions
5.	SM-a	1.1	Self-Maintaining	Referring to needs
6.	RP-a	3.1	Reporting	Labelling
7.	LR-b	4.2	Logical Reasoning	Recognizing casual and dependent relationships
8.	Pd-e	5.5	Predicting	Anticipating and recognizing alternative courses of action
9.	SM-b	1.2	Self-Maintaining	Protecting the self and self-interest
10.	DR-b	2.2	Directing	Directing the actions of the self
11.	Rp-e	3.5	Reporting	Making comparisons
12.	LR-b	4.2	Logical Reasoning	Recognizing casual and dependent relationships
13.	Rp-h	3.8	Reporting	Reflecting on the meaning of experiences
14.	PJ-b	6.2	Projecting	Projecting into the feelings of others
15.	PJ-a	6.1	Projecting	Projecting into the experiences of others
16.	Rp-i	3.9	Reporting	Questioning
17.	Sm-f	1.6	Self-Maintaining	Questioning
18.	Rp-b	3.2	Reporting	Referring to detail
19.	Im-c	7.3	Imagining	Developing an original story
20.	DR-a	2.1	Directing	Monitoring own actions.

ITEM	TARGET	CODE	FUNCTION	STRATEGY
21.	DR-c	2.3	Directing	Directing actions of others
22.	SM-c/d	1.3	Self Maintaining	Justifying behavior and claims
23.		1.4		Critizing others
24.	DR-d	2.4	Directing	Collaborating in action with others
25.	Pd-a	5.1	Predicting	Anticipating/Forecasting
26.	Pd-g	5.7	Predicting	Questioning
27.	PJ-c	6.3	Projecting	Projecting into the reactions of others
28.	PJ-e	6.5	Projecting	Questioning
29.	LR-d	4.4	Logical Reasoning	Justifying judgements and actions
30.	LR-g	4.7	Logical Reasoning	Questioning
31.	LR-a	4.1	Logical Reasoning	Explaining a process
32.	Pd-f	5.6	Predicting	Predicting the consequences of actions or events
33.	Rp-f	3.6	Reporting	Recognizing related aspects
34.	SM-f	1.6	Self-Maintaining	Questioning
35.	SM-e	1.5	Self-Maintaining	Threatening others
36.	LR-f	4.6	Logical Reasoning	Recognizing principles
37.	Rp-d	3.4	Reporting	Referring to the sequence of events
38.	Rp-g	3.7	Reporting	Extracting or recognizing the central meaning
39.	LR-e	4.5	Logical Reasoning	Reflecting on events and drawing conclusions
40.	Im-a	7.1	Imagining	Developing an imaginary situation based on real life
41.	IM-c	7.3	Imagining	Developing an imaginary situation based on fantasy
42.	Pd-b	5.2	Predicting	Anticipating the detail of events
43.	Pd-d	5.4	Predicting	Anticipating problems and possible solutions
44.	Rp-c	3.3	Reporting	Referring to incidents
45.	Pj-d	6.4	Projecting	Projecting into situations never experienced

SCORING GUIDE

GOING ON A PICNIC

ITEM	TARGET	CODE	FUNCTION	STRATEGY
1.	Pd-g	5.7	Predicting	Questioning
2.	SM-f	1.6	Self-Maintaining	Questioning
3.	Pd-c	5.3	Predicting	Anticipating a sequence of events
4.	Pd-a	5.1	Predicting	Anticipating/forecasting
5.	LR-e	4.5	Logical Reasoning	Reflecting on events and drawing conclusions
6.	Pj-a	6.1	Projecting	Projecting into the experiences of others
7.	Pj-d	6.4	Projecting	Projecting into situations never experienced
8.	LR-b	4.2	Logical Reasoning	Recognizing casual and dependent relationships
9.	Pd-d	5.4	Predicting	Anticipating problems and possible solutions
10.	Pd-e	5.5	Predicting	Anticipating and recognizing alternative courses of action
11.	Rp-a	3.1	Reporting	Labelling
12.	LR-a	4.1	Logical Reasoning	Explaining a process
13.	Dr-a	2.1	Directing	Monitoring own actions
14.	Dr-b	2.2	Directing	Directing the actions of the self
15.	LR-c	4.3	Logical Reasoning	Recognizing problems and solutions
16.	Rp-g	3.7	Reporting	Extracting or recognizing the central meaning
17.	Rp-c	3.3	Reporting	Referring to incidents
18.	Pj-e	6.5	Projecting	Questioning
19.	SM-f	1.6	Self-Maintaining	Questioning
20.	SM-c	1.3	Self-Maintaining	Justifying behavior and claims
21.	Dr-c	2.3	Directing	Directing actions of others
22.	Lr-g	4.7	Logical Reasoning	Questioning

23.	SM-b	1.2	Self-Maintaining	Protecting the self and self interest
24.	Rp-f	3.6	Reporting	Recognizing related aspects
25.	Rp-h	3.8	Reporting	Reflecting on the meaning of experiences
26.	Pj-c	6.3	Projecting	Projecting into the reactions of others
27.	Lr-d	4.4	Logical Reasoning	Justifying judgements and actions
28.	Dr-e	2.5	Directing	Questioning
29.	Pd-b	5.2	Predicting	Anticipating the detail of events
30.	Dr-d	2.4	Directing	Collaborating in action with others
31.	Rp-b	3.2	Reporting	Referring to detail
32.	Rp-1	3.9	Reporting	Questioning
33.	Im-c	7.3	Imagining	Developing an original story
34.	SM-d	1.4	Self-Maintaining	Criticizing others
35.	SM-e	1.5	Self-Maintaining	Threatening others
36.	Pj-b	6.2	Projecting	Projecting into the feelings of others
37.	Pd-f	5.6	Predicting	Predicting the consequences of actions or events
38.	Pd-e	5.5	Precicting	Anticipating and recognizing alternative courses of action
39.	SM-a	1.1	Self-Maintaining	Referring to needs
40.	SM-c	1.3	Self-Maintaining	Justifying behavior and claims
41.	Im-a	7.1	Imagining	Developing an imaginary situation based on real life
42.	Im-b	7.2	Imagining	Developing an imaginary situation based on fantancy
43.	LR-f	4.6	Logical Reasoning	Recognizing principles
44.	Rp-e	3.5	Reporting	Making comparisons
45.	Rp-d	3.6	Reporting	Recognizing related aspects

AGE months		Race	Sex	Loc.	Stim.	Dis.	No.

1. I.D.

Month	Day	Year	Name

2. Birthdate

3. Aces Form		1						1						2						2						3						3			
4. Order																																	
5. Date																																	
6. Examiner																																	
7. Time (Min.)																																	
8. Scorer																																	
Scores	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X				
9. Item 1	SM f					SM f					PD f					PD f					PD f					PD f								
10. 2	SM c					SM c					PD c					PD c					SM f					SM f								
11. 3	PD f					PD f					DR e					DR e					PD c					PD c								
12. 4.	Pj e					Pj e					LR c					LR c					PD a					PD a								
13. 5.	Rp a					Rp a					SM a					SM a					LR e					LR e								
14. 6	PD a					PD a					RP a					RP a					PJ a					PJ a								
15. 7	PD e					PD e					LR b					LR b					PJ d					PJ d								
16. 8	PD f					PD f					PD e					PD e					LR b					LR b								

AGE months	Race	Sex	Loc.	Stim.	Dis.	No.	Month	Day	Year	Name

		T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	
17.	9	Pj a					Pj a					SM b					SM b					PD d					PD d					
18..	10	Pj d					Pj d					DR b					DR b					PD e					PD e					
19.	11	Rp i					Rp i					Rp e					Rp e					Rp a					Rp a					
20.	12	Rp b					Rp b					LR b					LR b					LR a					LR a					
21.	13	Im o					Im o					Rp h					Rp h					DR a					DR a					
22.	14	Rp c					Rp c					Pj b					Pj b					DR b					DR b					
23.	15	LR f					LR f					Pj a					Pj a					LR c					LR c					
24.	16	DR d					DR d					RP i					RP i					RP g					RP f					
25.	17	LR d					LR d					SM f					SM f					RP c					RP c					
26.	18	LR c					LR c					RP b					RP b					Pj o					Pj o					
27.	19	PD c					PD c					IM c					IM c					SM f					SM f					
28.	20	LR o					LR o					DR a					DR a					SM c					SM o					
29.	21	DR a					DR a					DR c					DR c					DR c					DR c					
30.	22	SM b					SM b					SM o					SM c					LR f					LR f					

AGE month		Race	Sex	Loc.	Stim.	Dis.	No.				Month		Day	Year		Name

Aces Form		1					1					2					2					3					3				
Scores		T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X
31. Item	23	DR c					DR c					SM d					SM d					SM b					SM b				
32.	24	DR e					DR e					DR d					DR d					RP f					RP f				
33.	25	LR a					LR a					PD a					PD a					RP h					RP h				
34.	26	SM d					SM d					PD g					PD g					PJ c					PJ c				
35.	27	SM e					SM e					PJ c					PJ c					LR d					LR d				
36.	28	RP f					RP f					PJ e					PJ e					DR e					DR e				
37.	29	RP g					RP g					LR d					LR d					PD b					PD b				
38.	30	RP c					RP c					LR g					LR g					DR d					DR d				
39.	31	PJ b					PJ b					LR a					LR a					RP b					RP b				
40.	32	SM f					SM f					PD f					PD f					RP i					RP i				
41.	33	IM a					IM a					RP f					RP f					IM c					IM c				
42.	34	IM b					IM b					SM f					SM f					SM d					SM d				
43.	35	SM a					SM a					SM e					SM e					SM e					SM e				
44.	36	PD d					PD d					LR f					LR f					PJ b					PJ b				
45.	37	PJ c					PJ c					RP d					RP d					PD f					PD f				

AGE month		Race	Sex	Loc.	Stim.	Dis.	No.		Month	Day	Year	Name

Aces Form	1					1					2					2					3					3				
Scores	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X
46. Item 38	LR b					LR b					RP f					RP f					PD e					PD e				
47. 39	DR b					DR b					LR e					LR e					SM a					SM a				
48. 40	LR e					LR e					IM a					IM a					SM c					SM c				
49. 41	LR f					LR f					IM b					IM b					IM a					IM a				
50. 42	RP d					RP d					PD b					PD b					IM b					IM b				
51. 43	RP h					RP h					PD d					PD d					LR f					LR f				
52. 44	PD a					PD a					RP c					RP c					RP e					RP e				
53. 45	PD b					PD b					PJ d					PJ d					RP d					RP d				
54. Self Maintaining																														
55. Directing																														
56. Social Use																														
57. Reporting																														
58. Reasoning																														
59. Predicting																														
60. Projecting																														

AGE month		Race	Sex	Loc.	Stim.	Dis.	No.		Month	Day	Year	Name

Aces Form	1					1					2					2					3					3				
Scores	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X	T	0	1	2	X
Item																													
61. Imagining																													
62. Represen-tational																													
63. TOTAL																													

APPENDIX F

MEANS AND STANDARD DEVIATIONS

MEANS AND STANDARD DEVIATIONS

4-Year Olds

Form 1 x 1	Means	Standard Deviations	Cases
SM	4.17	2.56	6
DR	4.67	2.16	6
RP	5.33	2.73	6
LR	3.00	1.79	6
PD	5.33	3.20	6
PJ	3.33	2.50	6
IM	3.17	1.72	6
SU	8.83	3.92	6
RU	20.17	6.94	6
TS	29.00	10.60	6
Form 1 x 2			
SM	4.83	1.83	6
DR	5.50	1.22	6
RP	6.17	2.79	6
LR	5.50	2.81	6
PD	5.83	2.48	6
PJ	3.17	1.60	6
IM	3.33	1.21	6
SU	10.33	2.58	6
RU	24.00	6.36	6
TS	34.33	7.84	6

Form 1 x 3	Means	Standard Deviations	Cases
SM	4.33	1.63	6
DR	5.00	1.90	6
RP	7.00	3.90	6
LR	3.67	4.03	6
PD	7.00	3.29	6
PJ	5.83	1.72	6
IM	4.33	1.50	6
SU	9.33	2.58	6
RU	27.83	10.52	6
TS	37.17	12.10	6
Form 2 x 1			
SM	2.29	1.60	7
DR	1.86	2.34	7
RP	7.43	4.12	7
LR	3.29	3.04	7
PD	6.57	4.83	7
PJ	3.86	3.39	7
IM	4.00	1.15	7
SU	4.14	3.48	7
RU	25.14	14.14	7
TS	29.29	17.21	7
Form 2 x 2			
SM	3.57	1.62	7
DR	3.14	2.79	7
RP	8.14	4.60	7
LR	4.14	2.79	7

Form 2 x 2	Means	Standard Deviations	Cases
PD	8.29	3.55	7
PJ	3.86	3.18	7
IM	4.00	1.15	7
SU	6.71	2.69	7
RU	28.43	12.62	7
TS	35.14	14.76	7
Form 2 x 3			
SM	4.57	2.44	7
DR	3.00	1.41	7
RP	6.57	3.15	7
LR	4.00	2.52	7
PD	7.71	2.98	7
PJ	4.43	2.64	7
IM	3.29	1.60	7
SU	7.57	3.55	7
RU	26.00	9.88	7
TS	33.57	12.04	7
Form 3 x 1			
SM	3.00	2.61	6
DR	3.33	2.42	6
RP	7.50	3.02	6
LR	4.33	3.20	6
PD	6.50	2.88	6
PJ	4.33	3.20	6
IM	3.33	1.63	6
SU	6.33	3.98	6

Form 3 x 1	Means	Standard Deviations	Cases
RU	26.00	8.85	6
TS	32.33	11.81	6
Form 3 x 2			
SM	5.00	3.90	6
DR	4.83	2.14	6
RP	8.67	1.75	6
LR	6.67	2.58	6
PD	7.67	3.20	6
PJ	5.33	1.50	6
IM	3.67	.82	6
SU	9.83	5.67	6
RU	32.00	7.77	6
TS	41.83	13.01	6
Form 3 x 3			
SM	4.14	3.29	7
DR	3.00	1.91	7
RP	7.43	2.99	7
LR	5.71	1.70	7
PD	6.57	4.83	7
PJ	5.71	3.35	7
IM	4.29	.76	7
SU	7.14	4.38	7
RU	29.71	8.83	7
TS	36.86	12.38	7

MEANS AND STANDARD DEVIATIONS

6-Year Olds

Form 1 x 1	Means	Standard Deviations	Cases
SM	6.28	2.02	18
DR	4.39	2.23	18
RP	9.78	2.88	18
LR	6.06	2.71	18
PD	9.83	2.46	18
PJ	6.11	1.53	18
IM	3.83	.51	18
SU	10.67	3.29	18
RU	35.61	5.95	18
TS	46.28	7.23	18
Form 1 x 2			
SM	7.50	1.62	18
DR	4.39	2.23	18
RP	11.11	3.01	18
LR	8.00	2.59	18
PD	10.22	2.13	18
PJ	7.00	1.78	18
IM	3.72	.96	18
SU	11.72	2.67	18
RU	40.06	7.52	18
TS	51.78	8.66	18

MEANS AND STANDARD DEVIATIONS

8-Year Olds

Form 1 x 1	Means	Standard Deviations	Cases
SM	7.29	1.11	7
DR	4.57	1.99	7
RP	15.57	2.15	7
LR	8.00	1.53	7
PD	10.86	2.12	7
PJ	6.86	1.95	7
IM	4.14	.38	7
SU	11.86	2.12	7
RU	45.43	2.88	7
TS	57.29	3.64	7
Form 1 x 2			
SM	7.57	2.23	7
DR	5.00	1.29	7
RP	12.71	1.25	7
LR	9.29	1.60	7
PD	9.57	2.37	7
PJ	7.86	.90	7
IM	4.43	.97	7
SU	12.57	1.62	7
RU	43.86	3.18	7
TS	56.43	3.70	7

Form 1 x 3	Means	Standard Deviations	Cases
SM	8.29	3.15	7
DR	5.71	1.11	7
RP	13.14	1.86	7
LR	8.71	2.14	7
PD	12.57	.79	7
PJ	7.71	1.80	7
IM	4.29	.76	7
SU	14.00	3.46	7
RU	46.43	3.70	7
TS	60.43	2.22	7
Form 2 x 1			
SM	8.00	2.82	6
DR	4.83	2.14	6
RP	14.00	2.00	6
LR	11.33	2.16	6
PD	12.50	1.76	6
PJ	9.00	.89	6
IM	5.00	1.10	6
SU	12.83	3.43	6
RU	51.83	5.19	6
TS	64.67	8.21	6
Form 2 x 2			
SM	7.33	1.97	6
DR	5.50	2.59	6
RP	11.33	1.51	6
LR	11.17	2.32	6

Form 2 x 2	Means	Standard Deviations	Cases
PD	13.00	1.10	6
PJ	9.17	.98	6
IM	5.50	.84	6
SU	12.83	4.12	6
RU	50.17	2.99	6
TS	63.00	5.29	6
Form 2 x 3			
SM	7.86	2.54	7
DR	4.00	.81	7
RP	15.71	1.89	7
LR	8.86	1.68	7
PD	12.86	1.46	7
PJ	8.00	1.15	7
IM	5.14	1.07	7
SU	11.86	1.95	7
RU	50.57	3.69	7
TS	62.43	2.23	7
Form 3 x 1			
SM	8.57	2.30	7
DR	5.00	2.31	7
RP	14.29	1.38	7
LR	9.29	2.29	7
PD	10.86	1.68	7
PJ	8.86	1.21	7
IM	4.71	0.95	7
SU	13.57	3.10	7

Form 3 x 1	Means	Standard Deviations	Cases
RU	48.00	5.18	7
TS	61.57	7.32	7
Form 3 x 2			
SM	11.00	1.82	7
DR	6.57	1.81	7
RP	14.57	2.22	7
LR	10.57	1.99	7
PD	11.71	.49	7
PJ	8.43	1.51	7
IM	4.86	1.07	7
SU	13.57	3.10	7
RU	50.14	4.38	7
TS	67.71	5.85	7
Form 3 x 3			
SM	8.33	2.73	6
DR	6.83	2.14	6
RP	16.17	2.23	6
LR	11.00	2.00	6
PD	12.17	1.17	6
PJ	9.00	1.26	6
IM	5.33	1.03	6
SU	15.17	3.06	6
RU	53.67	4.46	6
TS	68.83	6.85	6

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