COMMUNICATIVENESS IN NORMAL AND COMMUNICATION DISORDERED PRESCHOOL CHILDREN

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Communicativeness in Normal and
Communication Disordered
Preschool Children

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ABSTRACT

The purpose of this study was to compare communicativeness in normal and communication disordered preschool children.

Sixty preschool age children were administered the Test of Communicativeness. Thirty of the children were identified by their teacher(s) as exhibiting communication disorders. Thirty others were randomly selected from the population at three day-care facilities.

The hypothesis of no difference between normal and communication disordered children's communicativeness was rejected. The communication disordered children showed an over-all lesser desire to communicate.

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Chapter 1

INTRODUCTION

Communication is a circular, complex process, unique to each individual, involving the total personality (Barlund in Giffin and Patton, 1971:46). It is essentially a social affair, providing a medium which enables human beings to relate to others. Communication, an inclusive term, includes speech and verbal language systems and non-verbal systems such as gesture, facial expression, body posture, and movement (Cherry, 1978:4; Satir in Giffin and Patton, 1971:21). Whatever its form, communication pervades virtually every phase of human life and renders true social life and existence practicable. There is no more significant medium through which thoughts, attitudes, ideas, and emotions can be relayed (Bryngelson, 1964:23).

The traditional focus of the speech clinician has been on examining the form of the speech and language systems emphasizing speech sound production and receptive and expressive language skills. This is evidenced by the concentration on language, articulation, voice, and stuttering. In terms of language, emphasis has been placed on phonology, syntax, semantics, and the relationship between speech and thought. Recently, interest in pragmatics has increased our "insight into how a child employs speech as goal-directed action (Phillips, Butt, and Metzger, 1974:60)." Prior to a recent study by Donahue (1979), little research had been done in the area of communicativeness, or desire to communicate. This construct may prove to be a possible area of concern for the speech clinician.

The limited research in the area of communicativeness has focused on studying the individual who apparently lacks the desire to communicate. Various terminology has been used to label this individual described by Phillips (1968:40) as "a person for whom anxiety about participation in oral communication outweighs his projection of gain from the situation." This type of person has been referred to as reticent (Phillips, 1968), communicatively apprehensive, shy (McCroskey and Richmond, 1978), marginally communicative (Blue, 1975), resigned in speaking (Barbara, 1960), anomic or alienated, introverted, low in self-esteem, and/or unwilling to communicate (Burgoon, 1976). Whatever the label assigned, the symptomatology is essentially the same.

The majority of research related to reticent speech has been confined to the examination of "speech fright" or "stage fright" in junior high-school and college students (Muir, 1964; Phillips and Butt, 1966; Burgoon, 1976). There is little information pertaining to the young child who may be unwilling communicator. Donahue (1979), aware of the need for early identification of lack of communicativeness, developed the Test of Communicativeness (TOC), a screening instrument purporting to indicate differences among pre-school children's desire to communicate.

Previous research on reticence has focused primarily on the problem communicator whose lack of desire to communicate exists independently of such problems as lack of subject-predicate agreement in sentence composition, distortions in articulation, and/or hypertonia associated with stuttering (Phillips, 1968:39). Past studies dealt with more of a true unwillingness rather than any degree of unwillingness associated with communication problems. Findings from studies such as

Freeman and Sonnega's (1956) which support the assumption that a communication impairment tends to reduce the peer acceptance of a child, suggest that a child who is aware that others are reacting negatively to his speech and language patterns may be likely to develop and exhibit a reticent posture (Phillips, Butt, and Metzger, 1974:179).

Statement of the Problem

At this time, the communication disordered child is viewed primarily in terms of receptive and expressive language skills, sound production ability, vocal quality, and fluency patterns. No concern is given to this child's communicativeness, or desire to communicate.

Purpose of the Study

The purpose of this study was to compare communicativeness in normal and communication disordered preschool children.

Major Null Hypothesis

There is no significant difference between the performance of preschool children identified as having communication disorders and those having normal speech and language patterns on the Test of Communicativeness.

Null Subhypotheses

1. There is no significant difference between the performance of three year old children identified as having communication disorders and those having normal speech and language patterns on the Test of Communicativeness.

2. There is no significant difference between the performance of four year old children identified as having communication disorders and those having normal speech and language patterns on the Test of Communicativeness.

3. There is no significant difference between the performance of five year old children identified as having communication disorders and those having normal speech and language patterns on the Test of Communicativeness.

4. There is no significant difference in the performance of three, four, and five year old children identified as communication disordered on the Test of Communicativeness.

5. There is no significant difference in the performance of three, four, and five year old children having normal speech and language patterns on the Test of Communicativeness.

The .05 level of confidence was accepted for testing the hypotheses.

Delimitations of the Study

For the purpose of this study, criteria for selection of the children included (1) identification by teacher(s) as demonstrating a language, articulation, voice, and/or fluency problem, (2) disorders apparently unrelated to emotional and/or mental disturbances, e.g., autism or mental retardation, and (3) no evidence of a hearing impairment.

Limitations of the Study

1. Children identified as having a language delay or disorder might exhibit signs of reticence on particular test items as a result of their language problem rather than from a lack of desire to communicate.

2. The conclusions drawn from this study will be limited to populations which are similar to the one from which the participants were drawn.

Definition of Terms

The following terms are defined as they applied to this particular study:

(1) communicativeness--desire to communicate (Donahue, 1979:1)

(2) reticence--avoiding social, verbal interaction, unwilling to communicate unless prodded; disposed to be silent; and not inclined to speak freely (Phillips and Metzger, 1973:220)

(3) communication disordered--any child identified by a teacher(s) as exhibiting a language, articulation, voice, and/or fluency difficulty

Chapter 2

REVIEW OF RELATED LITERATURE

In order to clarify and support the purpose of this study, several areas of relevance have been identified, investigated, and reported as they were found through a survey of related literature. Basic to the research problem is an understanding of the concept and ramifications of the communication process, as well as how professionals have traditionally viewed and mediated this process. In addition, the concept of an individual's communicativeness will be examined. In relation to communicativeness, the communication disordered individual, or speech and language handicapped individual will be considered. Also, the need for early identification of a child's communicativeness or more importantly, lack of communicativeness will be supported.

The Communication Process

Before an adequate understanding of disordered communication is possible, there must be an understanding of the communication process itself and how it functions as an integral part of a person's life. The complexity of this process is evidenced by the numerous definitions and models of communication found in the literature (Borden, 1971; Irwin and Marge, 1972; Osgood, 1963). Underlying them all is the "basic belief that in communication, the sender's job is to select an appropriate set of signals [verbal or nonverbal] to convey his message; the receiver's job is to understand the message and make an appropriate response

(Donahue, 1979:10)." Communication allows a human interaction between people and hence, acts as a facilitator to the socialization process; without it, social existence would be stifled.

The Speech Clinician's View of Communication

Traditionally, the speech clinician has viewed communication primarily in terms of linguistic content and/or form, as is evidenced by the continued diagnostic and intervention focus on syntax, semantics, and phonology of language. Although minimal in comparison to the other facets of language, there is a recent interest in the pragmatic, or functional aspect of language (Phillips, Butt, and Metzger, 1974:60). Nevertheless, the speech clinician typically disregards the use-related aspects of communication and continues to provide services to those individuals who possess "defective" or "disordered" grammatical rule systems, referent systems, and sound production systems. The "how" of communication is evaluated and treated while the "why" of communication is essentially ignored (Bruner, 1975:1).

It is generally accepted that the speech clinician is responsible for intervening with all individuals who exhibit disordered communication. This includes those who according to Ruesch and Bateson (in Akin, and others, 1970:311) exhibit disturbances in communication behavior when they act contrary to what is generally accepted, e.g., when they say too much or too little, or when their expressions are difficult to understand. Considering this, it would seem that a part of the speech clinician's responsibilities are being ignored. The low intelligibility speaker is treated, but what about the person whose lack of communicativeness causes a reduction in speech output? This individual is not

part of the speech clinician's current "working" definition of disordered communicators, essentially allowing the "why" of communication, or the communicative aspect to be neglected by the speech clinician.

Communicative Competence

Certainly the language components given diagnostic and therapeutic priority are essential in any study of language but not inclusive. The recent attention given to the pragmatic component of language allows for examination of an additionally important dimension of a child's communication skills. Allen and Brown (1976) have investigated this area of "communicative competence" as it relates to functional communication. Communicative competence involves a "knowledge of the rules for what is appropriate language in a given situation. . . , an awareness of transactions that occur between people (Allen and Brown, 1976:23, 248)." Communicative competence not only includes the traditional "linguistic competence," referring to a person's knowledge of language, but it also refers to a "person's knowledge of how to use language appropriately in all kinds of communication situations (Wood, 1977:5)." Competence is directly related to the actual performance of language in social contexts. This provides a more complete view of a child's communication skills but neglects to consider the child who, although possibly communicatively competent, lacks the desire and motivation to communicate.

The Reticent Speaker

The individual who may have a knowledge of these situational linguistic rules and transactions between people but does not use them is not commonly taken as part of the speech clinician's case load and does not fit into Allen and Brown's, or Wood's description of the communicatively incompetent. References to such speakers usually involve terms such as "speech fright," "stage fright," or "elective mutism" (Nelson, 1964:6; Bryngelson, 1964:59).

Phillips (1965:24) has defined this type of non-communicative individual as reticent, or one who avoids verbal as well as social interaction and who is not likely to communicate unless urged to do so, and even then, verbal exchange may be minimal. The literature is filled with different terms used to classify this type of speaker, but the characterizing features are essentially the same:

> He is unusually quiet and tends to avoid interaction. . . . He rarely asks questions, does not socialize well, and physical upsets are often associated with his attempts to communicate . . . . He is quite aware. . . of his incapability and consequently seeks to avoid interactions rather than to participate. He knows that he does not react as others do in personalized communicative situations. . . . Consequently, he knows that his elected social behavior is not desirable and perhaps disabling (Phillips, 1968:39-40).

Prevalence of Reticence

There is relatively minimal attention given to reticence, or communication apprehension, by professionals in direct and related fields of human communication. The reticent individual is not considered handicapped by virtue of recognition by the United States Department of Health Education and Welfare. HEW estimates that somewhat over 10 percent of the children in elementary and secondary schools are

handicapped. Within this 10 percent are the speech impaired, learning disabled, mentally retarded, emotionally disturbed, hard of hearing, deaf, crippled, partially sighted, and blind. This 10 percent is exclusive of the group of reticent communicators which "probably includes more people than all of the other categories combined (McCroskey, 1976:39)." Pederson (in Phillips and Metzger, 1973:221), in a study of 20,000 school children, diagnosed 14 percent of an elementary school population, 24 percent of a junior high population, and 12 percent of a senior high population as reticent: "They showed sufficient avoidance of mundane school situations to be reduced in effectiveness." Also, screening surveys showed a potential incidence of reticence ranging from five percent to as high as 33 percent in typical classrooms (Phillips, 1968:44). These facts and figures point out the high occurrence of reticence; they also indicate a need for reticence to be investigated and examined, especially in the early educational setting.

Traditional and Possibly Future Views of Reticence

The speech clinician makes a distinction between those existing on the communication continuum at the point of being content and/or form disordered, e.g., language or articulation disordered and those who are "attitude disordered," e.g., communication avoiders. Consequently, reticence does not appear to fit into the model presently used in speech clinics. Lillywhite (1964:3) writes:

> Our very limited concepts of what we call speech defects and disorders of communication have prevented us from seeing the relationship between clinical communication disorders and disorders of communication in normal speakers. It would be helpful if we could think of disordered communication as a continuum with difficulties arising from many different causes; some pathological, some psychological and some social--all contributing of the failure to be understood. . . .

Reticence, as it relates to this statement and as it conforms to Van Riper's (2963:10) belief that "speech is defective when it deviates so. . . that it calls attention to itself, interferes with communication, or causes its possessor to be maladjusted," might be construed as defective, and hence, come under the responsibilities of the speech clinician.

Communication Disorders

Communication disorders, including disorders of speech, language, and hearing, are the most frequent handicapping problems occurring in school-age children. Every teacher from preschool to graduate school will have students with speech, language, and/or hearing problems (Filter, 1977:VII).

A general and rather traditional description of these communication disorders follows. A language problem may be either specifically a delay or a disorder. As a delay, the child's sequence of linguistic development is markedly slower than normal; as a disorder, the developing linguistic system is idiosyncratic, not representative of what is considered normal. An articulation problem is the inability to produce specific speech sounds. Disorders of voice are noticeable deviations in the sound of the voice which are evidenced in differing ways, e.g., through pitch, intensity, and/or quality deviations (Filter, 1977:7). Stuttering manifests itself through spasms of speech in the form of repetitions, hesitations, and prolongations of sounds, syllables, and whole words (Filter, 1977:12).

Communication Disorders as Related to Reticence

While the idea has been explored that an otherwise "normal" speaker might have reticent qualities, or be communication apprehensive, this probability has been ignored in relation to the communication disordered individual.

With the exception of stuttering (Muir, 1964) reticence has been researched and investigated as a lack of communicativeness existing independently of the "traditional" disorders of syntax, semantics, and/or phonology. It is possible for both conditions to exist simultaneously. An individual can not only be deviant in the syntactical, semantic, and/or phonological uses of language but also tend to shun communication by withdrawing from it altogether. Possibly existing may be a relationship between the two, i.e., difficulty in communicating and desire to communicate.

Social Acceptance vs. Reticence

It is generally assumed that a speech/language handicap is a social handicap--that it tends to reduce the social acceptance of a child and that the child experiences less gratification from interpersonal relationships than do normal-speaking peers (Bloomer, 1953:28-31; Lerea and Ward, 1966:87). Defective speech and/or language may be influential in how a child is evaluated by peers (Freeman and Sonnega, 1956). People judge character, intellectual capacity, and social standing by the way an individual talks (Joost and Meerlo in Barbara, 1962:475). There is suprisingly little evidence relevant to the significance of speech/language defectiveness in social development. Very little research during the last 40 years has focused on the adjustment

of the communication impaired. While it is more or less a common observation that this exceptional child is subject, in some degree, to rejecting social attitudes, there have been studies both to support and reject that belief (Brissey and Trotter, 1955:277; Freeman and Sonnega, 1956).

Freeman and Sonnega (1956), in a study comparing the reputation of children enrolled in speech and language correction classes with those who were not, found that (1) when chosen on the basis of speaking ability, those in therapy were chosen less often by their peers, indicating a recognition of their impaired speaking ability, and (2) when chosen on the basis of friendship, children from both groups were chosen equally as often by their peers, indicating that the communication disordered children enjoyed a comparable degree of friendship within the classroom. Less positive findings were reported by Perrin (1954). Employing sociometry in order to determine social positions of communication-defective children in the elementary grades, she questioned children concerning a companion in work, play, and seating arrangement. Approximately one-third more isolates were found among 37 speech/language-defective children than among normals, indicating a lesser degree of peer acceptance among the speech/language impaired.

Using direct observation of children in a classroom setting, Lippitt and Gold (1959) found that those who communicated inappropriately and inadequately were lower in the classroom social structure. Several studies have been carried out in relation to peer acceptance and social approval of children with specific disorders of communication. Sherrill (in Bloch and Goodstein, 1971:300) reported internally contradictory results in a study dealing with peer-, teacher-, and self-

perceptions of articulatory defective children. "These children were perceived by others and by themselves as less effective in verbal communication skills, but as similar to their normal-speaking peers in social acceptance characteristics." However, the degree of social acceptance declined as the severity of the articulation disorder increased. In a study by Giolas and Williams (1958) preschool and kindergarten children indicated awareness and disapproval of adult disfluent speech. This same negative reaction is likely to surface as these children hear disfluencies in their peers. Such disapproval serves to reduce social acceptance. The consensus of the aforementioned studies suggest that at least to some degree, peer acceptance is influenced by a child's ability to communicate, however, the findings of the studies do not confirm that social maladjustment automatically results from being speech and/or language impaired.

Van Riper (1963:40, 60) points out that "Abnormal speech is no asset to anyone. It invites penalty from society which prizes the ability to communicate effectively." However, some children with abnormal communication patterns will have no more anxiety than those who speak normally. Nevertheless, the possibility of acceptance and adjustment difficulties is not only present; it is highly likely.

Reticence Resulting From Social Rejection

The primary function of speech is social communication, and speech is to some degree a measure of social adaptation. It becomes an even closer measure of an individual's own self-feelings (Barbara, 1962:242). It would seem logical that a lack of social acceptance would

be reflected in a child's personality development (Woods and Carrow, 1959:279).

There have been investigations into the personalities of the communication disordered child's perceptions of self in relation to peers, the assumption being that self-perceptions might be an outgrowth of recognized peer perceptions. The following statement by Pinter, Eisension, and Stanton (1941:327) serves to clarify the relationship between communication disorders and personality:

> Personality arises as a result of the interplay of conditions between the individual and his environment. Any condition which sets the individual apart from his environment [in this case, a communication disorder] . . . may have a significant effect on the development of a personality which will deviate to a marked degree from others. . . . Because speech is a fundamental in almost all of a person's adjustments, changes in speech accompany changes in personality.

This statement supports Daly's (1979:12) belief that a child's nontalkativeness, or reticent behavior as part of a personality change, may be an outcome of the power of reinforcement interpretation. Communication is a learned skill, and the results of this learning experience, whether positive or negative, are deeply rooted in the human personality. Consider the school age son of cleft-palate parents who, although physically normal himself, uses cleft-palate speech; he may be attacked and ridiculed by his friends (Irwin in Barbara, 1962:291). This type of mockery may also occur with the child who speaks with a "squeaky" voice, "repeats" words over and over, or does not know colors as well as the rest of the class. This predicament of the speech/language impaired child undergoing social separation from peers and classmates frequently causes frustration and distress, and the child may attempt to cope with the situation through communication withdrawal or reticent behavior. Rather

than risk creating a poor impression, interaction is avoided (Tough, 1976:56).

Phillips, Butt, and Metzger (1974:179) point out that "considerations of psychological disorders, such as those related to voice, articulation. . . , and fluency problems. . . need to be considered in understanding why a student might act as he does in the classroom." They also make reference to rural area children who attend semi-urban schools and act reticent in the school environment because expectations of conversation differ from what they have learned at home. Similarily, children from bilingual homes often retreat to reticent behavior in fear that their language and speech will not sound like the other children in the classroom (Phillips, Butt, and Metzger, 1974:178). A similar fear of sounding different is likely to be experienced by the speech/language impaired child. Studies specific to particular communication disorders have confirmed communication withdrawal among these populations. Analysis of language samples obtained from elementary-school stutterers and nonstutterers found the stutterers to avoid talking (Silverman and Williams, 1973:90). Goodstein (1958) and Johnson (1959) both demonstrated an association between stuttering and desire for social withdrawal. In relation to voice disorders, Williamson (in Barbara, 1962:190) found college students with hoarse voice quality to be more reticent and more self-conscious than their peers. While Williamson's study dealt with older individuals, the possibility of it applying to younger individuals needs to be considered.

Examination of a child guidance counselor's case load found that 15 percent of the children were speech disordered. Common to this disordered group was a variety of symptoms associated with emotional and

adjustment problems, e.g., sadness and shyness (Wylie, Feranchack, and McWilliams, 1965:1101-1107). These findings suggest a strong relationship between communication behavior, personality, and adjustment (Johnson, et al., 1956; Barbara, 1960).

Summary: Inclination Toward Reticence

The child with a speech and/or language handicap is generally presumed to have a handicap which reduces social acceptance. The less efficient communication is, the greater the probability of resulting social displacement. This in turn leads to further decreased communication adequacy because children who do not feel accepted by their peers are likely to perpetuate their low status by engaging in withdrawing, non-communicative behavior (Lillywhite and Bradley, 1969:30; Lippit and Gold, 1959:213). It is the nature of a person to behave in ways that will "gain recognition, admiration, respect, and approval . . . and avoid situations that may thwart, frustrate, or [be] dissapoint[ing] (Eisenson, Auer, and Irwin, 1962:132)."

In their book, Phillips, Butt, and Metzger (1974:179) summarize the position of the communication disordered speaker:

> A child who is aware that others react negatively to something about the way he talks may develop a reticent posture in the classroom. Children are often quick to make fun of what is different, particularly before they develop (if they ever do) a dual perspective necessary for them to consider the needs of others. Thus, a child whose speech is hard to understand because of articulation problems which affect pronunciation and diction (lisps, sound substitutions, and so on), or voice problems (a voice too soft to hear or in some other way difficult to listen to), or fluency problems (stuttering and complete blocking of certain words), [or language problems (possibly sentences with "bad grammar")] may choose reticence as an escape from ridicule.

Need for Early Identification of Communicativeness

> Simply the fact that the definition of reticence generally applies to a 'non-verbal' person indicates the negative judgement placed by society on individuals withdrawing from communication (Phillips, 1965:24).

This negative judgement is especially important to the developing child in the elementary school environment, which is regarded by Parsons (1959) as the main socializing agency of the child. The importance of a young child acquiring and using good communication skills is stressed at this point in a child's development. Participation in the classroom is one of the most important learning and interpersonal experiences of a child and is often a basis for peers and teachers to judge a child. The teacher's attitude toward the child is naturally affected by how the teacher perceives the child, and according to Jecker, MacCoby, Breitrose, and Rose (1964) inaccurate judgments about a child are highly likely in the absence of verbal participation. Specifically, the teacher might perceive the child as unintelligent or apathetic to learning, when the core of the problem actually lies in the child's lack of communicativeness. This predicament of the reticent communicator is illustrated by Blue (1975:32-33):

> When questioned or encouraged to take part in oral activities, he grunted negatively or shook his head to indicate that he did not know the answer or, if greatly pressured, gave a minimal response produced with tightly clenched jaws and little, if any, observable lip movement. At such times, the teacher responded neutrally and turned quickly to another child, for she did not understand Johnny. For the most part he remained silent, slouched in his chair, contributing nothing and acquiring nothing.
>
> When the teacher heard that the school speech clinician was taking referrals, she immediately thought of Johnny and responded. . . . She [the speech clinician] judged the child to be marginal, but not defective, communicator. Because of her case load of speech defective children, she did not accept him for therapy.

An additional necessary point is that reticence as a young child, undetected and not remediated, might possibly lead to reticence as an adult. Since many of society's benefits depend on one's ability and willingness to interact with other people, the non-communicative individual is very likely to lose out on many of the benefits so often taken for granted by the communicative speaker (McCrosky, 1976:40).

The speech clinician must address the problem of reticence. Individuals who lack the desire to communicate should be identified and treated as early in life as possible. Special consideration should be given to the communication disordered individual who is likely to exhibit reticence.

Chapter 3

PROCEDURES

The participants in the study, the testing instrument, the administration of the test, and the statistical techniques employed to treat the data are explained in this section.

Participants in the Study

A group of teachers were provided with written statements and examples describing speech and language handicaps (See Appendix A). Using this, the teachers identified a total of 30 preschool children with communication disorders from their respective classrooms. This accepted identification procedure used in the field of speech and language pathology has been supported in the research literature (Diehl and Stinnet, 1959; Prahl and Cooper, 1964; James and Cooper, 1966; Eisenson and Ogilvie, 1971:23; Cooper, 1977). Those 30 identified children formed the experimental group. Another group of 30 children was randomly selected from children with normal speech and language patterns.

The age range of the 60 children involved in this study was 2-9 to 5-5, and they were selected from three preschool day-care facilities in Boone, North Carolina.

Test Instrument

During the developmental stage of the Test of Communicativeness (TOC), an instrument which indicates differences among preschoolers'

desire to communicate (Donahue, 1979:3), the author of the test considered several means by which communicativeness in children might be examined. Although Best (1977:177) states that "information can often best be obtained through direct examination by the researcher" (observation) this tactic was deemed unacceptable by Donahue for several practical reasons: (1) the observation time involved, (2) the fact that this technique allows for subjective interpretation of the behavior by the examiner, (3) the difficulty in observing the children in theoretically equivalent situations, and (4) the lack of inter-judge reliability (Donahue, 1980). A more acceptable means of examining communicative behavior was thought to be through the use of frustrating or incomplete activities likely to elicit communication by the children. The design of the TOC was based on this idea, and the test items themselves were generally modeled after the mand items used in the Parsons Language Sample (Spradlin, 1963) which exemplify such desired situations.

The TOC is composed of 15 test items, "each of which generally attempt(s) to involve the child in a frustrating or incomplete situation, which cannot be resolved or completed unless the child initiates communication with the examiner (Donahue, 1979:22-23)" (See Appendix B). For instance, one item requires the child to complete a simple puzzle. After showing the child the completed puzzle, the examiner takes it apart and gives all of the puzzle pieces to the child, except one. The child is required to put the puzzle back together. In order to complete it, the child must communicate, vocally and/or gesturally, the fact that the missing piece is needed.

In the original form of the TOC, the child's communicative attempts or response to each test item are scored by the examiner on a five-point categorical scale:

0	1	2	3	4
No Response	Prompted Response	Minimal Spontaneous Response	Adequate Spontaneous Response	Elaborate Spontaneous Response

The mean score is reported as the TOC score. To clarify and facilitate the scoring process, this author provided examples of subject responses within each of the five response categories for all 15 test items (See Appendix C).

Reliability

The TOC's original form did not include an item analysis, which is a procedure used to determine test item characteristics such as ambiguity, difficulty level, and discrimination (Sax, 1974:582). Before using the TOC in this study, an item analysis was done to determine which of the 15 test items is capable of measuring individual differences (Sax, 1974:243). Data obtained from prior administrations of the test instrument were used for this analysis. Correlations showed two test items, item three and seven with correlations of 0.354 and 0.081, respectively, to be significantly nondiscriminatory between subjects (See Table 1). However, due to the TOC's overall high reliability correlation, particular items found not to discriminate were left unchanged in order to avoid the possibility of decreasing the test's degree of reliability.

Table 1

Item Analysis Correlations on the TOC

Item No.	Correlation with Total Scores on the TOC
1	0.729
2	0.613
3	* 0.354
4	0.631
5	0.784
6	0.547
7	* 0.081
8	0.408
9	0.633
10	0.742
11	0.747
12	0.664
13	0.787
14	0.666
15	0.499

* not significant at the .05 level of confidence

All other correlations significant at the .05 level of confidence.

The result of the Kuder-Richardson formula 20 reliability measure computed for the TOC was 0.806, indicating a high degree of reliability (Sax, 1974:180).

As part of this study, the TOC was tested for inter-judge reliability. At randomly selected time intervals, the author of the test itself, Donahue (1979), readministered the TOC to eight children participating in this study who had been previously tested by this writer. Four of the children were part of the experimental group and four were from the control group. The readministrations were done within five days following the original testing.

Validity

In Donahue's (1979) study, three measures of communicativeness were used: teacher rating, initiative communication attempts in a free play situation, and the TOC. The subjects were ranked on the three measures from the most communicative to least communicative. Before using the TOC in this study, in an attempt to determine the validity of the TOC by comparing the consistency of performance, agreement between ratings, on the above measures, the Friedman Two-Way Analysis of Variance was computed (Gibbons, 1976:310). This nonparametric statistical procedure found an F-ratio of 0.697 which was significant at the .05 level of confidence, indicating an agreement between the three ranking measures and hence, validity of the test instrument.

Administration of the Test of Communicativeness

Before administering the TOC for the purpose of this study, this author practiced administering the test to 12 preschool children who

were randomly chosen from areas surrounding Boone, North Carolina. Each test administration was both audio recorded for elicited verbal communication responses and recorded in writing for gestural communication responses. The tapes and notes were reviewed and used as part of preparatory training.

For this study, each child was randomly chosen from the total group of subjects and individually tested by one examiner, this author, with the TOC. In an attempt to avoid distraction and prior viewing of the testing procedure, administration of the test took place in areas secluded from the regular classroom setting.

Statistical Treatment

To answer the research questions of this study, a t-Test was employed to determine the difference between the communication disordered groups and the normal groups (Downie and Heath, 1970:180; Silverman, 1977:306-309), and an analysis of variance was performed in order to examine the difference across the three age groups within both the communication disordered and normal groups of children (Downie and Heath, 1970:215-222). The TOC's inter-judge reliability was tested.

Summary

Sixty preschool age subjects were administered the TOC. Thirty of the children were selected on the basis of exhibiting communication disorders, as identified by their teacher(s). Thirty others were randomly selected from the remaining population at three day-care facilities.

The t-Test was employed to examine the difference between the performance of the communication disordered and normal preschool children on the TOC, and an F-test was used to indicate the difference in the three, four, and five year old groups within both the communication disordered and normal groups of children.

Chapter 4

RESULTS AND ANALYSIS OF THE DATA

In Chapter 4, data obtained from this study is presented in tabular form, analyzed, and findings are summarized.

Results

Children aged 2-6 thru 3-6 were considered as three year olds, 3-6 thru 4-6 as four year olds, and 4-6 thru 5-6 as five year olds. Information relative to the total number of children within the experimental group of communication disordered children and the group of normal children along with their sex, age, and respective TOC scores is presented in Tables 2 and 3. Table 4 contains a graph representing the mean TOC for each age level tested within both groups, i.e., those identified as having speech and language difficulties and those viewed as normal.

Data Analysis

The results of computed t-ratios are discussed under restatement of the major null hypothesis and each related subhypothesis; findings of computed F-tests are discussed under restatement of null subhypotheses 4 and 5.

Table 2

TOC Scores for Children Identified as Communication Disordered

3 year olds

Subject	Sex	Age	TOC Score
1	M	2-9	2.1
2	F	3-0	2.2
3	M	3-0	3.5
4	M	3-1	3.5
5	M	3-4	2.9
6	F	3-5	1.7
			mean = 2.7

4 year olds

Subject	Sex	Age	TOC Score
7	F	* 3-6	2.5
8	M	3-7	3.0
9	M	3-7	3.1
10	M	3-8	2.2
11	F	3-8	3.3
12	F	3-8	2.5
13	M	3-8	2.3
14	M	3-11	2.3
15	M	4-0	1.7
16	M	4-1	1.9
17	M	4-1	2.4
18	M	4-2	2.3
19	M	4-4	2.3
20	M	4-4	.8
21	F	4-5	2.5
22	M	* 4-6	2.0
			mean = 2.3

Table 2 (continued)

5 year olds			
Subject	Sex	Age	TOC Score
23	M	4-7	1.7
24	M	4-7	3.1
25	M	4-7	2.9
26	M	4-8	3.0
27	M	4-10	2.5
28	M	5-0	2.7
29	M	5-0	2.9
30	M	5-5	2.5
			mean = 2.7
			OVERALL MEAN = 2.5

* Children who were borderline between age groups were placed in the age group nearest to their age in terms of years and months.

Table 3

TOC Scores for Normal Children

3 year olds

Subject	Sex	Age	TOC Score
1	F	2-10	2.9
2	M	2-11	2.6
3	F	3-0	3.5
4	M	3-0	3.1
5	F	3-3	2.8
6	F	3-4	2.9
7	M	3-4	3.7
8	M	3-4	2.2
9	M	* 3-6	3.1
			mean = 3.0

4 year olds

Subject	Sex	Age	TOC Score
10	F	3-7	3.6
11	F	3-8	2.4
12	F	3-8	2.5
13	F	3-9	3.0
14	M	3-10	4.0
15	F	3-11	2.7
16	F	3-11	3.5
17	F	4-0	3.7
18	M	4-1	2.4
19	M	4-2	3.7
20	M	4-5	3.1
			mean = 3.2

Table 3 (continued)

5 year olds

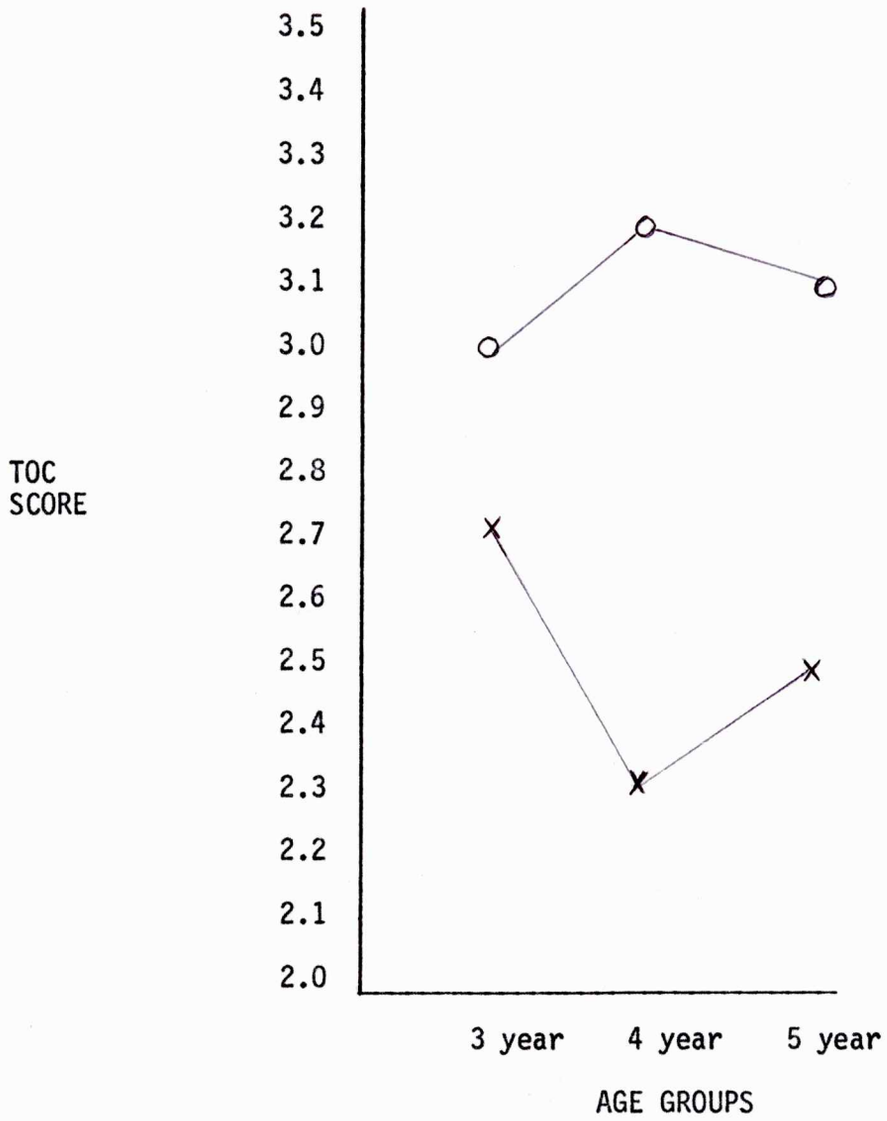
Subject	Sex	Age	TOC Score
21	F	4-7	3.4
22	M	4-8	2.8
23	M	4-9	2.7
24	F	4-10	3.5
25	M	4-11	2.2
26	M	5-1	2.7
27	M	5-1	3.5
28	F	5-2	3.5
29	F	5-2	3.1
30	M	5-3	3.3
			mean = 3.1
			OVERALL MEAN = 3.1

* Children who were borderline between age groups were placed in the age group nearest to their age in terms of years and months.

Mean TOC Scores for

Communication Disordered and

Normal Children



X = Communication disordered

O = Normals

Major Null Hypothesis

> There is no significant difference between the performance of preschool children identified as having communication disorders and those having normal speech and language patterns on the Test of Communicativeness.

According to the information contained in Table 5, the major null hypothesis was rejected at the .05 level of confidence, indicating a significant difference between the performance of these two groups on the TOC.

Null Subhypothesis 1

> There is no significant difference between the performance of three year old children identified as having communication disorders and those having normal speech and language patterns on the Test of Communicativeness.

According to the information presented in Table 6, null subhypothesis 1 was not rejected, indicating no significant difference between the performance of these two groups on the TOC.

Null Subhypothesis 2

> There is no significant difference between the performance of four year old children identified as having communication disorders and those having normal speech and language patterns on the Test of Communicativeness.

According to the information found in Table 6, null subhypothesis 2 was rejected at the .05 level of confidence, indicating a significant difference between the performance of these two groups on the TOC.

Null Subhypothesis 3

> There is no significant difference between the performance of five year old children identified as having communication disorders and those having normal speech and language patterns on the Test of Communicativeness.

Table 5

t-Ratio Computed from 30 Communication Disordered and 30 Normal Children's Mean Scores on the TOC

Groups	t-Ratio	Level of Significance
Communication Disordered vs Normals	4.184	$<.001$

Table 6

t-Ratios Computed from Groups of Three, Four, and Five Year Old Communication Disordered and Normal Children's Mean Scores on the TOC

Groups	t-Ratio	Level of Significance
3 Year Old Disordered vs 3 Year Old Normals	1.061	NS
4 Year Old Disordered vs 4 Year Old Normals	3.624	$< .01$
5 Year Old Disordered vs 5 Year Old Normals	1.925	NS

According to the information presented in Table 6, null subhypothesis 3 was not rejected, indicating no significant difference between the performance of these two groups on the TOC.

Null Subhypothesis 4

> There is no significant difference in the performance of three, four, and five year old children identified as communication disordered on the Test of Communicativeness.

According to the information presented in Table 7, null subhypothesis 4 was not rejected, indicating no significant difference in the performance of these three age groups on the TOC.

Null Subhypothesis 5

> There is no significant difference in the performance of three, four, and five year old children having normal speech and language patterns on the Test of Communicativeness.

According to the information presented in Table 8, null subhypothesis 5 was not rejected, indicating no significant difference in the performance of these three age groups on the TOC.

Results of Inter-Judge Reliability Examination

According to the information contained in Table 9, there was a high degree of inter-judge reliability between this examiner and the original author of the TOC. As a result of administering the TOC to the same eight children, four communication disordered and four normal children, the examiners agreed in their scoring of 80% of the total 120 test items administered.

Table 7

Analysis of Variance of Communication Disordered Three, Four, and Five Year Old Children

Source	df	SS	MS	F	Level of Significance
"Between" groups	2	.84	.42	1.2	NS
"Within" groups	27	9.44	.35		
Total	29	10.28			

Table 8

Analysis of Variance of Normal
Three, Four, and Five
Year Old Children

Source	df	SS	MS	F	Level of Significance
"Between" groups	2	.14	.07	.28	NS
"Within" groups	27	6.87	.25		
Total	29	7.01			

Table 9

TOC Inter-Judge Reliability Figures
Between Two Examiners Testing
Eight Children

	Number of Children	Total Number of Test Items	Percentage of Agreement
Disordered	4	60	78%
Normal	4	60	82%
Total	8	120	80%

Summary

Based upon statistical analysis of the data obtained from this study, there was a significant difference between TOC scores of the total group of communication disordered and the normal children.

There was a significant difference between TOC scores of communication disordered four year olds and normal four year olds.

No significant difference was found to exist among the three age groups, i.e., three, four, and five year olds, in either the communication disordered or normal groups of children.

The TOC was found to have a high degree of inter-judge reliability.

Chapter 5

SUMMARY, DISCUSSION, AND RECOMMENDATIONS FOR FURTHER INVESTIGATION AND RESEARCH

Chapter 5 includes a summary of the study, a discussion of the conclusions and implications drawn from the data, and recommendations for further investigation.

Summary

The purpose of this study was to use the Test of Communicativeness (TOC) to compare the desire to communicate between 30 preschool children identified as having communication disorders and 30 children of the same age who exhibit normal speech and language patterns.

A significant difference was found to exist between the total group of communication disordered children and the total group of normal preschool children's performance on the TOC, and between the TOC performance of four year old communication disordered children and four year old normal children.

Discussion

Results of this study suggest that there does exist a difference in communicativeness, or desire to communicate, between preschool children who are communication disordered and those having normal speech and language patterns. These findings support the possibility that preschool children who have speech and language problems may be aware of their

handicapping condition and its negative connotations, and hence, resort to a more reticent posture than do normal children.

The t-ratio computed between the total group of disordered children and normal children, i.e., all 60 three, four, and five year olds, was significant. Of the three age groups, significant differences were found only between the subgroups of communication disordered four year olds and normal four year olds. With regard to these findings, it should be noted that a total of 27 children, 45 percent of the total 60 children participating in the study, formed the four year old group. This represented the largest sample of any of the age groups involved. It is likely that this large sample size of four year olds accounted for the significance of the calculated t-ratio, and that the small samples of three and five year olds were the factors responsible for the non-significant difference in test results existing between these groups of disordered and normal children (Roscoe, 1975:181-182; Van Dalen, 1973:320).

Another finding of interest is in relation to the developmental issue of communicativeness. A one-way analysis of variance revealed that no significant difference exists among the three age groups within either the communication disordered children or children having normal speech and language patterns. This suggests that the TOC does not make developmental distinctions with regard to the desire to communicate. In addition, because there was no difference developmentally we can assume that all children within each of the age groups came from the same parent population, and therefore, if there were larger sample sizes at ages three and five it is probable that a significant difference would be found between the communication disordered and normal preschool

children. While the TOC did not differentiate across the three age levels, it found all of the communication disordered children to have a lesser desire to communicate than the combined ages of normal children.

Perhaps the major implication of this study stems from the fact that these communication disordered preschool children did exhibit a lesser desire to communicate than normal children. This suggests that some sort of communicativeness therapy should be considered for these individuals prior to "traditional" speech and/or language therapy. These reticent children need a stronger desire to communicate, a motivating force, before maximum success can be expected with the "traditional" therapies.

There is always the question of whether this lack of communicativeness results from extraneous variables such as personality traits, academic failure, shyness and so on, or the presence of speech and/or language disturbances. Hopefully, through random sampling and support from the findings of such highly significant differences between the communication disordered and normal children, this question is more or less ruled out, pointing to the communication disorder as the aggravator of the speech and/or language handicapped child's reticent posture.

This study does support the fact that there exists a difference between communication disordered and normal preschool children's desire to communicate; it also supplements Donahue's (1979) findings with additional normative data to indicate that communicativeness does vary between individuals.

Donahue (1979:43-44) stated: the TOC

> does not even attempt to identify those who are non-communicative enough to require therapeutic intervention. . . it has provided researchers with an initial stepping-stone, a place to begin in the area of children's communicativeness.

This author shares a similar view in that the findings of this study do not intend to suggest that all children having speech and language problems do not have a desire to communicate. However, of the preschool children examined, the communication disordered individuals did show a trend to be less likely to communicate and more reticent than a similar sample of normal children.

Recommendations for Further Research

The following suggestions are made as a result of the present study:

1. Consideration needs to be given to the sequential order of the test items on the TOC. For example, to allow for more diversity test items 12 and 13, both story-telling activities, might be separated by other test items.

2. Since linguistic competence will be highly varied across age groups, the issue of what is an "adequate" response for three year olds vs "adequate" for four and five year olds needs to be addressed. This might require an alteration in the TOC's scoring system.

3. In an attempt to (a) assure that each test item does test communicativeness and (b) score children's responses more objectively, the term communicativeness as it relates to the TOC needs to be operationally defined. More specifically, it needs to be strictly defined in observable and measureable terms.

4. Data should be collected on children exhibiting specific communication disorders, e.g., the TOC performance of stutterers vs articulation cases.

5. A correlational study might be done to examine the existing relationship between the TOC and factors which may be associated with communicativeness such as personality variables, educational achievement, and speech and language patterns.

6. A multiple regression research design might be employed to determine various predictors of performance on the TOC.

7. Communicativeness should be explored with children found to be more or less unsuccessful with the "traditional" speech and language therapies.

8. There needs to be some probe into early intervention with reticent children.

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APPENDICES

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704/262-2184

Dear Teacher,

As part of our continuing program of research in preventing communication problems, we need your help in locating preschool children who may have difficulty communicating in the classroom. Would you please take the time to consider each child in your classroom and decide if his/her communication patterns are similar to any of the following descriptions. List the child's name under the appropriate section of descriptors. Any child whom you identify will be individually considered by us, and ultimately we will discuss his/her situation with you. If you have any questions, comments, or concerns please feel free to contact Cindy Cardwell at 262-2185.

Thank-you very much.

1. Does the child

   a. substitute one sound for another?
   b. leave out sounds?
   c. distort a sound(s) causing it to sound "funny"?

2. Is the child hard to understand?

NAMES: 1. 6.

2. 7.

3. 8.

4. 9.

5. 10.

1. Does the child

   a. repeat sounds or syllables or words more than his/her classmates?
   b. hesitate frequently?
   c. have difficulty in getting his/her words out?
   d. have abrupt starts and stops while speaking?
   e. seem to think faster than he/she can talk?

NAMES: 1. 6.

2. 7.

3. 8.

4. 9.

5. 10.

1. Is the child's voice

   a. noticeably unpleasant?
   b. pitched higher or lower than most of his/her classmates?
   c. monotonous, not showing much inflection?
   d. breathy?
   e. hoarse?
   f. too loud?
   g. weak?

NAMES: 1. 6.

2. 7.

3. 8.

4. 9.

5. 10.

1. Is the child's speech slower in developing than most of his/her classmates?

2. Does the child

   a. have a limited vocabulary for his/her age?
   b. use shorter and simpler sentences than his/her classmates?
   c. use fewer phrases and prepositions than his/her classmates?
   d. have difficulty understanding what most of his/her classmates readily understand?
   e. seem to say less than you feel he/she understands?
   f. have difficulty getting his/her thoughts across?
   g. show more weaknesses than strengths in the language arts?

NAMES:

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

APPENDIX B. The Test of Communicativeness

TEST OF COMMUNICATIVENESS
(Examiner's Form)

Directions for Administration

(1) Read the instructions for administering each test item, and proceed accordingly.

(2) There is no specific verbal or gestural response to be elicited for each item. All verbal and gestural communicative attempts pertaining to the stimulus item should be considered in the scoring.

(3) On all items, there is a time limit during which the child is required to respond. If, at the end of this time period, the child has not responded, a prompt may be given.

(4) A prompt may be defined as any additional information or encouragement given to the child in an effort to elicit a response from him.

(5) Any response emitted by the child after the prompt is given should be scored "1" (see score sheet), no matter how elaborate the response.

Directions for Scoring

(1) The response for each test item is scored on a scale ranging from 0 to 4 (see score sheet).

(2) The Test of Communicativeness Score may be obtained by adding together the individual scores and dividing by 15.

Materials	Instructions
1. wind-up toy	a. Examiner holds wind-up toy in the child's view. b. Examiner winds up toy, places it on the table out of the child's reach and allows it to run for five seconds. c. Examiner picks up toy and silently holds it in the child's view for 10 seconds. d. If the child has not responded, a prompt is given. e. If the child still fails to respond, the toy is placed back in the box.

TOC (cont.)

	Materials	Instructions
2.	ball	a. Examiner holds the ball within the child's view. b. Examiner says I LIKE TO PLAY BALL, and rolls the ball across the table to the child. c. If the child has not indicated that he wants to play ball with the examiner after 15 seconds, a prompt is given. d. If the child still fails to respond, the ball is placed back in the box.
3.	simple puzzle	a. Examiner shows the child a puzzle which has been put together. b. Examiner takes the pieces out and subtly keeps one of the pieces in her hand. c. Examiner says YOU PUT IT BACK TOGETHER. d. After completion of the puzzle, the child has 15 seconds to indicate that a piece of the puzzle is missing. If he has not responded within this time, a prompt is given. e. If the child still fails to respond, the incomplete puzzle and missing piece are put back in the box.
4.	piece of paper crayon	a. Examiner makes sure the child has no drawing implement. Examiner then gives the child a piece of paper and says DRAW A PICTURE OF YOUR MOMMY FOR ME. b. The child has 15 seconds in which to indicate that he needs a crayon. If he has not responded, a prompt is given. c. If he still fails to respond, he is given a crayon and allowed to draw, but is given a score of "0" for this item.
5.	form board & forms 1 form which does not fit	a. Examiner shows the child an empty form board. She also demonstrates placing a form into its proper space in the board.

TOC (cont.)

	Materials	Instructions
		b. Examiner gives the child the remaining forms, as well as the 1 form which will not fit, and says NOW YOU PUT THESE ON THE BOARD. c. If, 15 seconds after filling up the board, the child has not indicated that there is an extra form, a prompt is given. d. If the child still fails to respond, the completed form board and extra piece are placed back in the box.
6.	M & M's	a. Examiner holds out her two open palms (one of which contains an M & M) in front of the child. b. Examiner places both hands behind her back and says IF YOU GUESS WHICH HAND THE M & M IS IN, YOU CAN EAT IT. c. Examiner holds out her two closed fists in front of the child so the child can guess. d. If the child guesses, the examiner puts her hands in her lap and waits for 30 seconds for the child to indicate that he wants feedback on the rightness or wrongness of his guess. If he fails to respond within this time, a prompt is given. e. If he still fails to respond, he is told whether he was right or wrong, but is given a score of "0" for the item.
7.	12 blocks	a. Examiner builds a tower with the 12 blocks. b. Examiner tears down her tower and says NOW IT'S YOUR TURN. YOU DO IT, but hands the child only 1 block. c. The child has 10 seconds to indicate that he does not have enough blocks. If he has not responded within this time, a prompt is given. d. If he still fails to respond, all 12 blocks are placed in the box.

TOC (cont.)

	Materials	Instructions
8.	box with lid filled with pretty seashells (or anything of interest to the child)	a. Examiner places the closed box in the child's view but out of the child's reach. b. Examiner peeks into the box and for 15 seconds makes such comments as YOU SHOULD SEE WHAT I HAVE IN HERE or I HAVE SOMETHING REAL SPECIAL IN HERE. c. Then for 15 seconds the examiner silently looks into the box, giving the child an opportunity to indicate his desire to look into the box. If the child does not respond within this time, a prompt is given. d. If the child still fails to respond, the box is taken away.
9.	peg board & pegs mallet	a. Examiner pounds a peg in the pegboard with the mallet. b. Examiner hands the board and pegs to the child and says YOU DO IT. The examiner retains the mallet, however. c. The child has 15 seconds to indicate that he needs the mallet. If he does not respond within this time, a prompt is given. d. If the child still fails to respond, the peg board and mallet are placed back in the box.
10.	picture of playing children	a. Examiner shows the picture of playing children to the child. b. Examiner says THESE CHILDREN ARE PLAYING. YOU WANT TO PLAY, TOO. WHAT WOULD YOU DO? c. The child has 30 seconds in which to respond. If he has not responded within this time, a prompt is given. d. If he still fails to respond, the picture is placed back in the box.
11.	doll with bandage on her leg	a. Examiner presents the doll and says THIS DOLLY FELL DOWN AND HURT HER LEG. HOW DOES SHE FEEL? b. The child has 30 seconds in which to respond. If he has not

TOC (cont.)

	Materials	Instructions
		responded within this time, a prompt is given. c. If he still fails to respond, the doll is placed back in the box.
12.	story poster	a. Examiner shows the child the poster. b. Examiner says TELL ME A STORY ABOUT THIS. c. The child has 45 seconds in which to respond. If he does not respond, a prompt is given. d. If he still fails to respond, the poster is placed back into the box.
13.	story poster cover sheet which is 1/3 the size of the poster	a. Examiner shows the child the poster which has been partially covered by the cover sheet. b. Examiner says TELL ME A STORY ABOUT THIS. c. The child has 15 seconds to indicate that part of the poster is covered. If he does not respond within this time, a prompt is given. d. If he still fails to respond, the poster is placed back in the box.
14.	record player record of singing children	a. Examiner places record on the record player and says NOW WE ARE GOING TO LISTEN TO SOME LITTLE CHILDREN SING A SONG. b. Examiner sets the record player on the lowest speed so that the sound will be distorted. c. The child has 30 seconds to indicate that the record sounds strange. If he does not respond within this time, a prompt is given. d. If the child still fails to respond, the record is taken off of the player and is put back in the box.

TOC (cont.)

	Materials	Instructions
15.	child-proof jar M & M's	a. Examiner places M & M's in the child-proof jar. b. Examiner tells child that he can have an M & M, and hands the jar to the child. c. The child has 15 seconds to indicate he needs help in opening the jar. If he does not respond within this time, a prompt is given. d. If the child still fails to respond, the jar is opened by the examiner and the child is given an M & M, but is given a score of "0" for this item.

TEST OF COMMUNICATIVENESS
(Score Sheet)

Child's Name_____

*Circle the appropriate number for each test item. Date_____

TEST ITEM	NO RESPONSE	RESPONSE AFTER PROMPTING	MINIMAL SPONTANEOUS RESPONSE	ADEQUATE SPONTANEOUS RESPONSE	ELABORATE SPONTANEOUS RESPONSE
1	0	1	2	3	4
2	0	1	2	3	4
3	0	1	2	3	4
4	0	1	2	3	4
5	0	1	2	3	4
6	0	1	2	3	4
7	0	1	2	3	4
8	0	1	2	3	4
9	0	1	2	3	4
10	0	1	2	3	4
11	0	1	2	3	4
12	0	1	2	3	4
13	0	1	2	3	4
14	0	1	2	3	4
15	0	1	2	3	4

TEST OF COMMUNICATIVENESS SCORE_____

APPENDIX C. Examples of Responses for Each Test Item on the Test of Communicativeness

TOC Score	Response Catagory
0	NO RESPONSE
1	RESPONSE AFTER PROMPTING
2	MINIMAL SPONTANEOUS RESPONSE
3	ADEQUATE SPONTANEOUS RESPONSE
4	ELABORATE SPONTANEOUS RESPONSE

*appropriate--defined for the purposes of this test instrument as, directly pertaining to the task topic

Test scores applying equally to each of the 15 test items:

TOC Score	Subject's Response
0	No gestural or verbal response
1	Response which follows "any additional information or encouragement" given by the examiner (Donahue, 1979:50)

Response examples to specific test items:

	TOC Score	Subject's Response
Test Item 1: wind-up toy	2	a. puzzled/questioning facial expression
	3	a. reaches for the toy b. requests the toy, e.g., "Give it to me."
	4	a. takes the toy and makes it work b. any appropriate response more detailed and involved beyond a request for the toy, e.g., "I know how to make it work."; "I have one of those at home. . ."
Test Item 2: ball	2	a. puzzled/questioning facial expression b. grasps ball c. states name--"ball"
	3	a. rolls the ball back b. rolls the ball back and says, e.g., "Here."; "I can roll it too."

Response examples to specific test items (cont.):

	TOC Score	Subject's Response
	4	a. any appropriate response or provided alternative more detailed and involved, e.g., "I was playing ball once. . ."; "You can hit a ball too."
Test Item 3: simple puzzle	2	a. puzzled/questioning facial expression; shoulder shrug
	3	a. glances around for missing piece b. states that the puzzle can't be finished
	4	a. any appropriate response more detailed and involved, e.g., "You can't do it if you don't have all the pieces."; "I can't finish because. . ."
Test Item 4: piece of paper crayon	2	a. puzzled/questioning facial expression; laugh
	3	a. states, e.g., "I can't."; "How?" b. requests a drawing implement
	4	a. any appropriate response or provided alternative more detailed and involved, e.g., "I can't draw a picture, you forgot to give me. . ."; "I can draw a picture of. . ."
Test Item 5: form board & forms 1 form which does not fit	2	a. acknowledges misfit form by putting it aside or by a puzzled/questioning facial expression
	3	a. states, e.g., "This doesn't fit."; "I don't need this one."
	4	a. any appropriate response or provided alternative more detailed and involved, e.g., "This one's too big, it can't fit here."; "You could put this one. . ."
Test Item 6: M & M's	2	a. puzzled/questioning facial expression b. states name--"M & M's";"candy"
	3	a. points to the opposite fist b. states, e.g., "Give me my candy."; "That's not fair." c. asks, e.g., "Was I right?"

Response examples to specific test items (cont.):

	TOC Score	Subject's Response
	4	a. any appropriate response more detailed and involved, e.g., "You said I could eat it if I guessed right."
Test Item 7: twelve blocks	2	a. puzzled/questioning facial expression b. glances around for more blocks c. builds with one block
	3	a. states, e.g., "I can't."; "Where are the blocks?
	4	a. any appropriate response or provided alternative more detailed and involved, e.g., "You had more blocks than I did. . ."; "If I had some blocks I could build a. . ."
Test Item 8: box with lid filled with pretty seashells (or anything of interest to the child)	2	a. appropriate facial expression
	3	a. states, e.g., "Let me see."; "I want to look."
	4	a. any appropriate response or provided alternative more detailed and involved, e.g., "I have a box like that at home, and it. . ."; "I saw some seashells at the beach."; "I put pencils in my box."
Test Item 9: peg board & pegs mallet	2	a. screws pegs in; pounds pegs with fist b. puzzled/questioning facial expression c. reaches for the mallet and/or takes it but does not use it d. states, e.g., "I can't."
	3	a. takes the mallet and uses it b. states, e.g., "Give me the hammer." c. states, e.g., "My daddy has a hammer at home. . ."
	4	a. any appropriate response or provided alternative more detailed and involved which accompanies hammering, e.g., "I have a hammer at home."; "You can't hit real nails with this."; "You can hit real nails with my Daddy's hammer."

Response examples to specific test items (cont.):

	TOC Score	Subject's Response
Test Item 10: picture of playing children	2	a. appropriate facial expression; shoulder shrug
	3	a. states, e.g., "Ask my mommy."; "Tell them I want to play."; "Ask them if I can play."; "Play with them."
	4	a. any appropriate response or provided alternative more detailed and involved, e.g., "I was playing one time and. . ."; "I could go play with my other friend."
Test Item 11: doll with bandage on her leg	2	a. puzzled/questioning facial expression; shoulder shrug
	3	a. states, e.g., "I don't know." b. states, e.g., "She cried."; "It hurts." c. states, e.g., "Her mommy put a bandage on it."
	4	a. any appropriate response or provided alternative more detailed and involved, e.g., "One time I fell down and. . ."; "I had to have stitches one time."; "The dolly had to have stitches."; "She went to the hospital."
Test Item 12: story poster	2	a. states, e.g., "I can't."; "I don't know a story." b. points to items in the poster c. names items in the poster
	3	a. generally tells about the poster using a simple string of words
	4	a. tells about the poster and the events going on with great detail and involvement b. any appropriate response or provided alternative more detailed and involved, e.g., "I like to play ball like they do."
Test Item 13: story poster with a cover sheet which is 1/3 the size of the poster	2	a. states, e.g., "I can't."; "I don't know a story." b. points to items in the poster c. names items in the poster

Response examples to specific test items (cont.):

	TOC Score	Subject's Response
	3	a. generally tells about the poster using a simple string of words b. comments on the cover sheet
	4	a. tells about the poster and the events going on with great detail and involvement b. makes a comment about the cover sheet, e.g., "I can't see all of it because . . ." c. any appropriate response or provided alternative more detailed and involved, e.g., "I have a ball like that one that the boy is hitting with."
Test Item 14: record player with record of singing children	2	a. puzzled/questioning facial expression
	3	a. laugh; obvious facial grimace b. states, e.g., "That's funny."; "That's not right."
	4	a. any appropriate response or provided alternative more detailed and involved, e.g., "I haven't ever heard anyone sing like that."
Test Item 15: child-proof jar M & M's	2	a. single, rather effortless attempt to open the jar
	3	a. attempts to open the jar and has an appropriate facial expression b. attempts to open the jar and states, e.g., "I can't."; "It's too hard." c. attempts to open the jar and hands it to the examiner for help
	4	a. any appropriate response or provided alternative more detailed and involved, e.g., "We have some jars like this at home."; "You can put medicine in a jar like this."