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Preschoolers' reactions to puppets displaying normal, stuttered, and phonologically delayed speech patterns

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PRESCHOOLERS' REACTIONS TO PUPPETS DISPLAYING NORMAL, STUTTERED, AND PHONOLOGICALLY DELAYED SPEECH PATTERNS

by

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Preschoolers' Reactions to Puppets Displaying Normal, Stuttered, and Phonologically Delayed Speech Patterns

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The purpose of the present study was twofold: (1) to determine whether preschoolers mention the speech of other normal, stuttering, and phonologically delayed simulated preschoolers, and (2) to determine whether preschoolers react differently to their simulated peers with those disordered speech patterns than to those with normal speech. A short, videotaped play of 3 puppets displaying each of these speech patterns was presented to 45 preschoolers. The children were then asked questions designed to reveal their awareness of and reactions to speech disorders in their peers.

The results of the study indicated that 12 of the 45 subjects reacted verbally to one or more of the puppets' speech patterns, and that significant differences in the subjects' reactions to the normal vs. stuttered and phonologically delayed speech patterns were obtained on one measure (the normal-speaking puppet was chosen most often as the one the children did not want for a friend). A significantly greater proportion of the children in the group who mentioned speech patterns correctly identified puppets who had a hard time talking than did those in the group who did not mention speech patterns. Theoretical and clinical implications were discussed.

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CHAPTER ONE

STATEMENT OF THE PROBLEM

I. Introduction

Negative listener reactions to disfluent speech or to disfluent speakers have been implicated as one causal factor in the development of stuttering (Johnson 1955). According to one theory, some "normal" speech behavior may evolve into "stuttering" (i.e., simple disfluencies accompanied by secondary behaviors) as a result of listener responses, and existing stuttering problems may be aggravated by these responses. The speaker's reaction to his own stuttering therefore cannot be disassociated from the listeners' reactions.

Andrews, Craig, Feyer, Hoddinott, Howie, and Neilson (1983) maintain that current knowledge about stuttering does not support this "diagnosogenic" theory in that, as a group, parents of stuttering children have not proved to be different than parents of non-stutterers in their reactions to disfluencies, and that the theory does not account for apparent genetic influences on stuttering or within-subject variability of stuttering behaviors. It is apparent from these objections that Andrews, et al., view stuttering as a homogenous disorder, whereas Johnson (1946) did not (he suggested that "the diagnosis of stuttering is one of the causes of the disorder," not the sole cause." p. 446). Regardless of how this conflict may in the future be resolved, the fact remains that the

diagnosogenic theory of stuttering has greatly influenced stuttering research and still provides the foundation for such intervention strategies as parent desensitization to the child's disfluencies and desensitization of the child to listener reactions.

Parents of the young disfluent child are generally considered to be the most important listeners and thus are the ones to be involved in attempts by professionals to modify the child's listener environment (Beasley 1956, Bloodstein 1975). The modification of teachers' and siblings' reactions is also included in some professionals' intervention plans (Eisenson and Ogilvie 1963), but the potential effects of preschoolers' reactions to disfluent speech in their peers have attracted little attention in the stuttering literature. At a time when many children's adult caregivers work outside of the home, and when there is a growing emphasis on the importance of social interactions to a child's development, more and more children are spending a substantial portion of their early years in day-care facilities and preschools. If preschoolers are aware of disfluencies in their peers, and if they react negatively to them, thus calling the beginning stutterer's attention to his/her speech, an important element in the development of stuttering or intervention with stutterers may frequently be overlooked by the theoretician or clinician who does not focus on this aspect of the child's environment.

The paucity of research is even more noticeable in the area of social consequences of preschoolers' phonological disorders. One possible approach to handling a young child exhibiting immature phonological processes or "delayed speech development" is to defer treatment

and monitor his/her speech for a period of time on the assumption that it may mature on its own (Carter and Buck 1958, Van Riper and Erickson 1969). Another philosophy would maintain that intervention is indicated on the basis of the need to prevent or minimize negative social consequences (Perin 1954, Beasley 1956). Both approaches lack strong justification due to insufficient empirical evidence supporting either one.

The purpose of this study was twofold: (1) to determine whether preschoolers mention stuttering and phonological disorders in simulated preschoolers, and (2) to determine whether preschoolers react differently to simulated peers with disordered speech patterns than to those with normal speech.

II. Review of the Literature

The theory that stuttering can be caused by the diagnosis of normal speech disfluencies as "stuttering," and by the concommitant negative reactions of the listener, has done much to shape the thinking of speech pathologists and the direction of therapeutic techniques that have typically been employed with young children. Johnson (1955) compared information on forty-six children labeled as stutterers to that of an equal number of nonstutterers. He found no differences between the groups on reports of birth condition, diseases and injuries, developmental indices, or speech development. Lay judges, for the most part, made the original diagnosis of "stuttering" in reference to easy, brief repetitions of syllables, words or phrases in the child's speech. The child typically evidenced no awareness of his disfluencies at the time of the diagnosis. Johnson (1955) concluded that what the lay judges

originally classified as "stuttering" in most cases was actually normal speech behavior, and that the "stuttering," therefore, took place "not only in the child's mouth," but also "in the parent's ear." (p. 70) He believed that further support for this conclusion was provided by the percentage of cases judged to be "normal or nearly normal" at the close of the study. The cases were observed over a period of from five to fifty-one months, at the end of which time the recovery rate was reported to be 72%. This improvement was apparently assumed to be the result of parent counseling (Johnson 1955). The above was one of a series of studies relating to the onset of stuttering which Johnson (1959) later reported in their entirety. He found that in a group of 2½- to 8-year-old children, the mean number of disfluencies per one hundred words spoken was significantly higher for those labeled as stutterers than for those considered nonstutterers. Johnson (1959) wrote that the composite results of those studies indicated that the origin of stuttering in young children was a problem.

> "that involved the interaction of listener and speaker--that is, of the speaking child and those others, chiefly the child's authority figures, his parents primarily, who listened and reacted evaluatively to his speech. The data indicate that by virtue of this interaction the child tended to acquire from his parents and other important listeners the sort of perceptual and evaluative reaction to his own speech behavior and to himself as a speaker, which served to inhibit and disrupt his speech reactions in various forms and to various degrees." (pp. 261-262)

Although most parents maintained that, on the surface, they did not react to their child's disfluencies, Johnson (1967) reported that the results of the study indicated that they showed their anxiety in subtle ways, such as through postural tensions and vocal inflections.

Johnson's (1955) conclusions regarding the role of listener reactions in the development of stuttering may have been somewhat premature. Wingate (1976) recounted the results of two studies (Glasner and Rosenthal 1957, Kelly and Frick 1966) in which parents of five- to six-year-olds were questioned about their children's fluency development. They found that of those who had ever considered their child to stutter, more than 50 percent reported spontaneous remission by the time they responded to the questionnaire. Only four in the first study had sought professional help of any sort, and of these, two were no longer stuttering. The recovery rate of 72 percent which Johnson (1955) attributed to the effects of parent counseling may have been largely due to spontaneous remission or to some other factor. Therefore, the improvement following counseling does not necessarily support his etiological hypothesis.

Although the empirical evidence supporting a "diagnosogenic" theory of stuttering development appears to be far from conclusive, many professionals have relied on it as a basis for their intervention strategies with young stutterers. Some (e.g. Johnson 1959, Eisenson and Ogilvie 1963, Bloodstein 1975) maintain that the emphasis of intervention should be on preventing the child from becoming aware of his/her disfluencies, by treating the stutterer through his/her parents. Others (e.g. Van Riper 1973, Gregory and Hill 1980, Starkweather 1980) recommend working directly with the child using such techniques as modeling and desensitizing the child to fluency disruptors, but continuing to avoid increasing his/her awareness of speech disfluencies. There are those (e.g. Adams 1980, Shine 1980)who do advocate direct management of the

beginning stutterer's speech behavior, but even they do not ignore the potential role of the listener.

The following review of literature pertaining to listener reactions to speech disorders, children's awareness of and evuation of speech phenomena, and preschoolers' ability to judge speech phenomena and adopt cultural stereotypes will expose the need to determine whether preschool children react negatively to some speech disorders in other preschoolers. The answer may add to our understanding of the development of stuttering, and may have implications for a philosophy of intervention for various speech disorders in young children.

A. Listener's Reactions to Disfluencies and Other Speech Phenomena

The tendency of adults to associate the concept of "stutterer" with negative personality traits has been fairly well documented. Yairi and Williams (1970) asked school speech clinicians to list "all words, adjectives, or traits" they would use to describe elementary school-age boys who stuttered. They found that most descriptive terms given were of personality characteristics (as opposed to physical or mental characteristics) and that most were judged to be undesirable. Woods (1978) compared classroom teachers' and speech clinicians' ratings on stereotypical behaviors of hypothetical eight-year-old and adult males to that of hypothetical eight-year-old and adult stutterers. Both groups of judges rated the stuttering males less favorably (more submissive and nonassertive) than the "normal" males. These studies indicate that adults typically include negative personality characteristics in their concept of "stutterers," but the degree and types of

disfluencies to which they were referring was not considered by the authors.

The effect that degree of disfluency has on listeners' evaluation of the stutterer was addressed in a study conducted by Turnbaugh, Guitar and Hoffman (1979). Speech/language Pathologists rated one hypothetical construct (either "normally fluent individual," "mild stutterer," "moderate stutterer," or "severe stutterer") on a personality trait scale. The ratings received by each of the constructs were then compared. Most personality traits were significantly more negative for all levels of stutterers than for "normals." Within the "stutterer" categories, the only significant difference found was between the "mild" and "severe" groups. These results would seem to indicate that severity of disfluencies does not substantially influence (except in extreme cases) listeners' ratings. In a task in which listeners designated individual tape-recorded speech samples as stuttering or nonstuttering, Boehmler (1958) found that the more severely disfluent a recorded sample of speech was, the more likely it was to be labeled "as containing a stuttering nonfluencey." He also found that speech pathologists were more likely to use the stuttering label than untrained judges. The methodological differences between the studies of Boehmler (1958) and Turnbaugh et al. (1979) may account for the fact that in one study the subjects reacted differentially to severity of stuttering and in the other tended to regard stutterers as a homogeneous group.

The matter of disfluency type's influence on listener response also was addressed by Boehmler (1958). His judges tended to label sound and syllable repetitions as stuttering more often than revisions

and interjections, "regardless of rated severity." Without applying the label "stuttering," Duffy, Hunt and Giolas (1975) had five (more eclectic) groups of listeners each rate a tape recording containing either fluent speech, severe broken words, part word repetitions, prolongations, or interjections. Listener ratings were significantly worse for all the disfluent conditions than for the fluent condition on measures of speaker competence, dynamism, and delivery. No one disfluency type elicited significantly more negative responses than the others. Apparently, then, although the label "stuttering" may be applied differentially to certain types and degrees of disfluencies, adult listeners' judgements of negative personality characteristics accompany, more or less equally, speech samples containing all types and degrees of disfluencies in both children and adults.

The issue of listener reactions appears to have attracted less attention in the area of articulation/phonological disorders than in the area of fluency, perhaps because listener reactions have not usually been implicated in the etiologies of such disorders. The significance of determining the potential negative social consequences of articulation or phonological disorders would lie in their implications for intervention. Mowrer, Wahl and Doolan (1978) conducted a study in which ratings by 140 adult judges of five adult males, two of whom used a frontal lisp (/θ/ for /s/ and /ð/ for /z/), indicated that those who lisped were viewed significantly more negatively in categories of speaking ability, intelligence, education, masculinity, and friendship than those who did not lisp. Thus, there is some evidence that

negative listener attitudes exist toward some articulation disorders, at least as displayed in adult males.

B. Children's Awareness of Disfluencies and Other Speech Phenomena

The question of listeners' awareness of and negative reactions to disfluencies is of added importance when the listeners and speakers are young children. The more aware the young child is of his disfluencies, the more likely they are to develop into "stuttering" or to become a problem, according to the "diagnosogenic" theory (Johnson 1959) and the more feasible becomes direct intervention (Luper and Mulder 1964). Negative reactions from other children are likely to increase the young stutterer's awareness. The preschool child cannot reasonably be expected to report his/her perceptions of listener reactions, and he/she does not typically share in the decision-making process regarding intervention, as would an older child or an adult. Thus, those who make the decisions should be knowledgeable about potential social consequences of stuttering and other speech disorders in preschoolers.

Children's knowledge of stuttering has been shown to increase with age. Mowrer, Fairbanks and Cantor (1980) asked school-age children to define stuttering. Three-fourths of the subjects in grades six through twelve identified stuttering as a disruption of speech, whereas slightly less than half of the fourth-graders and only 12 percent of the second graders did. This lack of knowledge by young children about the label "stuttering" is supported by the findings of Culatta and Sloan (1977). They played two short samples of speech (one fluent, one disfluent) to two groups of children (first- and second-graders,

and third- and fourth-graders). Of the thirty subjects in each group, none in the younger group used the term "stuttering" in describing the samples, and eleven of the older children used the term. One-third of the first- and second-graders, however, referred to repetitions and prolongations in discussing the differences between samples, indicating that they were indeed conscious of the speech patterns. In fact, all thirty preferred the fluent sample, suggesting perhaps that all the children were aware of and reacted negatively to fluency disruptions even though they did not specifically mention the speech patterns. Within a population of young stutterers, McLelland and Cooper (1978) found that speech clinicians reported nearly half of their five- to six-year-old boys perceived themselves as stutterers.

Two studies dealing with even younger children provide evidence that preschoolers are aware of different speech flow patterns, but the social implications appear to be contradictory. Giolas and Williams (1958) evaluated kindergartners' reactions to stories read fluently, with interjections, and with repetitions, and to the adult who read with these patterns. All children heard all three patterns of speech. When asked to select the adult they would like for a teacher, they showed a significant preference for the fluent speaker. This preference cannot be generalized to peers because children may have a higher fluency standard for adults; since normal disfluencies frequently occur in the speech of preschool children (Wexler and Mysak 1982, Haynes and Hood 1977, Johnson 1959), young children may react less to disfluent peers than to disfluent adults.

The reactions of preschoolers to stuttered and nonstuttered speech in an older child was studied by Langer (1968). Each child saw a film of a nine-year-old boy telling a story with one of four speech patterns: fluent speech, mild, moderate, or severe stuttering. The children were then asked questions which were considered to fall within one of three categories: "Non-speech centered questions," "Speech-centered questions," and "Questions relating to adult evaluation of stuttered and fluent speech." The children's responses to speech-centered questions were negative significantly more often for moderate and severe stuttering samples than for the fluent sample. No other statistically significant differences were found, including for the category of non-speech centered questions which were aimed at revealing potential negative reactions to the speaker as opposed to the speech pattern. These results suggest that, although some preschoolers react unfavorably to stuttered speech in other children, there may be no concommitant social penalties. Langer's (1968) non-speech oriented questions, however, did not address behavioral intentions of the listener, which would be more likely to represent potential social penalties (Sanders 1963) than statements such as "Do you like the way the boy looks?" (Langer 1968). Moreover, studies which have involved comparisons of stimulus samples have been shown to be more likely to reveal social preferences (Weinberg 1978, Giolas and Williams 1958) than those requiring a judgement based on one sample exposure.

If children respond unfavorably to peers who stutter they may also penalize children with other speech disorders, provided they notice patterns which differ from the norm. Freeman & Sonnega (1956) asked

third- and fourth-graders to select the five best speakers in their class, the five with whom they were most friendly, and to select three classmates with each of ten traits found to be indicators of social acceptance. Children who were also in a speech correction class were compared to the others on the number of times they had been selected by the peers. Children in speech correction classes received significantly lower "speech scores" than the others, but scored essentially the same on "friendship" and "social acceptability traits." Although the speech disordered children (types of disorders were not specified) were apparently not the targets of social discrimination, they did not enjoy the same social status as those who were thought to speak well. The twenty-five children with the highest 'speech' socres received significantly higher 'friendship' and 'trait' scores. The method of this study did not preclude the possibility that the children in speech correction classes chose each other as friends, and thus had "friendship' and 'trait' scores almost as high as the others. These results indicate therefore only that those speech disordered children were not considered to be superior speakers by their normal-speaking peers.

In an attempt to investigate more directly the social status of speech disordered children, Perrin (1954) asked the following questions of 445 first- through sixth-graders: "1. What three children would you like best to play with? 2. What three children would you like best to work with? 3. What three children would you like best to have sit next to you?" Children who received 0 - 1 vote were classified as "isolates"; those receiving from two to four votes were "neglectees"; and those who had 20 or more were considered "stars." The author found that there were

approximately one-third more "isolates" and one-half again as many "neglectees" among the "speech defective" children as among the others, and there were no "stars" from the speech defective group. These results suggest that there may be negative social consequences of speech disorders in school-age children. This conclusion is weakened, however, by the fact that other variables were not controlled which may have produced the same results (i.e. characteristics concommitant to the speech disorder).

The studies discussed above show that many listeners are aware of disfluencies and other speech "differences" and consider them to be "disorders" of speech; these listeners include not only adults, but also school-age and preschool children. There is also some evidence that, among school-age children, a social stigma may be associated with speech disorders. There is no evidence that preschoolers who stutter or display other speech differences experience social penalties imposed by their peers, yet if young children are likely to form judgements as to the acceptability of certain speech phenomena, or if they already are likely to adopt the stereotypes of their culture, there would be reason to suspect that they too may have negative reactions not only to the speech disorders, but also to the children displaying those speech patterns.

C. Preschoolers' Ability to Judge Speech Phenomena and Adopt Cultural Stereotypes

Infants are thought to begin developing attitudes as soon as they begin experiencing things and thus evaluating them, however subconsciously. Foshay and Wann (1954, p. 28) wrote: "Attitudes toward

things, courses of action, people, and all the infinite number of possible referents are constantly developed in individuals as a consequence of their own evaluation of their conscious or unconscious, direct or indirect, experience with these referents." The authors maintain that attitudes can be acquired through associations of new referents with referents about which one already has attitudes (for example, smiles, parent approval, etc.). A plausible hypothesis, therefore, would seem to be that a very young child who is sensitive to playful mockery of his "baby talk" could acquire a negative attitude toward a child with a delay in phonological development, or that the preschooler who notices a mild frown on his parent's face whenever he "stutters" (even if the frown is in sympathy with the child's struggle), could come to evaluate stuttered speech negatively. That children have adopted some cultural stereotypes by about the age of four years, has been suggested by a study conducted by Kuhn, Nash and Brucken (1975). They reported that two- and three-year-olds tended to assign traditionally female roles to female paper dolls and traditionally male roles to male paper dolls. Thus the potential of preschool children to acquire the attitudes and stereotypes of adults has been documented.

The results of Langer's (1968) study, which was discussed in the previous section, have already indicated that preschoolers are able to make value judgements about speech flow characteristics, and that they do so. That this ability is extended to other verbal behaviors has been supported by the studies of Gleitman, Gleitman and Shipley (1972), deVilliers and deVilliers (1972), and Dollaghan (1981). The two- to four-year-old children in these studies demonstrated at least the

willingness (although not always with adult-like results) to judge various syntactic and semantic forms as "good" or "silly," "right" or "wrong," or "okay" or "not okay." DeVilliers and deVilliers (1972) found that children whose mean length of utterance was just greater than 4.0 morphemes, which is predictive of a chronological age of approximately 43-45 months (Miller and Chapman, cited in Miller 1981, p. 26), were able to judge incorrect sentences (semantically anomalous or partially reversed word order) as "wrong" significantly more often than they judged correct sentences to be "wrong." They were also usually able to provide an appropriate correction. These studies' results suggest that those preschoolers were able to identify speech or language patterns which differed from the norm and to judge them as acceptable or unacceptable.

III. Summary

The roles of parents and other authority figures in the development/maintenance of stuttering have been widely explored and frequently targeted for intervention, but the possible role of the preschoolers' peers has been essentially ignored. If preschoolers are involved in negatively evaluating the speech of their peers, there may be social consequences which would have implications for intervention in fluency cases and other speech disorders; e.g., whether therapy is warranted, and if so, what it should involve.

A review of the literature has shown that adults and school-age children are likely to react negatively to stuttered speech, and that

there may be social penalties for speech disordered children among their peers. The same has not yet been proven within a preschool population; the ability of young children to identify and judge speech patterns, however, and their tendency to adopt the attitudes and stereotypes of the adults around them, would seem to indicate that their interactions with the speech disordered child should be more thoroughly investigated.

CHAPTER TWO

METHODS AND PROCEDURES

I. Research Questions

This study was designed to answer the following questions about preschool children's reactions to speech disorders in simulated preschoolers:

1. Do preschoolers mention the speech patterns of puppets representing other preschoolers displaying normal speech, moderate stuttering, and a phonological delay?

2. Do preschoolers react differently on a social level to puppets representing other preschoolers displaying stuttered or phonologically delayed speech than to those with normal speech?

In order to answer these questions, preschool-age children viewed videotapes depicting puppets who spoke with either a normal, a stuttering, or a phonologically delayed speech pattern. The children were than asked to respond to questions designed to expose their awareness of those speech patterns, and their associated attitudes.

II. Subjects

The subjects for this study were forty-five preschool children between the ages of 43 and 60 months, with a mean age of 50.78 months (SD = 6.11 months). They were selected from preschools and day-care facilities in or near Missoula, Montana. Eight of eleven preschool

directors agreed to allow their children to participate in the study; three requested the distribution of permission slips to parents of eligible participants. Twelve subjects were obtained from the facilities requiring parental permission, and the remaining thirty-three from facilities not requiring parental permission. All eligible children who were present on the day the examiner was at their facility were invited to view the videotape. One eligible child was excluded at this stage because he did not wish to participate. A total of forty-six children viewed the videotape, but one was eliminated as a subject because she was unable to accurately identify which puppets were speaking on the monitor screen. Although the subjects were not a random or representative sample, they were selected to broadly characterize preschoolers.

III. Stimulus Material

Forty-five children individually viewed one of three videotaped puppet plays. Three tapes were necessary to counterbalance the potential effects of puppet role or appearance. DeVilliers and deVilliers (e.g. 1972) have successfully conducted research with young children using puppets, and the use of puppets in this study was essential because the speakers were not preschoolers. The tapes displayed three puppets in the form of young children interacting in a short scene similar to one in which a preschooler might easily find himself involved (see Appendix A for script). Each puppet used a different speech pattern, either normal, stuttered, or phonologically delayed. Each puppet used each speech pattern in one of the tapes, and no single speech pattern

was used by more than one puppet in the same tape. The speech pattern assigned to each puppet in each tape is described in Table 1.

TABLE 1

Descriptions of Speech Patterns Displayed by Individual Puppets in Three Videotaped Samples

	Tape A	Tape B	Tape C
Puppet T	Normal	Phon. Delayed	Stuttered
Puppet J	Stuttered	Normal	Phon. Delayed
Puppet R	Phon. Delayed	Stuttered	Normal

The stimuli were presented in the form of a play in order to provide the subjects with information about the context for, and representativeness of, the speech patterns involved, as recommended by Sander (1965). Sander maintained that the "assumptions concerning (a) the situation confronting the speaker, and (b) the representativeness of his displayed behavior" could influence the results of listener-reaction studies.

A. Description of Speech Patterns

The speakers using the "normal" speech pattern read the text (see Appendix A) verbatim, with no disfluencies other than the few word repetitions and unfinished phrases intrinsic to the text, and with standard American-English pronunciation.

The stuttered speech pattern consisted of simulated "stuttering" on approximately ten percent of the words spoken by the disfluent puppet. The ten percent stuttering rate is slightly more than the eight percent estimated by Darley and Spriestersbach (1978) to be typical of "moderate" stuttering. Langer (1968) found that preschoolers reacted to moderate stuttering, but not to less severe stuttering rates. Thus, a stuttering rate of ten percent was chosen on the hypothesis that it would be likely to expose any negative attitudes in preschoolers while remaining within the disfluency range typical of preschool stutterers. Johnson (1959) found that the mean rate of disfluencies including only sound, syllable and word repetitions and prolongations, was approximately eleven percent. The types of stuttering included part-word and word repetitions and prolongations, since those are typical of the disfluencies of preschool stutterers (Bloodstein 1960, Egland 1955). "Stuttered" syllables were repeated three times, which is within the typical range of repetitions per stuttering instance for both stutterers and nonstutterers, as reported by Egland (1955). The specific words on which the stuttering occurred are underlined or overscored in Appendix A.

The speech pattern involving a phonological delay consisted of a liquid simplification process (/w/ for prevocalic /r/ and /l/, vowel substitution for postvocalic /ɚ/ and /ɫ/). Prather et al. (1975) reported that by the age of 48 months, more than 50 percent of children have mastered the /r/ and /l/ phonemes. Neither the stuttered disfluencies nor the liquid simplification process were judged by this author to interfere with intelligibility. The frequency of occurrence of phoneme substitutions in the lines of each of the speakers utilizing

this pattern was between eleven percent and thirteen percent. The letters for which /w/ or a vowel was substituted are circled in the text in Appendix A.

B. Description of Speakers and Puppets

Three adult females provided the speaking voices for the three puppets. They were trained to produce each speech pattern in one puppet role, as represented in the text of Appendix A. The three hand puppets had the features of young children. They were all approximately the same size, and could be perceived as either boys or girls. Hair styles were short and the colors varied. The puppets were all wearing t-shirts and had arms that could be manipulated.

IV. Experimental Procedure

A. Group Distribution

The children selected as subjects for this study were distributed among the three experimental groups on the basis of age, setting, and sex. The distribution of ages was balanced in each group to avoid the potentially confounding effects that could be produced by having a concentration of younger children in one group and of older children in another group. In order to avoid any effects that a bias imposed by a particular preschool setting might have had, children selected from one facility were spread across groups. A balanced distribution of sexes across groups was not considered essential because Langer (1968) found no significant differences between the reactions of preschool boys and girls to stuttered speech. In order to achieve

comparable groups, however, the available males and females were divided as equally as possible among groups. A description of the characteristics of the three experimental groups may be found in Table 2.

TABLE 2

Description of Experimental Group Characteristics

	#males	#females	age range	$\bar{X}$ age	#Settings represented
Group A	7	8	42-59 months	50.8 months	8
Group B	9	6	42-60 months	50.5 months	7
Group C	8	7	42-60 months	51.0 months	7

B. Instructional Set

Before viewing the videotape, the children were individually taken to a room containing the video-equipment and were given the following information:

> "Now you're going to see some puppets on t.v. They're little boys and girls just your age. One of them has fallen down and scraped his/her (same gender as subject) knee, and they're all trying to figure out what to do. You listen very carefully, and when it's all over, I'm going to ask you some questions about the children."

C. Experimental Questions

Approximately halfway through the tape (see Appendix A), the experimenter quietly asked the children, "Can you show me the one who's

talking right now? Point to the one who is talking." The questioning continued until the children had correctly associated each speaking voice with the appropriate puppet. One child was eliminated from the study because she failed to accurately identify the speakers, which would have rendered her responses to questions five and six (at least) invalid.

After the videotape had been viewed, the tape was stopped so that the puppets remained "frozen" on the screen. The children were asked questions designed to reveal their awareness of and reactions to speech disorders in their peers. The questions were presented in the order listed below, and responses were audio-taped.

1. (a) Did you like the play? (b) Why?
2. (a) Was there anything about the play you didn't (did) like? (b) Why?
3. (a) Pick the one child you would most want to be your friend. (b) Why did you pick that one?
4. (a) Pick the child you wouldn't want very much to be your friend. (b) Why did you pick that one?
5. (a) Which child would you most want to sound like? (b) Why?
6. (a) Do you think all those children sounded okay? Did any of them have trouble talking? Who? (if appropriate) (b) How did you know?

The first two questions were open-ended in order to determine whether preschoolers independently mentioned speech patterns when referring to the play; they also had the option of mentioning speech patterns in their explanations of responses to questions three through six. The primary purpose of the third and fourth questions was to expose the children's intended social behavior toward the speech disordered children. Question number five was designed to reveal the

children's perception of the relative desirability of the speech patterns. The final question directed the children's attention to the speech behavior and required a judgement as to the adequacy of those patterns. Thus, the question of whether the subjects mentioned the various speech patterns was addressed by the comments in response to questions one through six. The question of whether the subjects reacted differently on a social level to the speech disordered than to the normal puppets was addressed by the responses to questions three through six.

D. Scoring and Treatment of the Data

The subjects' responses were recorded on individual response sheets (see Appendix B). The audiotape-recording was used to transcribe their comments verbatim. Spontaneous comments made while the child was viewing the tape also were recorded on-line at the top of the response sheet, if they pertained to the puppets' speech. On the lower portion of the response sheet the child's comments as a whole were categorized as to whether they contained any mention of speech or no mention of speech, in order to answer the first research question. Comments that related specifically to content or amount of speech were categorized as "no mention of speech." Those who did mention speech were further subdivided according to whether the mention of speech occurred spontaneously or in response to non-speech directed questions (#1-4), or in response to speech-directed questions (#5 & 6). The comments related also to the individual experimental questions were then described by marking the appropriate columns: mention of speech in general, mention of stuttering

patterns, mention of phonologically delayed pattern, mention of other (non-speech related) miscellany, and no reason given. Comments relating to the normal speech pattern were originally marked under the "general" column, but later counted separately.

The results were compiled for all the subjects, producing the number of children who did and did not mention speech, who mentioned the stuttering pattern of speech specifically, who mentioned the phonologically delayed speech specifically, who mentioned the normal speech specifically, and who mentioned speech in general. These data were then statistically treated to determine the confidence intervals at the .05 level within which the percentage of the general population could be expected to fall. Finally, the number of times each puppet was selected in response to questions three through six was tabulated for each Tape condition. The numbers were then grouped according to speech pattern across Tape conditions, resulting in the total number of times the normal, the stuttering, and the phonologically delayed puppets each were selected for each question. A chi-square test was performed on the data to determine whether there were any significant differences between groups for any of the questions.

CHAPTER THREE

RESULTS

The immediate purpose of this study was twofold: (1) to determine whether preschoolers mention the speech of other normal, stuttering, and phonologically delayed simulated preschoolers, and (2) to determine whether preschoolers react differently to their simulated peers with those disordered speech patterns than to those with normal speech. A short, videotaped play of three puppets displaying each of these speech patterns was used to elicit responses from forty-five preschoolers. The first question was addressed by a descriptive analysis of the children's responses, and the second by a comparison of responses across speech type.

I. Mention of Speech Patterns

Twelve of the forty-five preschool-age subjects (approximately 27 percent; confidence interval = 14 percent - 40 percent) mentioned, or reacted verbally to, the speech of the videotaped puppets. The speech-related comments were comprised of general references to "talking" (e.g., "I just liked the people talking."), and of specific references to speech patterns (e.g., "He stuttered a lot of times."). Comments referring specifically to content or amount of speech (e.g., "They were talking about broken legs.", "I liked what they talked.",

"...because he talked so much.") were not considered to be speech-related for the purposes of this study. The children's comments were made either spontaneously while they viewed the videotape, or as justification for their responses to the experimental questions.

Categorization of the speech-related comments was made according to the speech pattern which elicited the comments. For example, a child's mimicking of the stuttering while viewing the tape was included among the references to stuttered speech. A child's speech-related rationale (e.g., "...cuz he just talks nice.") for selecting the phonologically delayed puppet as the one he would most want to talk like was included among the references to phonologically delayed speech.

Eight of the twelve children mentioning speech patterns did so in response to at least one of the non-speech directed questions (#1-4), or spontaneously while viewing the videotape before any reference to speech was made by the examiner. The remaining four didn't mention speech until responding to speech directed questions #5 or #6. These children represented approximately eighteen percent and nine percent of the total group, respectively. The speech of the normal-speaking puppets was mentioned four times by three children (one child mentioned that puppet's speech in response to two questions), that of the stuttering puppets fifteen times by nine children, that of the phonologically delayed puppets six times by five children, and speech in general without reference to a specific puppet three times by three children. A summary of the number of times each speech pattern was mentioned spontaneously or in response to each experimental question can be found in Table 3.

TABLE 3

COMMENTS PERTAINING TO EACH SPEECH PATTERN

Number of times the speech patterns of the normal, stuttering, or phonologically delayed puppets were mentioned spontaneously or in response to experimental questions by twelve preschoolers.

Stimulus	Normal	Stuttered	Phonologically delayed	General	Total # Incidences	N of Ss
Spontaneous	0	5	0	0	5	5
Q. 1 (like play?)	0	1	0	3	4	4
Q. 2 (anything didn't like?)	0	0	0	0	0	0
Q. 3 (which one friend?)	2	2	0	0	4	3
Q. 4 (which not friend?)	0	2	1	0	3	2
Q. 5 (talk like?)	2	1	1	0	4	4
Q. 6 (hard time talking?)	0	4	4	0	8	5
# of Total Incidences	4	15	6	3		
N of Ss	4	9	5	3		12

These speech-related comments were classified as positive, negative, or non-judgemental. Responses to experimental questions #1, #3, and #5, and/or an expressed liking for the speech pattern were evaluated to be of a positive nature. Responses to questions #4 and #6, and/or mimicking of a speech pattern were evaluated to be of a negative nature. One statement ("That one stutters.", made spontaneously) was classified as non-judgemental. Table 4 summarizes the number of responses to each speech pattern that were classified as positive, negative, or non-judgemental responses. Contrary to what might be expected, not all references to the stuttered and phonologically-delayed speech patterns were of a negative nature; approximately one-third were positive, as were all general speech references and references to the normal speech. A list of all the children's comments, recorded verbatim, can be found in Appendix C, along with the classifications used by the examiner.

TABLE 4

VERBAL RESPONSES TO VARIOUS SPEECH PATTERNS
CLASSIFIED AS POSITIVE, NEGATIVE OR NON-JUDGEMENTAL

Classification	Normal	Stuttered	Phonologically delayed	General
Positive	4	4	1	3
Negative	0	10	5	0
Non-judgemental	0	1	0	0

II. Differential Reactions to Puppets Displaying Various Speech Patterns

In order to determine whether the preschool-age subjects reacted differentially to the puppets on the basis of speech pattern, they were asked to select the puppet (a) they would most want to be their friend (experimental question #3); (b) they would not want to be their friend (experimental question #4); and (c) they would most want to talk like (experimental question #5).

Before establishing any obtained differences in the children's selections on the basis of speech pattern, it was necessary to eliminate puppet role preferences as a confounding variable. The number of times each role was selected by the forty-five preschoolers in response to experimental questions #3, 4, and 5, and the results of chi-square tests comparing role preferences across speech patterns can be found in Table 5. No statistical differences were found among the puppet roles for any of the questions.

Chi square tests comparing speech pattern preferences across roles indicated that only the results to question #4 (puppet least preferred as a friend) were statistically significant. The children selected the normal-speaking puppets as the ones they would not want for a friend significantly more often ($p < .05$) than either the stuttering or phonologically delayed puppets. Although no other statistical differences were obtained, the observation was made that nearly half of the children selected the stuttering puppets as the ones like whom they would most want to talk (question #5). The number of times the normal, stuttering,

TABLE 5

PUPPET ROLE PREFERENCE ACROSS SPEECH PATTERNS

Number of times each role was selected by 45 preschoolers in response to experimental questions #3, 4, and 5, and corresponding X^2.

Stimulus	Puppet R	Puppet T	Puppet J	X^2	P
Q. 3 (which one friend?)	13	18	14	0.92	>.20
Q. 4 (which not friend?)	14	14	17	0.39	>.20
Q. 5 (talk like?)	14	16	15	$0.1\bar{3}$	>.20

and phonologically delayed puppets were selected in response to each of experimental questions #3, 4, and 5 are summarized in Table 6, with the X^2 values for each question.

In response to experimental question #6 ("Did all those puppets sound okay? Did any of them have a hard time, or have trouble, talking? Who did? How did you know?"), all but one child initially said the puppets sounded okay. Twenty-seven of the forty-five said that one or more of the puppets had trouble talking, in response to the second part of the question. The normal puppets were identified by thirteen of the twenty-seven as having a hard time talking, the stuttering puppets fifteen times, and the phonologically delayed puppets thirteen times.

TABLE 6

SPEECH PATTERN PREFERENCE ACROSS PUPPET ROLES

Number of times each speech pattern was selected by forty-five preschoolers in response to experimental questions #3, 4 and 5, and corresponding X^2.

Stimulus	Normal	Stuttered	Phonologically delayed	X^2	P
Q. 3 (which one friend?)	13	15	17	$0.5\bar{3}$	>.20
Q. 4 (which not friend/)	23	11	11	$6.3\bar{9}$	<.05
Q. 5 (talk like?)	13	21	11	$3.7\bar{3}$	<.20

Table 7 shows the number of children who identified each puppet or combination of puppets as having a hard time talking. From an adult perspective, identification of the stuttering and phonologically delayed puppets would be considered "correct" responses. Therefore, the responses of children who selected one or both of these, but no other, could comprise a category of correct responses. The responses of those children who selected the normal-speaking puppet, along or in combination with any other puppet, or who said that none of the puppets had a hard time talking, could comprise a category of incorrect responses. Since three-eighths of the categories were correct, and five-eighths

TABLE 7

PUPPETS IDENTIFIED AS SPEECH-DISORDERED BY PRESCHOOLERS WHO MENTIONED SPEECH VERSUS THOSE WHO DID NOT MENTION SPEECH

Number of preschoolers in each group who identified each puppet or combination of puppets as having a hard time talking in response to experimental question #6. Puppets are coded as N = normal, S = stuttering, P = phonologically delayed.

Puppets	Total Group	Group that mentioned speech	Group that did not mention speech
N only	7	0	7
N & S	1	0	1
N & P	0	0	0
N, S & P	5	0	5
S only	6	2	4
P only	5	2	3
S & P	3	3	0
None	18	5	13
Total	45	12	33

incorrect, the expected number of children falling into each category would be three-eighths and five-eighths of the total number (45), respectively if responses were due only to chance. The X^2 value for the number of incorrect and correct responses compared to expected frequencies was not significant ($X^2 = 0.78$, $df = 1$, $p > 0.20$). A comparison of the responses of the group of children who mentioned speech to those of the children who did not mention speech, however, indicated that a significantly greater proportion in the former group were correct ($X^2 = 5.739$, $df = 1$, $p < 0.02$). The number of children in each group who responded correctly and incorrectly, along with the expected numbers, can be seen in Table 8.

TABLE 8

CORRECT VS. INCORRECT IDENTIFICATION OF DISORDERED SPEECH PATTERNS BY 45 PRESCHOOLERS

A comparison of correct vs. incorrect responses to experimental question #6 by two groups of children. $X^2 = 5.739$, $df = 1$, $p < 0.02$.

	Group that Mentioned Speech	Group that did Not Mention Speech	Totals
Correct Answers	Observed = 7 (Expected = 3.7)	Observed = 7 (Expected = 10.3)	14
Incorrect Answers	Observed = 5 (Expected = 8.3)	Observed = 26 (Expected = 22.7)	31
Totals	12	33	45=N

III. Summary

One purpose of this study was to determine whether puppets portraying preschoolers and displaying various simulated speech patterns would evoke comment on those patterns by preschool-age children. The other purpose was to determine whether those children reacted differentially to the puppets on the basis of their speech patterns. The results indicated that twelve of the forty-five subjects reacted verbally to one or more of the puppets' speech patterns, and that significant differences ($p < 0.05$) in the subjects' reactions to the normal vs. stuttered and phonologically delayed speech patterns were obtained on one measure (the normal-speaking puppet was chosen most often as the one the children did not want for a friend). Although not statistically significant, it was observed that nearly half of the children selected the stuttering puppet as the one like whom they would most want to talk. A significantly greater proportion ($p < 0.02$) of the children in the group who mentioned speech patterns correctly identified puppets who had a hard time talking than did those in the group who did not mention speech patterns.

CHAPTER FOUR

DISCUSSION

Because of their potential relevance to theoretical and clinical issues in stuttering and other speech disorders, the present study investigated preschoolers' reactions to simulated normal, stuttered, and phonologically delayed speech in puppets portraying other preschoolers. Conclusions that can be drawn from the information obtained in the investigation are discussed below.

I. Verbal Reactions to Speech Patterns

The results of this study indicated that approximately twenty-seven percent (12/45) of the experimental population (corresponding to between fourteen percent and forty percent of the general population) of preschool children (a) attended to the present speech patterns, (b) made some judgement regarding them, (c) were able to react verbally to these patterns to some extent, and (d) were sufficiently motivated to do so. Eight of the twelve children reacted to the speech patterns prior to presentation of the speech-directed questions by the examiner, which is an indication that the speech was a salient aspect of the videotape to those children. Although the other four children apparently did not find the speech worthy of spontaneous comment, they revealed their awareness of it by their responses to the speech-directed questions.

Thrity-three of the forty-five subjects gave no verbal indication that they were aware of the puppets' speech patterns, even when directly questioned about them. One cannot conclude from this that the remaining were unaware of the various speech patterns because of the four conditions that were prerequisites to obtaining a verbal reaction: (a) the children may have attended to the speech pattern but (b) made no judgement about them, (c) were unable to verbalize their reactions and/or (d) did not have sufficient reason to do so.

II. Non-verbal Reactions to Speech Patterns

The children's responses to experimental question #6 ("Did any of them have a hard time talking? Who?") are probably the best measure of the speech patterns used in the study. Unlike the measure utilizing their comments, this measure did not require the children to verbalize their reactions; they simply had to point. All children willingly responded to the question, either by pointing to one or more of the puppets or by saying "no" to the initial part of the question (i.e., no one had a hard time). If the children had attended to the speech patterns and judged them to be deviant, they should have been able to respond "correctly" to question #6. In fact, as a group, their responses appeared to be random, the number of correct and incorrect responses not differing significantly from chance expectancies. This finding is inconsistent with the results of Langer's (1968) study, in which significantly more preschoolers identified a child simulating moderate stuttering as having a hard time talking than the same child simulating normal speech. One explanation for the discrepancy in results could be

the difference in the stimulus material. It is possible that the preschoolers expected a higher degree of fluency from the older child in Langer's (1968) study than from presumed same-age peers, or a higher degree of fluency from a child telling a story than from one interacting with other children. The possibility also exists that the present subjects did not view puppets as they would real peers. Thus, comparisons with "real children" studies or generalization to real situations may not be valid. The degree of disfluency in each study, although similar, was not identical to the other. The number of repetitions per 100 words spoken was slightly higher in the present study than in Langer's (1968), but the latter included "some" associated behaviors and this investigator did not. Another possible explanation for the discrepancy in results could be the differences in the experimental populations. Langer (1968) reported that his subjects represented children from the upper middle class, whereas subjects in the present study represented children from a wider range of socio-economic levels. Perhaps children from the upper middle class are typically more knowledgeable about or attend more to speech patterns than children from a different socio-economic population. Although data on socio-economic status of the subjects' families were not collected, the children who did mention the speech patterns in the pesent study represented six of the eight participating preschool/day-care environments, situated in socio-economically varied areas of town; thus it is not likely that socio-economic environment was a factor in the speech-knowledge of this population.

An examination of patterns within subgroups suggests other factors involved in preschoolers, responses. There is some evidence that the group of children that mentioned speech was different in the quality (if not in the actuality) of their speech awareness from the group that did not mention speech. This difference can be seen in the responses to experimental question #6 ("Did any of the children have trouble talking? Who did?") A comparison of the two groups of children showed that significantly more children from the group that mentioned speech gave correct responses than did those from the group that did not mention speech. This indicates that the former group was, at least, more adult-like in their judgements of the speech patterns than was the latter. Within the group of children who mentioned speech, the mean age of those who gave correct responses to question #6 was 52.7 months; the mean age of those who gave incorrect responses was 48.4 months ($U = 6$; $p = .037$). This discrepancy may be an indication that the skills required to correctly respond to this question are developmental in nature.

The hypothesis that preschool children may react negatively to stuttered speech or a mild phonological delay in their peers, which may therefore result in social penalties, was not supported by the results of this study. Langer (1968) also found that preschoolers did not react negatively to stuttered speech in responses to non-speech centered questions of a social nature. A comparison of the children's reactions in the present study to the normal-speaking, stuttering, and phonologically delayed puppets in various contexts indicated that not only were the stuttering and phonologically delayed puppets not the objects of more negative reactions than the other puppets, but the stuttering

puppet may even have been viewed more favorably. The normal-speaking puppet, in contrast, appeared to occupy a position of unpopularity.

The three experimental questions intended to reveal the puppets' social status attributable to the role of speech pattern produced unexpected responses. Question #3 (puppet most preferred as friend) resulted in no significant differences between puppets, in spite of the fact that the stimulus material conformed to Sander's (1963, 1965) advice for obtaining valid reactions from subjects. Although differences in puppet "ratings" were noted for questions #4 and possibly #5, the reactions to the stuttering and phonologically delayed puppets were surprisingly positive. Since previous studies (Culatta and Sloan 1977, Giolas and Williams 1958) have shown that older children have negative reactions to stuttered speech in live subjects, one can hypothesize either that the formation of those negative attitudes is a developmental process which is not yet generally established before five years of age, that preschoolers do not demand the same degree of fluency from their peers as they do from older people, or that the use of puppets influenced their responses to the speech patterns.

The fact that the normal-speaking puppet was chosen significantly more often than either the stuttering or the phonologically delayed puppet as the one least preferred as a friend (question #4) is rather puzzling. Although this relative unpopularity was not apparent from the responses to question #3 (puppet most preferred as friend), children who may have rejected the normal-speaking puppet still had two more puppets to choose from, and thus the division of choices may have obscured a potentially poorer rating of the normal speaker. One

possible explanation might be that this puppet's lack of attractiveness was due to its comparable lack of novelty for the subjects. Object novelty has been demonstrated (Valenti and Witryol 1982, Bradbury and Pilichon 1981) to positively influence children's preferences for those objects; perhaps this novelty-attractiveness for children can be extended to speech stimuli. The tendency (if it was real) for the children to want to talk like the stuttering puppet (in response to experimental question #5) may also be explained by novelty-attractiveness.

Whatever the reason for the unpopularity of the normal puppet and the tendency of the children to say they wanted to talk like the stuttering puppet, the differential reactions to the puppets belie the otherwise apparent lack of awareness of speech patterns, based on the children's comments and responses to experimental question #6 (hard time talking). Moreover, it is evident that their intended social preferences were, at least under some circumstances, influenced by speech patterns.

III. Conclusions/Summary

Nunnally (1967) claimed that "self-report offers the most valid approach currently available" to the measurement of attitudes, but that the results are "limited to what the individual knows about his attitudes and is willing to relate." (p. 517). This author would add that, especially when dealing with young children, the individual's ability to verbally express his attitudes may be another limitation. Insofar as the children who served as subjects for this study reflected their true attitudes by their responses, the results indicated that a minority of preschoolers (a) attended to the various speech patterns, (b) made

some judgement regarding them, (c) found them worthy of verbal comment, and (d) were able to verbalize their observations. These children held more adult-like attitudes toward the speech patterns than the others who did not mention the speech in that they were more often able to correctly identify the deviant patterns. By attempting to circumvent the potential limitations of self-knowledge about attitudes and verbal abilities, it became evident that, in some situations, the group as a whole did indeed react to the speech patterns and was influenced by them in making social choices. There is no evidence that preschoolers in general react negatively on a social level (responses to Experimental Questions #3-5) to stuttered or phonologically delayed speech; the "speech-knowledgeable" group was too small to provide data which could be statistically analyzed for this question.

IV. Some Theoretical and Clinical Implications

The results of this study indicate that some preschoolers may react to stuttered and phonologically delayed speech in their peers. Clinicians who accept the hypothesis that listener reactions may influence the development of stuttering should therefore investigate the potential role that the young stutterer's peers play. Even though in this study the group's reactions as a whole did not appear to be negative, their differential attitudes toward the stutterer may increase the child's awareness of his/her disorder, which would be considered undesirable by many professionals (Eisenson and Ogilvie 1963; Bloodstein 1975, Van Riper 1973, Gregory and Hill 1980, Starkweather 1980). Moreover, the social preferences of at least two of the subjects were definitely determined

by the puppets' speech patterns, the speech-disordered puppets being evaluated negatively. One such listener in the speech-disordered child's environment may be sufficient cause for concern, just as one parent's negative reaction is typically considered undesirable. If it is likely that the preschool stutterer who is exposed to other preschoolers will be made aware of his speech pattern, perhaps intervention should deal directly and openly with the stuttering behavior.

Future research should investigate the attitudes and behaviors of the "speech-knowledgeable" preschool population, and the influence they exert over their peers. This study provided no evidence that these children did not react negatively on a social level to the speech patterns they mentioned, the sample size being so small. The majority (but not all) of the comments made about the disordered speech were of a negative nature, however, and these children tended to perceive it as a manifestation of the speakers' difficulty in talking. If they do indeed socially penalize the speech-disordered children, and perhaps influence others to do the same, the effects on both the stuttering and phonologically delayed child could be far more detrimental than were suggested by the results of this study.

REFERENCES

Adams, M. R. The young stutterer: Diagnosis, treatment and assessment of progress. In Wm. Perkins, (Ed), Seminars in Speech, Language and Hearing: Strategies in Stuttering Therapy, NY: Thieme-Stratton Inc., 1980, 1, 289-299.

Andrews, G., Craig, A., Feyer, A.M., Hoddinott, S., Howie, P., and Neilson, M. Stuttering: A review of research findings and theories circa 1982. Journal of Speech and Hearing Disorders, 1983, 48, 226-246.

Beasley, J. Relationship of parental attitudes to development of speech problems. Journal of Speech and Hearing Research, 1956, 21, 317-321.

Bloodstein, O. The development of stuttering: II. Developmental phases. Journal of Speech and Hearing Disorders, 1960, 25, 366-376.

Bloodstein, O. A Handbook on Stuttering. Chicago, IL: National Easter Seal Society for Crippled Children and Adults, 1975.

Boehmler, R. M. Listener responses to non-fluencies Journal of Speech and Hearing Research, 1958, 1, 132-141.

Bradbury, H. and Plichon, C. The relative weakness of novelty in children's choices. The Journal of Genetic Psychology, 1981, 139, 233-244.

Carter, E. T., and Buck, M. Prognostic testing for functional articulation disorders among children in the first grade. Journal of Speech and Hearing Disorders, 1958, 23, 124-133.

Culatta, R., and Sloan, A. The acquisition of the label "stuttering" by primary level school children. Journal of Fluency Disorders, 1977, 2, 29-34.

Darley, F. L., and Spriestersbach, D. C. Diagnostic Methods in Speech Pathology (2nd ed.). NY: Harper and Row, Publishers, 1978.

deVilliers, P.A., and deVilliers, J. G. Early judgements of semantic and syntactic acceptability by children. Journal of Psycholinguistic Research, 1972, 1, 299-310.

Dollaghan, C.A. Developmental changes in children's awareness of some verb propositional schemata. University of Wisconsin-Madison, unpublished doctoral dissertation, 1981.

Duffy, R. J., Hunt, M. F., and Giolas, T. G. Effects of four types of disfluency on listener reactions. Folia Phoniatrica, 1975, 27, 106-115.

Egland, G. O. Repetitions and prolongations in the speech of stuttering and nonstuttering children. In W. Johnson and R. R. Leutenegger (Eds)., Stuttering in Children and Adults, Minnesota: University of Minnesota Press, 1955, 181-188.

Eisenson, J., and Ogilvie, M. Speech Correction in the Schools, NY: The Macmillan Company, 1963.

Foshay, A. W., and Wann, K. D. Children's Social Values, NY: Teachers College, Columbia University, 1954.

Freeman, G. G., and Sonnega, J. A. Peer evaluation of children in speech correction class. Journal of Speech and Hearing Disorders, 1956, 21, 179-182.

Giolas, T. G., and Williams, D. E. Children's reactions to nonfluencies in adult speech. Journal of Speech and Hearing Research, 1958, 1, 86-93.

Gleitman, L.R., Gleitman, H., and Shipley, E. F. The emergence of the child as grammarian. Cognition, 1972, 1, 137-164.

Gregory, H. H., and Hill, D. Stuttering therapy for children. In Wm. Perkins (Ed.), Seminars in Speech, Language and Hearing: Strategies in Stuttering Therapy, NY: Thieme-Stratton Inc., 1980, 1, 351-363.

Haynes, W. O., and Hood, S. B. Language and disfluency variables in normal speaking children from discrete chronological age groups. Journal of Fluency Disorders, 1977, 2, 57-74.

Johnson, W. A study of the onset and development of stuttering. In W. Johnson and R. R. Leutnegger (Eds), Stuttering in Children and Adults, Minnesota: University of Minnesota Press, 1955, 37-73.

Johnson, W. People in Quandaries: The Semantics of Personal Adjustment. NY: Harper & Brothers, 1946.

Johnson, W. Stuttering. In W. Johnson and D. Moeller (Eds.), Speech Handicapped School Children (3rd ed.), NY: Harper & Row, Publishers, 1967, 229-329.

Johnson, W., and Associates. The Onset of Stuttering. Minneapolis, Minnesota: University of Minnesota Press, 1959.

Langer, R. M. A clinical study of the reactions of preschool children to stuttered and non-stuttered speech in another child. Evanston, IL: unpublished doctoral dissertation, Northwestern University (University Microfilms International cat. No: 6906956). 1968.

Luper, H., and Mulder, R. Stuttering: Therapy for Children. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1964.

McLelland, J.K., and Cooper, E. B. Fluency-related behaviors and attitudes of 178 young stutterers. Journal of Fluency Disorders, 1978, 3, 243-263.

Miller, J. F. Assessing Language Production in Children. Baltimore, MD: University Park Press, 1981.

Mowrer, D. D., Fairbanks, C., and Cantor, A. B. How school-aged students define stuttering and stammering. Journal of Fluency Disorders, 1980, 5, 331-343.

Mowrer, D. E., Wahl, P., and Doolan, S. J. "Effect of Lisping on Audience Evaluation of Male Speakers." Journal of Speech and Hearing Disorders, 1978, 43, 140-148.

Nunnally, J. C. Psychometric Theory. NY: McGraw-Hill, Inc. 1967, 514-558.

Perrin, E. H. The social position of the speech defective child. Journal of Speech and Hearing Disorders, 1954, 19, 250-252.

Prather, E. M., Hedrick, D. L., and Kern, C. A. Articulation development in children aged two to four years. Journal of Speech and Hearing Disorders, 1975, 40, 179-191.

Sander, E. K. Assessing cultural speech fluency expectations. ASHA, 1963, 5, 619-621.

Sander, E. K. Comments on investigating listener reaction to speech disfluency. Journal of Speech and Hearing Disorders, 1965, 30, 159-165.

Shine, R. E. Direct management of the beginning stutterer. In Wm. Perkins (Ed.), Seminars in Speech, Language and Hearing: Strategies in Stuttering Therapy, NY: Thieme-Stratton Inc., 1980, 1, 339-350.

Starkweather, C. W. A multiprocess behavioral approach to stuttering therapy. In Wm. Perkins (Ed.), Seminars in Speech, Language and Hearing: Strategies in Stuttering Therapy, NY: Thieme-Stratton Inc., 1980, 1, 327-337.

Turnbaugh, K. R., Guitar, B. E., and Hoffman, P. R. Speech clinician's attribution of personality traits as a function of stuttering severity. Journal of Speech and Hearing Research, 1979, 22, 37-45.

Valenti, S. S., and Witryol, S. L. The effects of short-term novelty on children's preferences for incentive objects. Genetic Psychology Monographs, 1982, 105, 155-178.

Van Riper, C. The Treatment of Stuttering. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1973.

Van Riper, C., and Erickson, R. A predictive screening test of articulation. Journal of Speech and Hearing Disorders, 1969, 34, 214-219.

Weinberg, N. Preschool children's perceptions of orthopedic disability. Rehabilitation Counseling Bulletin, 1978, 21, 183-189.

Wexler, K. B., and Mysak, E. D. Disfluency characteristics of 2-, 4-, and 6-year-old males. Journal of Fluency Disorders, 1982, 7, 37-46.

Wingate, M. E. Stuttering Theory and Treatment. NY: Irvington Publishers, Inc., 1976.

Woods, C. L. Does the stigma shape the stutterer? Journal of Communication Disorders, 1978, 11, 483-487.

Yairi, E., and Williams, D. E. Speech clinician's stereotypes of elementary-school boys who stutter. Journal of Communication Disorders, 1970, 3, 161-170.

APPENDIX A

STIMULUS MATERIAL SCRIPT*

Text adapted from "First Aid First" by Dorothy Deming, in S. E. Kamerman (Ed.) Little Plays for Little Players.

Setting: The school playground
At Rise: Terry runs in, gets about half way across stage and falls.

T: aou - aou - that hurt! Ouch, that really hurt! I guess I've cracked it - I guess I'll be lame for life - I guess --

(Enter other two puppets)

R: Oops! What's the matter, Terry? Hurt yourself?

T: Oh - oh - my knee!

J: Let's see it. Did you trip?

T: Yes, right down hard, bump on my knee. Is it bleeding?

J: No, but you have scraped off some of the skin. You'll have a big bruise - all green, yellow and blue - Pretty! Try bending it. That hurt?

T: Not too much, (Starts to feel top of knee with finger)

R. No.no - don't touch the broken skin. Your hands are really dirty.

T: So are yours. What difference does it make?

R: I was very careful not to touch the broken skin.

J: If there's a lot of dirt on your hands, you'll probably get an infection.

T: An infection? I thought that was from rusty nails. There are no nails here.

R: The dirt on the playground and our dirty hands might carry an infection through your broken skin, too. Remember, I had an infected thumb from a cut, that's the reason I know all about infections.

J: You ought to have that knee cleaned up real good and a bandage put over the scraped place. Miss Reed will fix it for you.

(Interrupt)

R: Have it fixed right away, too. That was the trouble with my thumb, I didn't do anything about it, left it uncovered, then three days later - ouch! I've learned my lesson.

J: I'll take care of it! I'll cover it right away with my handerchief.

T: Oh, don't use a handkerchief. It's probably full of germs.

J: Germs? Where? I don't see any. What are they, anyway?

R: I don't think you can see them, but I don't know what they are, exactly.

T: You can't see them, except with a microscope. They carry diseases.

J: Like colds and measles?

T: Yes, but those germs spread from person to person, and these are the kind you get when something dirty touches broken skin.

R: Well, I guess you'd better go in and get that knee tended to. You don't want any germs.

J: That's right, first aid first. You should be more careful, and not be in such a hurry so you don't scrape your skin.

R: My goodness, you sound just like a doctor.

J. Of course; I'm going to be a doctor when I grow up.

T: Well, I'm going to be a dancer, so I hope my knee will be all right.

puppet	# words spoken (phonemes)	phoneme substitutions	# repetitions	# prolongations
T	121 (383)	12.5%	10	2
R	137 (435)	11.3%	12	1
J	134 (415)	12.5%	11	2

* Phonemes for which substitutions occur are circled; repetitions are underlined; prolongations are overscored.

APPENDIX B

RESPONSE RECORD FORM

Preschool_____ Tape_____
Age _____
Sex _____

Experimental Question #	Response (part a)	Comments (part b)
1.		
2.		
3.		
4.		
5.		
6.		

COMMENTS:

MENTION OF SPEECH	
Qs 1-4	Qs 5 & 6
_____	_____

NO MENTION OF SPEECH
_____

Question	Speech/ general	Stuttering	Phonological delay	Other misc.	No Reason
1.					
2.					
3.					
4.					
5.					
6.					

APPENDIX C

RESPONSES TO PUPPETS

I. Spontaneous comments made during viewing of videotape:

non - "That one stutters."
neg - child corrected stuttered "person to person" and laughed
pos - "I like how they talk." (after stuttered speech)
neg - "They don't know how to talk right. baba." (after stuttered speech)
neg - "babababroken" (imitated stuttered speech throughout)

non = non-judgemental neg = negative pos = positive

II. Responses to Question 1: Why did you like the play?

Speech	Content	Roles/Appearances
- because they talked in stutters	-they were talking about broken legs, falling down.	-because the puppets are nice
-I liked the talking.	-cuz it's funny, when they came up.	-the kids
-I liked how they talked.	-because it was funny.	-the childrens
+I just liked the people talking.	+What they talked.	-cuz I liked to do that, play the puppets.
	-cuz she scraped her knee.	-I like puppets.
	-I though they were funny.	-Because they talked so much.
	-Because I haven't seen it.	-cuz I liked the puppets.
	-I saw puppet shows a lot & I haven't never saw this one.	

Miscellaneous

-because I'm three years old.
-we had it on our t.v., too.

Note: a - preceding a comment indicates that it was the only one made by that child in response to a question; a + preceding the comment indicates that the child made more than one comment.

III. Responses to Question 2: Was there anything about the play you didn't like?

Speech	Content	Puppets' Roles, etc.	Other	#No
	-when the little girl scraped her knee. -their talking; they said "don't hurry so you won't scrape your skin again." -when he falled on his knee. -he scraped his knee. -when this one cut his knee. -when he bumped his knee. -that the kid scraped his knee.	-the kids are too mean. -the kinds of clothes he has. -their pants -(pointed to normal puppet) -(pointed to phonol. delayed puppet) -the skin	-the lines (in backdrop) -the swings (in backdrop)	30

IV. Responses to Question 3: Why did you pick that one (to be your friend?)

Speech	Role, Appearance	Miscellaneous	#N/R
NORMAL			
-it talked better *because he doesn't stutter	-cuz he has short hair -she has blonde hair -because she's going to be a doctor -he talked so much		7
STUTTERER			
-I liked how he talked *(indirectly from above, normal puppet "doesn't stutter", evaluated as negative comment)	-cuz it looks prettier -that one with the stripes -because he played so hard -I liked her hair	-just cuz I have a mommy who works at Bonner	9
PHON. DEL.			
	-she's like my sister -I like her face -cuz he's so funny, when he came up first, he tripped -she looks cute	-because I have a Mickey Mouse	12

V. Responses to Question 4: Why did you pick that one (to not be your friend)?

Speech	Role, Appearance	Miscellaneous	N/R
NORMAL	-I don't like her hair -he's so funny -cuz she got hurt -cuz it was asking stuff about this one -because he had dirt on his fingers -because he bumped his knee	-because I can see some scratches and foam, too dark	16
STUTTERER -because he stuttered a lot of times +(this lady didn't talk good)	-his hair comes to his cheeks -he's too mean		8
PHON. DEL. +cuz that lady didn't talk good & this lady (S) didn't talk good.	-I don't like his hair -because he scraped his knee	-she was an extra friend	7

VI. Responses to Question 5: Which one would you most want to talk like?

Speech	Role, Appearance	Miscellaneous	N/R
NORMAL -I liked how he talks -cuz she has a good voice	-cuz that girl's gonna be a dancer and also when they talked the voice comes up -she's going to be a doctor	-cuz I don't know her	8
STUTTERER -I like her talking	-because he looks funny -cuz she looks a lot prettier talking -cuz this one has a broken leg -because he talked so much	-cuz I'm growing up	15
PHON. DEL. -cuz he just talks nice		-cuz I have a choo-choo train pants	9

VII. Responses to Question 6: Did any of the children have trouble talking? How did you know? (Subjects selected puppets in whose columns a mark appears; N/R stands for "no reason given").

S #	N comments	S comments	P comments
1			-talked crazy, like a horse
2		+ she stuttered	+didn't talk right
3		- N/R	
4		+ he had a long time talking	+he had a long time talking
5		+they have silly talks	+(they have silly talks)
6			-I just know
7		-he went like this "uh, uh, uh", he talked like that	
8			-because he hit his knee
9		-N/R	
10	+N/R	+N/R	+N/R
11	-cuz I heard him, I don't know		
12		-because she scraped her knee	
13	+cuz I like those girls	+(cuz I like those girls)	
14	+N/R	+N/R	+N/R
15		-he had a hard time tripping	
16			-N/R
17	+ N/R	+ N/R	+ N/R
18	-because it was talking about this one		
19	-because he had dirt on his fingers		
20	- N/R		

VII. (continued)

S #	N comments	S comments	P comments
21	- N/R		
22	+ N/R	+ N/R	+ N/R
23	+ N/R	+ N/R	+ N/R
24		- N/R	
25			- N/R
26	-because he didn't talk so much		
27	- N/R		