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AN ABSTRACT OF THE THESIS OF Prudence Ann Bowers for the Master of Science in Speech Communication: Speech and Hearing Sciences presented May 31, 1991.

Title: Indirect Intervention for Preschool Stutterers

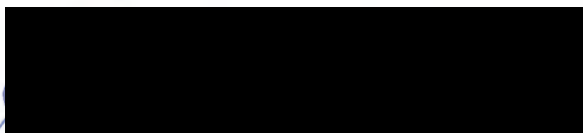
APPROVED BY THE MEMBERS OF THE THESIS COMMITTEE:



Robert L. Casteel, Chair



Mary T. Withers



Gerald D. Guthrie

This study investigated the advisability of utilizing parents to provide treatment for their dysfluent preschoolers. It involved the development, implementation and evaluation of a specific treatment program involving indirect language stimulation techniques. The primary question asked was whether or not parents can be successful in significantly reducing or eliminating dysfluent speech in their children. The secondary question was whether or not parents can be trained successfully to provide treatment.

Four children and their mothers were involved in the study. The four children were determined to be incipient stutterers rather than having normal nonfluencies by using the criteria set up by Adams (1977). The mother-child dyad was videotaped in a play situation for 20 minutes before the training period began. Then the mothers were trained to use specific language stimulation techniques which encouraged positive and neutral statements and discouraged negative statements, such as commands and questions. They used these techniques once each day for six weeks during a 30-minute session alone with the child. In order to compensate for the possible positive effect of spending time alone with the child, a second six-week period was spent simply reading to the child and not interacting in a personal way. The mothers' comments were analyzed before treatment began and after each six week period. The Stuttering Severity Instrument (SSI), (Riley and Riley, 1980), was applied to evaluate the child's speech samples during the initial session and each six week period. A follow-up session was videotaped six months after treatment ended.

The data were analyzed by comparing individual SSI scores and percentages. Jack, Steve and Sophia showed impressive improvement in their fluent speech following the treatment period and at the follow-up session. Ross showed no improvement after the treatment period, but showed some improvement after six months.

The answer to the primary question whether the children's stuttering behavior is improved by the parent treatment program is not entirely affirmative. Although three of the children did make meaningful improvement in their speech, one child in the study did not, at least not until six months after the study. The secondary question regarding the ability of the parents to learn the treatment program is answered affirmatively as a result of analyses of the mother's conversation after treatment

sessions. The degree of change from negative statements and questions to positive statements ranged from 26% to 68% from pretreatment to posttreatment sessions.

The results of this investigation indicate that some reservations exist in considering a single treatment paradigm such as indirect language stimulation techniques. Although there may be some merit in using ILS in some situations, it seems apparent that factors other than the verbal interaction between caregivers and the child must be considered when adopting a plan for treatment and when choosing indirect over direct intervention.

**INDIRECT INTERVENTION FOR
PRESCHOOL STUTTERERS**

by

PRUDENCE ANN BOWERS

A thesis submitted in partial fulfillment of the
requirements for the degree of

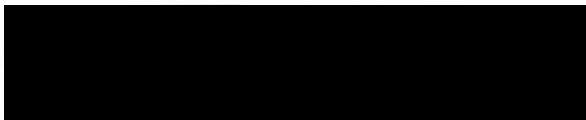
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in
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SPEECH AND HEARING SCIENCES**

Portland State University

1991

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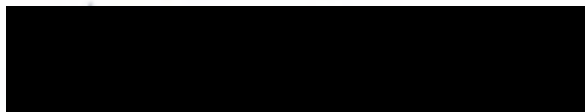
The members of the Committee approve the thesis of Prudence Ann Bowers
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Robert L. Casteel, Chair

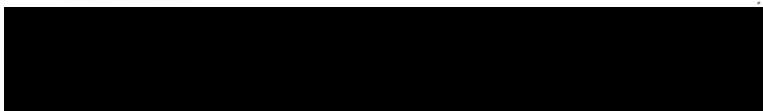


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I wish to thank my children, Jenny, Kenyon, Jeff, Steve, and Jon (plus Scott and Cyndi) for their enthusiastic encouragement and "Go For It!" attitude.

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CHAPTER I

INTRODUCTION AND STATEMENT OF PURPOSE

INTRODUCTION

This research is concerned with the capability of an indirect intervention involving parents to improve the fluency of pre-school children. Although most speech-language pathologists agree that it is highly advantageous and appropriate to involve parents in the treatment of pre-school children, the research documenting the effectiveness of parent training is inadequate (Fey, 1986; Schumaker & Sherman, 1978). It appears that more research needs to be done with careful controls and specific designs and goals. In order to encourage clinicians to implement parent training programs, it is necessary to devise simple and effective methods for parents to use.

Involving parents in treating their children is not a new concept. Parents have been involved in language training and other behavioral programs for a long time (Fey, 1986). It is logical to involve parents in the treatment of their own children for several reasons. Parents, because of their unique involvement with their child, are likely to be highly motivated to persist and succeed in treatment. They are usually finely tuned to their child's cognitive and linguistic abilities and are therefore able to provide the optimal linguistic input (Reich, 1986). Parents play a key role in facilitating dialogue with their child. They are responsive to their own child's cues, and their contingent responsiveness facilitates language acquisition (Reisinger, Ora, & Frangia, 1977). Parents spend more time with their child than the clinician, use

reinforcement from the child's natural environment and can provide frequent meaningful models ((Fey, 1986).

Many researchers believe that parents are effective in establishing generalization to the home environment (Forehand & Atkeson, 1977). If parents are trained to treat their children's language skills, they can ensure that the new skills are practiced at home. Parents can follow through with treatment at many times during the day, so that the children receive more treatment than they would if they were having direct clinical treatment which is generally only a few hours a week.

One child-oriented parent training approach is indirect language stimulation (ILS) (Weybright & Tanzer, 1986). This approach utilizes facilitation techniques designed to improve language of children 3-5 years of age by using a naturalistic method without manipulating the setting to elicit responses from the child. Rather, the approach is to react to the child's own communication and linguistic behavior.

While naturalistic child-oriented techniques are popular among clinicians and are frequently taught to parents, there is little empirical evidence that they are effective (Fey, 1986). In addition, most research projects on parent training have involved severely language delayed or mentally retarded children. Research is scarce on the effects of parent training using indirect language stimulation on stuttering pre-school children.

STATEMENT OF PURPOSE

The purpose of this study was to develop and evaluate an ILS parent training program which can be used with the parents of stuttering pre-school children and to determine whether or not indirect intervention can significantly reduce or eliminate the child's disfluencies. The research hypothesis is that there will be a significant

difference in the reduction of stuttering behavior in the children whose parents use indirect language stimulation.

The primary question addressed is: Is the stuttering of pre-school children reduced when parents are trained to provide treatment involving indirect language stimulation techniques?

This investigation will also address the following secondary question: Can parents be successfully trained to reduce the percentage of direct questions/commands, and negative comments, and to increase the percentage of positive/neutral comments?

DEFINITION OF TERMS

The following operational definitions will help to clarify the terms used in this study:

direct treatment: The child and the disorder itself are addressed for treatment.

disfluency: Fluency disruptions usually not attributed to stuttering (Ham, 1990). The

dysfluency: Fluency disruptions typically attributed to stuttering (Ham, 1990). Refers not only to breaks in the flow of speech, but also to disordered rate and inappropriate tension.

fluency: Speech production which is rapid, effortless, and without breaks in the forward flow (Starkweather, 1987).

frequency: The number of disfluencies per 100 words of speech (Riley, 1980).

incipient stuttering: Disfluent speech behavior judged to be the beginning of chronic stuttering. The beginning stages of stuttering behavior differ from normal disfluent speech relative to frequency of occurrence, type of discontinuity and/or duration (Adams, 1977; Riley & Riley, 1979).

Indirect Language Stimulation (ILS): A child-centered approach to language intervention (Weybright & Tanzer, 1986). It is carried out in the child's natural

environment and eliminates pressure on children to talk by encouraging them to take the lead while the adult follows with short, simple responses. The adult labels objects and actions which the child sees and avoids questioning and commanding the child. The results are that the adult increases use of positive and neutral statements and decreases use of questions and commands.

indirect treatment: The desire to communicate and the experience in communication, expression and structuring receive emphasis rather than the disorder itself. (Hahn, 1961). The child's environment is the focus of the treatment.

intrusive schwa: A substitution of the schwa for a vowel often found in the syllable being repeated (Adams, 1977).

parent training: A program set up to train parents in providing indirect treatment for their children.

stuttering: When speech flow is disrupted by repeated sounds or syllables, prolonged vowels, or the air-voice stream is arrested at the laryngeal level or impeded by abnormal articulatory postures. It is further aggravated by the child reacting by avoiding sounds, words, situations or audiences (Riley & Riley, 1979).

CHAPTER II

REVIEW OF THE LITERATURE

PARENTAL INFLUENCE IN STUTTERING

The first consideration in this review must be the long-debated controversy over whether or not parental verbal behavior is related to stuttering. In the 1930's, Wendell Johnson postulated his "diagnosogenic-semantic" theory of stuttering which claims that calling attention to a child's stuttering will exacerbate it. Since then, many researchers in stuttering have cautioned parents against calling emergent disfluencies in a child "stuttering". There are serious questions about the dynamics of the parents' influence on their child's stuttering and many theorists since Johnson have been concerned with the role parental verbal behavior plays in the acquisition and maintenance of stuttering in children.

Kasprisin-Burrelli, Egolf and Shames (1972) hypothesized that if parental verbal behavior was responsible for the acquisition and maintenance of stuttering in children, then there should be observable differences in the way parents talk to their stuttering children and to their nonstuttering children. In addition, if treatment for the stuttering children is successful, then the changes toward fluency should be paralleled by changes in the parents' verbal interaction. Their research was done with 14 parents of stuttering children as subjects and 14 parents of non-stuttering children as a control group. The results of their study show a significant difference between the verbal behavior of the parents of the two groups. The parents of stuttering children interacted in a consistently more negative manner than did the parents of the non-stuttering group. For example, they used negative questions ("Don't you like your teacher?"), global

praise ("You're such a good boy."), comparison ("Your brother never did that."), insults, sarcasm, threats and bribes. Also, the patterns of parental behavior became significantly more positive and paralleled changes in the child's stuttering over the course of treatment as the child became more fluent. Their research seems to support the assumption that parental verbal behavior may be a factor which should be considered for the maintenance or reduction of a child's stuttering behavior.

Research has indicated that some parents of dysfluent children use interaction patterns that are not conducive to fluent speech. Langlois and Long (1988) found that parents of dysfluent children tended to use directive speech acts which included questions and commands. They interrupted their children more, and used a rapid rate of speaking. Parent/child interactions contained a disproportionate number of adult initiated responses.

Various researchers have investigated elements of the young stutterer's environment to discover contributing factors. Myers & Freeman (1985) have shown that adults tend to talk more rapidly when talking to children who stutter and to interrupt them more often. Starkweather (1987) reports that parents who are instructed to speak more slowly to their stuttering children, do speak at a slower rate and the child has greater fluency.

Analyzing the correlation between stuttering and language, Wall & Myers (1984) propose that when simultaneous demands of language formulation and motor planning for the execution of coordinated speech are too much for the capacity of the young central nervous systems, hesitant and discontinuous speech occurs more often. Also considering the language element of stuttering, Starkweather (1987) proposes a "demands and capacities model of stuttering development" in which he describes the child's struggles with the ever-increasing pressure of his verbal environment. The child's growing capacity to talk more easily is paralleled by increasing demands for

fluent speech placed on him by those who talk with him and by the child himself.

Starkweather proposes that when the child's capacity for fluency exceeds the demands, the child will talk fluently, but when the child lacks the capacity to meet demands for fluency, stuttering will occur.

Research conducted by Pearl & Bernthal (1980) further supports the relationship of language and stuttering by showing that dysfluencies increase as grammar becomes more complex and sentence length increases. Their results also suggested that factors other than grammatical complexity may also affect the occurrence of dysfluencies in preschool children.

SPECIFIC INDIRECT LANGUAGE STIMULATION TECHNIQUES

Language researchers have observed children's home environments and described some important aspects of verbal interactions found there. Nelson (1973) found significant correlations between language maturity measures and (a) mothers' acceptance of their children's communications as meaningful and (b) less directive patterns of interaction. Also, researchers of stuttering behavior have focused on verbal interactions in the form of parental communication style (Shames & Egolf, 1976), including aspects of parents' communication such as speech rate (Myers & Freeman, 1985), turn-taking styles (Egolf et al., 1972), amount and types of questions asked (Egolf et al., 1972), verbal approval (Shames & Egolf, 1976), and linguistic complexity (Wall & Myers, 1984).

One direct therapy approach proposed by Guerney in 1964 suggested training parents to conduct nondirective play sessions with their emotionally disturbed children. Andronico & Blake (1971) adapted this psychotherapeutic approach to promote a more relaxed and healthy atmosphere in the home of the young stutterer. They observed that a reduced rate of stuttering ensued after the sessions partly because the parents

conveyed acceptance of the child as a whole rather than focusing solely on the negative symptoms of stuttering. Wall & Myers, 1984, introduced the concept of "filial therapy" which included spending the first set of sessions explaining, teaching, and illustrating to a small group of parents the techniques of nondirective play therapy (Wall & Myers, 1984). The object of the play sessions was to allow the child to express himself freely and to cultivate in the parents a manner which conveys acceptance and empathy. The major tool used during these sessions is reflective listening, modeled after counseling techniques. Parents modeled language for the child by pairing words with what the child was doing, seeing, feeling, and hearing.

Weybright & Tanzer (1986) used their Indirect Language Stimulation (ILS) program of language enrichment techniques at Portland Center for Hearing & Speech to train parents of language delayed children from the ages of 9 months to 3 years. Their program involved using a style of talking with children which avoids asking questions or making requests and utilized five specific techniques--parallel talk, description, self talk, expansion, and expansion plus. These techniques are presented with slow, easy speech in a relaxed, unhurried pace without too many words. Weybright & Tanzer found that most children made progress in language understanding and expression when their indirect method was used by parents. Although they did not apply their techniques to stuttering children, it is possible that dysfluent populations might also benefit from the use of these techniques.

Several researchers of treatment for stutterers have trained parents to provide indirect treatment involving ILS techniques similar to Weybright & Tanzer's. Some researchers use a combination of parental interaction plus counselling, discipline techniques, and rate modification (Johnson, 1980; Langlois & Long, 1988, Starkweather, 1987). Johnson (1980) described a home prevention program for pre-school children who are experiencing abnormal dysfluencies. That program

emphasized intervention strategies of selective attention to fluency, rate modification, and changes to more positive communication styles. Parents in her program were taught how to use reflection, expansion, open-ended questions, "I-messages" and active listening. Johnson reported changes in the types and frequency of dysfluencies, reduction in speaking rate and greater intelligibility.

From this review, it can be seen that both direct and indirect treatment programs have involved parents and results suggest that parents can be trained to provide treatment for their own children. However, the question as to whether indirect treatment using parents is effective has not been answered conclusively. Perhaps, because many of the studies are conducted using control groups, they fail to find significant overall group differences because the number of subjects is too small and the approach overlooks individual changes. This study addresses the issue of individual differences and changes by examining treatment and other clinical issues using a single-subject experimental design whose flexibility allows exploration of functional relationships between variables.

CHAPTER III

METHODS

SUBJECTS

For this investigation, four pre-school children ages 2.11 to 5.1 from the Portland, Oregon area served as subjects. The subjects were selected from referrals from speech language pathologists, as well as from responses to newspaper announcements. These children met the following criteria:

1. Normal hearing as determined by bilateral pure tone audiometry screening.
2. Not receiving direct speech intervention.
3. Have had the dysfluent speech at least 6 months.
4. No known identifiable psychogenic cause of the dysfluencies identified by sudden onset after a single event.
5. Parents must be willing to complete a daily log of their speech activity at home during a 15 minute period.
6. Child's speech must be at least 75% intelligible.
7. Parents must be willing and able to learn and use a program involving fluency stimulation techniques and more positive verbal interaction.
8. Children must meet three of the five following criteria for making a differential diagnosis between the normally nonfluent child and the incipient stutterers as outlined by Adams, 1977. The incipient stutterer:
 - a. exhibits at least 10 disfluencies per every 100 words spoken
 - b. produces part-word repetitions, prolongations and broken words as the predominate disfluency types.

- c. produces at least three unit repetitions
- d. produces the intrusive schwa in part word repetitions
- e. demonstrates frequent difficulty in starting and/or sustaining voicing or air flow for speech

Explanation of the experiment was given and permission form letters were signed by the parents (Appendices A and B). Two subjects were randomly assigned to Group A, receiving treatment, then the reading/neutral activity, and two subjects to Group B, receiving neutral/reading activity first, then treatment.

INSTRUMENTATION

Riley's (1980) Stuttering Severity Instrument yields a single numeric score that represents severity and is based on three parameters: (a) frequency (percentage) of stuttered words (b) estimated length (duration) of the longest block and (c) observable physical concomitants. The SSI was used to analyze the subjects' speech before and after the treatment period, after the neutral activity and at a follow-up session.

PROCEDURES

Selection Procedures

Each parent was interviewed by telephone to determine if basic criteria one through five were met. The researcher then met with the parent and child at Portland State University where an interview was conducted at which time it was determined if criteria six through 8 were met. The parent filled out information on the child in a questionnaire form (See Appendix C). Then the child and the parent interacted in a play session for 10 minutes with toys in the clinic room while they were observed by the researcher behind a one-way mirror. Each parent-child dyad was audiotaped and videotaped in the clinic room while they were interacting verbally. The tape recorder was placed 2 feet away from the child who sat on the floor with the parent. The video

camera was behind the one-way mirror with a microphone located in the clinic room. Materials used to elicit spontaneous speech included two play telephones, a Playschool dollhouse with "Little People" and plastic furniture, a toy barn with plastic farm animals, and various cars, trucks, and books.

General Experimental Procedures

After eligible children were selected, parent and child dyads were divided into two groups. One group received parent training in ILS techniques and was instructed to carry out the verbal interaction on a regular basis of 30 minutes each day for 6 weeks (total days: 42) (See Appendix D). The other group was instructed to spend the same 30 minute period in a reading activity with the child (See Appendix E). After the 6 week period, the reading group was trained in the language stimulation techniques and instructed to carry out those techniques for the next 6 weeks. At the same time, the first group was asked to spend the regular period in the reading activity. Another play session, during which language samples were recorded, was scheduled for the end of each of the two six week periods. Each language sample was analyzed by this researcher as soon as possible after obtaining the sample, using the SSI (Stuttering Severity Instrument) designed by Riley, 1980, to determine a severity rating for each subject. An intelligibility rating was given to each sample counting percent of intelligible words in a 100 word segment of the sample. Each utterance of the mother was then analyzed as being a question or command (negative) or a positive or neutral statement (positive). The percentage of each utterance type was calculated as positive or negative.

Examiner Reliability

Interjudge reliability between this researcher and a graduate student speech-

language pathologist at Portland State University was computed using audio and video tapes of one child at each level of measurement (pretest, posttreatment, post-neutral and follow-up). A different child was selected for each of the levels. Interjudge reliability for level of severity (i.e., very mild, mild, moderate, severe, very severe) based on Riley's scale (1980) was 100% (See Appendix F). Fifty percent of the total SSI scores were within one point; 100% of the total SSI scores were within 3 points. There was 100% agreement (plus/minus 3 percentage points) of percentages for positive and negative statements by the mothers. Intrajudge reliability, determined by repeating the analysis of one speech sample from each of the different subjects, was 100% on total SSI scores as well as for severity rating.

Parent Training Procedure

Parents were given training, depending on which group they were in, during the first or seventh week. They were given instructions on using indirect language stimulation techniques based on information from Putting It Into Words (Weybright & Tanzer, 1986). Weybright & Tanzer present the ILS techniques in booklet form and videotape. The videotape, "Oh Say What They See" (Weybright & Tanzer, 1982) was shown to the individual mothers and important sections of the booklet were presented to them as well. Parents were given written instructions on the techniques (See Appendix D). Weybright & Tanzer suggested that parents refrain from using questions and commands, which put pressure on the child to talk. They also suggested slowing the adult's speaking rate, listening to the child's message and using models instead of correcting the child's speech.

The mother's ability to recognize the negative verbal interactions between her and her child was developed by showing the mother the videotape taken of the initial session and pointing out situations where her comments were negative or demanding. Then this experimenter illustrated how the mother could change her

statements/questions by utilizing the ILS techniques. Then the mother analyzed more situations on the tape until she and this experimenter felt the mother had learned how to apply the techniques. The mother and child interacted again for five minutes with the experimenter in the room giving immediate feedback.

The following ILS techniques (Weybright & Tanzer, 1986) were emphasized:

1. parallel talk: Parent describes out loud what the child is doing.
2. description: Parent talks about what the child sees.
3. self-talk: Parent talks about what he/she is doing.
4. expansion: Parent repeats the child's comment using adult grammatical forms.
5. expansion plus: Parent expands the child's utterance and then adds information.

In addition to these 5 techniques, I included the following:

6. repetition (imitation): Parent repeats exactly what child says, but uses correct articulation (Schiefelbusch, 1978).

Parent Compliance

Each parent was given a list and a description of the techniques to be used during free play at home with their child (See Appendix D). The parent was then instructed to spend 30 minutes 7 days a week for the next six weeks in a free play situation using the ILS techniques with the child. Parents were instructed to spend the time alone with the child in order to eliminate any variations caused by a third person. Parents were instructed on keeping a log in which they recorded each 30 minute session in order to ensure that they adhered to the schedule.

The log was in the format of a postcard. Each mother was given twelve postcards (six weeks of treatment and six weeks of neutral activity) with space to record each individual session each day for one week with the child. The postcards

were pre-stamped and addressed to this experimenter; the mothers were requested to record actual time spent alone with the child using the ILS techniques or neutral activity and to mail the cards at the end of each week. Recorded information indicated that the mothers did follow through with at least one 30 minute session each day. Frequently, more than one session or much longer sessions were recorded.

During the treatment period, the parents were contacted one time each week by telephone to confirm that they were still spending 30 minutes a day playing with their child and using the ILS techniques as well as to answer any questions which they had.

DATA ANALYSIS

A single subject clinical design was used for the purpose of investigating the effects of parent training to provide indirect treatment for the child. The data presented highlight clinical, rather than statistical, significance. The primary purpose of using this within-subject design is to evaluate treatment effectiveness and to promote clinically significant changes in an individual's behavior (Mc Reynolds & Kearns, 1983). Each subject served as his/her own control, and baseline data are compared with post-treatment, postneutral, and follow-up data.

The 4 subjects were divided into 2 groups of 2 each to participate in an activity consisting of a neutral reading activity for six weeks and the indirect language stimulation program the other six weeks in a counterbalancing order. Then the subject's performance at baseline was compared to his/her performance after the treatment, the neutral segments, and a six-month follow-up session.

CHAPTER IV

RESULTS AND DISCUSSION

RESULTS

The purpose of this investigation was to determine whether or not a child-centered parent training program involving indirect language stimulation would eliminate or significantly reduce the child's dysfluencies. Four subjects were selected from a pool of Portland metropolitan families who answered newspaper advertisements and letters to speech/language pathologists and preschools in the greater Portland area. These four subjects were selected because they met three of the five criteria for differential diagnosis between normally non-fluent children and the incipient stutterers as outlined by Adams (1977). All four subjects had been stuttering at least six months and for as long as 18 months. An analysis of the multiple baseline across subjects design is presented in Figure 1.

Raw data (subscores) for all four subjects are presented in Figure 2. The results for each subject will be described individually in order to better understand the outcome of the treatment program. Measured from baseline to posttreatment, Jack improved from "moderate severity" to "mild severity", 20 points to 13 points (See Appendix F for SSI severity ratings for total scores). Steve improved from "moderate severity" to "mild severity", 18 points to 13 points. Ross had no significant change in the severity of his stuttering with 28 points to 25 points, a "severe" rating. Sophia improved from "moderate severity" to "very mild severity", 18 points to 8 points.

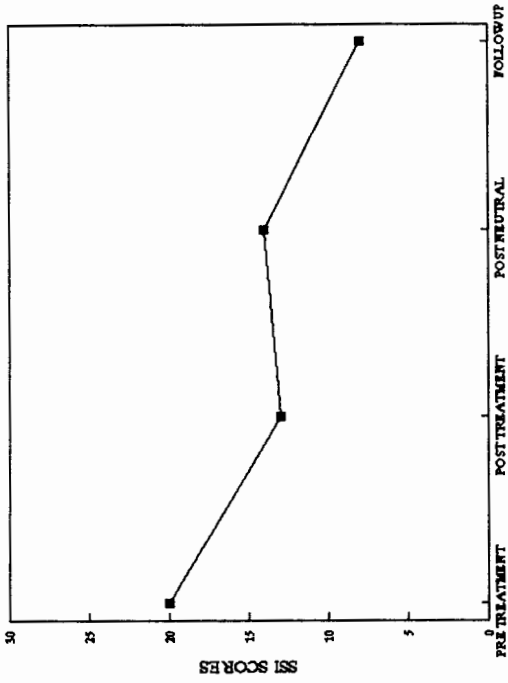
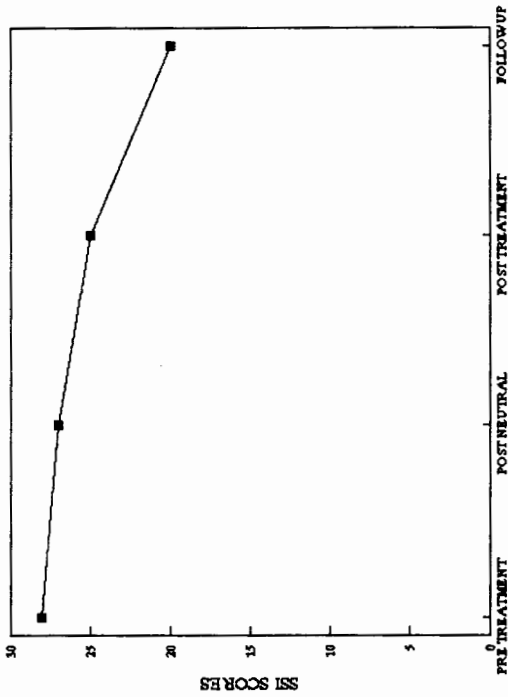
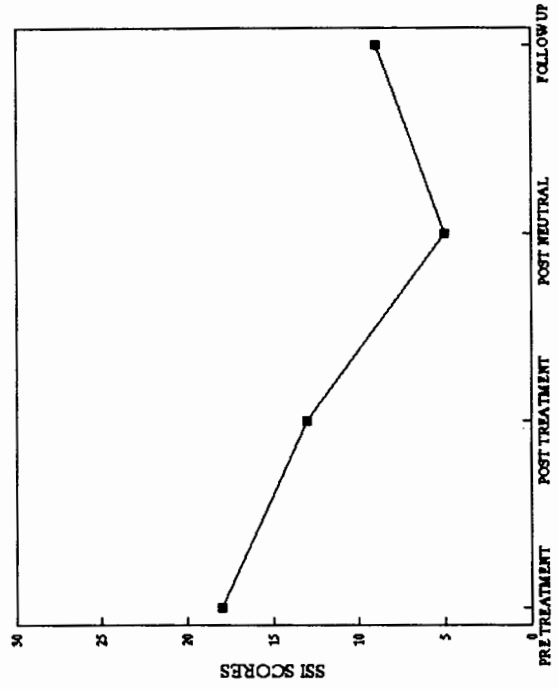
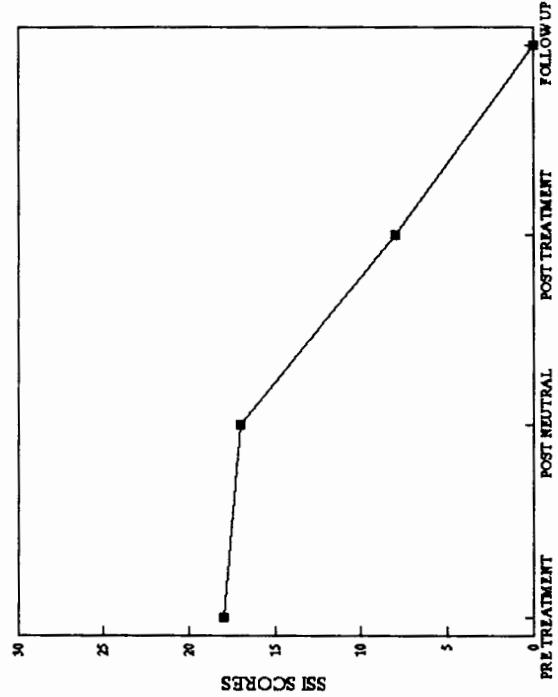
JACKROSSSTEVESOPHIA

Figure 1. Total SSI scores as measured during pretreatment, postneutral, posttreatment and follow-up sessions.

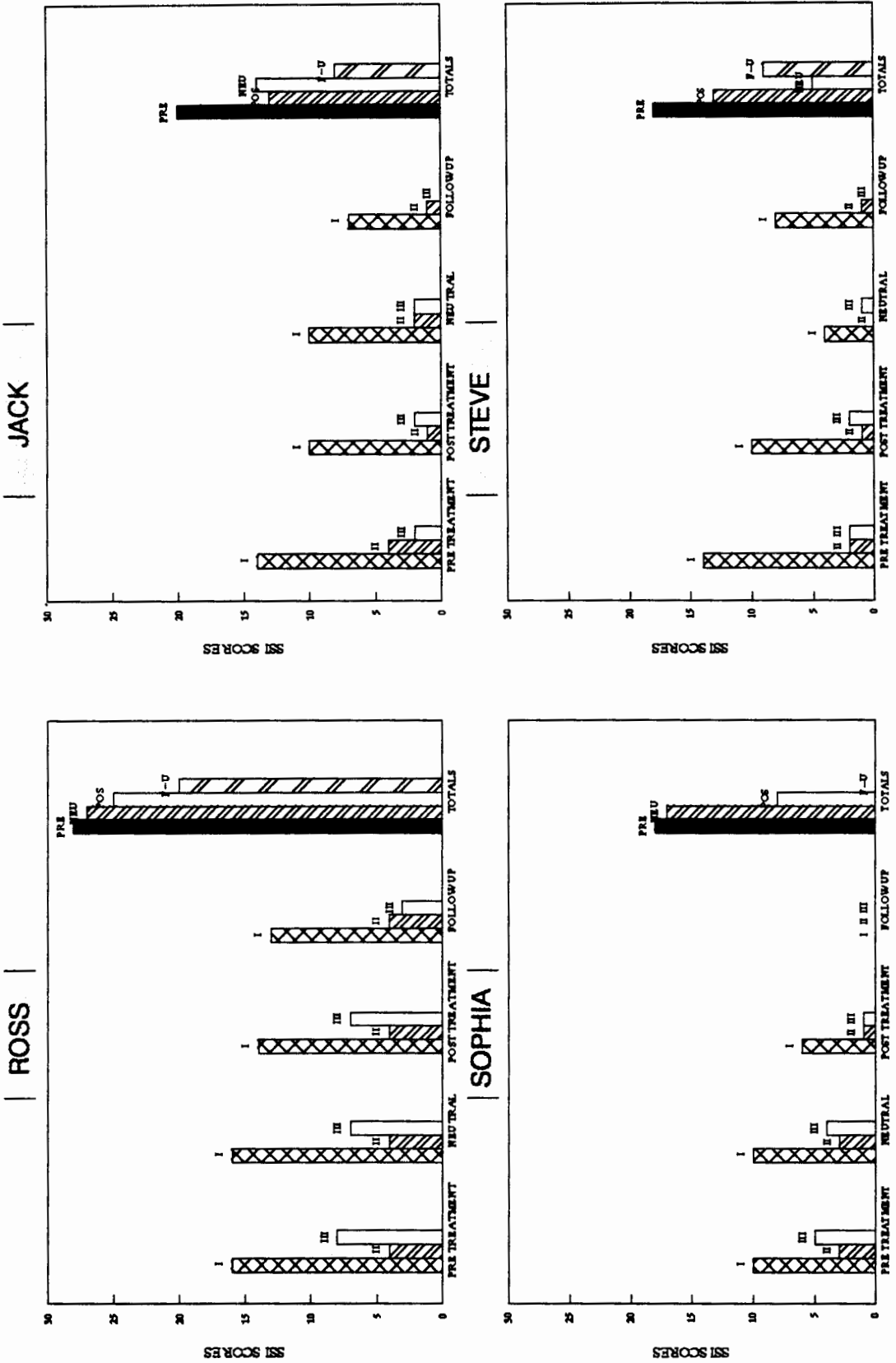


Figure 2. SSI subscores for frequency (I), duration (II), and concomitant behaviors (III), and total scores across conditions.

Follow-up data were collected 6 months after the treatment was completed. Jack continued the "mild" severity rating. Steve's rating changed from "very mild" (post-neutral) to "mild", an increase of 5 points. Ross improved 7 points and changed his rating from "severe" to "moderate". Sophia had eliminated all stuttering and her score decreased 8 points from "mild" to "very mild". An important outcome of the study is displayed in Figure 3, which illustrates the proportion of questions/commands and negative comments ("negative") versus positive/neutral comments ("positive") made by the parent during the taped sessions.

As measured 6 weeks after parent training, Jack's mother reduced questions/commands 45% (from 54% to 30%). Steve's mother reduced questions/commands 68% (from 48% to 15%). Ross' mother made a 26% reduction in her use of questions/commands (from 23% to 17%). Sophia's mother reduced questions/commands from 82% to 50%, a 39% reduction.

Follow-up data on the mothers' verbal behavior are also presented in Figure 3. Jack's mother further reduced her use of questions and commands to 20%. Steve's mother slightly increased her use of negative statements (15% to 17%). Ross' mother slightly increased her use of negative statements over the posttreatment session (from 17% to 20%). Sophia's mother further decreased her negative statements from 50% posttreatment to 40% at the follow-up session six months later. Figure 4 illustrates the children's total SSI scores together with their mothers' percentage of questions/negative statements. Visual inspection suggests that over time the children tended to become more fluent as the mother became less negative.

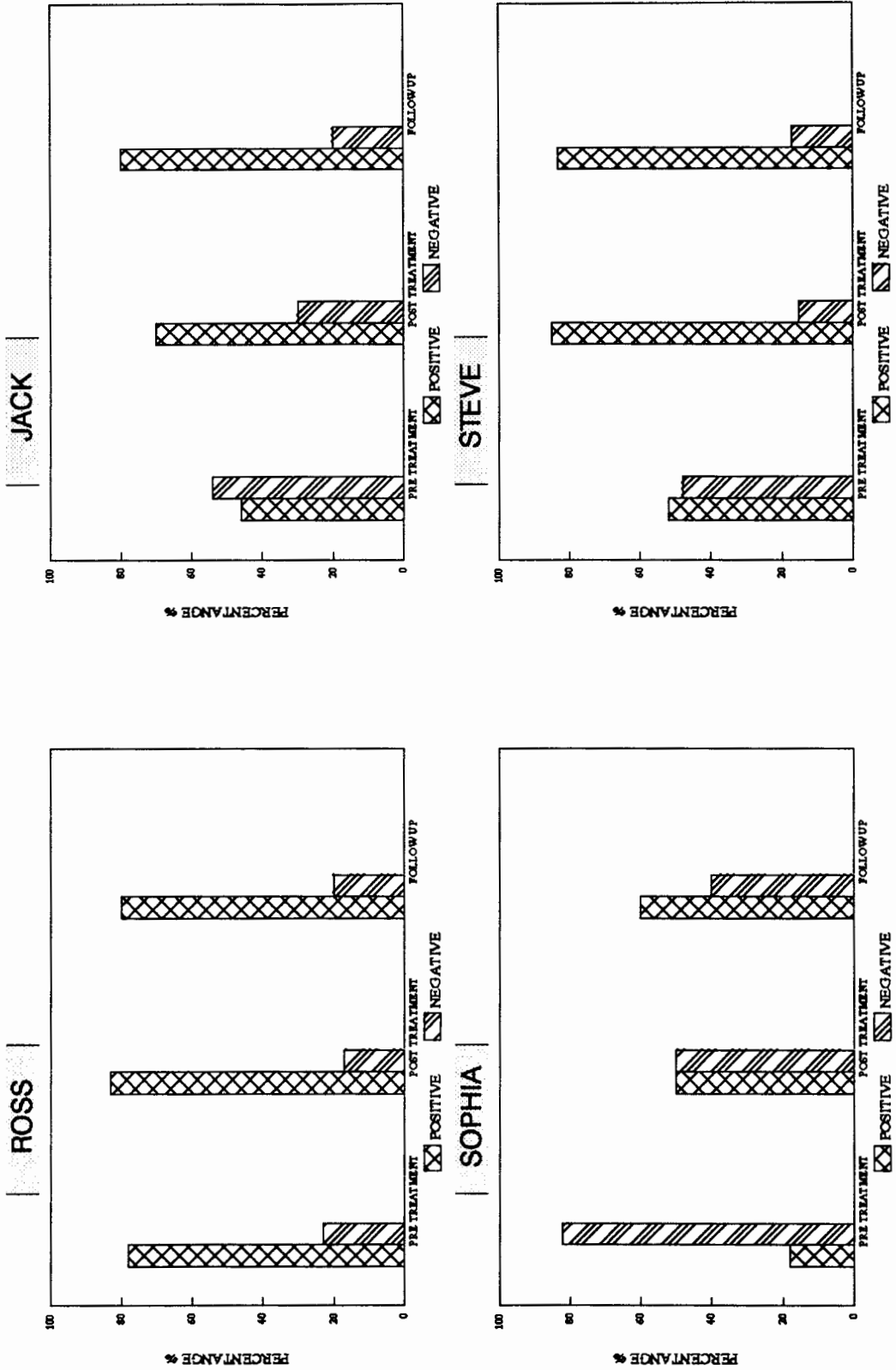


Figure 3. Parents positive statements versus negative statements and questions in pre, post and follow-up sessions.

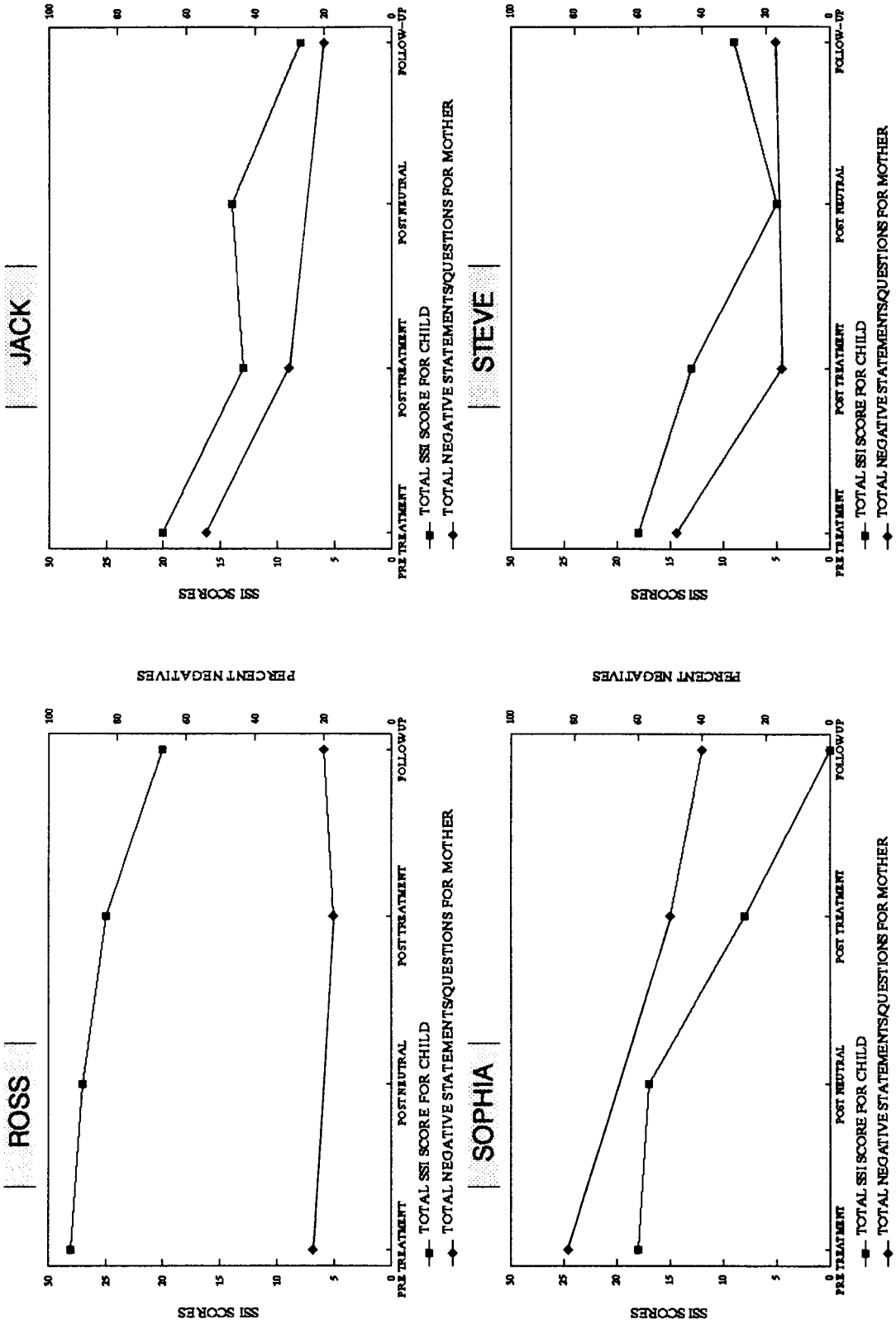


Figure 4. Total SSI scores for child and total negative statements/questions for mother.

DISCUSSION

Because of the small number of qualified subjects which were available for this study, it is difficult to make generalizations based on the results. However, several observations based on the information gathered from each individual subject can be made. The results following treatment revealed a meaningful reduction of stuttering severity in 3 of the 4 children. The indirect treatment provided by the mothers resulted in a change in their children's stuttering. The focus of this research, therefore, is on the way parents talk to their children and the verbal communication patterns between parent and child and whether that verbal interaction contributes to the child's stuttering severity.

Subject Description

These four subjects were selected because they met three of the five criteria for differential diagnosis between normally non-fluent children and the incipient stutterers as outlined by Adams (1977). All four subjects have been dysfluent at least six months and one for as long as 18 months. The results for each subject are given individually in order to better understand the outcome of the treatment program.

Jack was a 3-year, 4-month-old boy living with both parents, a five year old brother, a newborn brother, and a nanny. His mother reported that he had been stuttering thirteen months. His stuttering consisted of repetitions of whole and part words as well as sound repetitions and prolongations. His mother reported many ear infections when he was younger, but none lately. He passed the bilateral hearing screening. Articulation and language skills were considered normal, but were not formally evaluated. Intelligibility was judged to be approximately 95%. The mother was the parent trained to carry out the indirect treatment program.

Jack made noticeable progress in fluent speech after the six week treatment session, from a moderate severity rating (SSI score 20) to a mild severity rating (SSI score 13). The mother decreased her use of negative statements from 54% during the initial session to 20% after the final session which was an decrease of 59%. This dyad continued to use positive language interaction and the child's dysfluent speech was mild during the six month follow-up session when the mother used 80% positive statements.

Steve was a 3-year, 7-month old boy living with both parents and a six month old brother. His mother reported that he had been stuttering for about eighteen months, but that it had become more severe the last eight to nine months. There was no family history of stutterers. His stuttering behavior consisted of whole word, part word and sound repetitions with some "tongue clicking" noted by the mother a few months before the onset of the treatment program. There was an early history of frequent ear infections, but Andrew passed the bilateral hearing screening. Articulation and language skills were considered normal, but were not formally evaluated. Intelligibility was judged to be approximately 100%. The mother was the parent involved in the treatment.

Steve made a small improvement directly after treatment; at the same time, his mother's language changed from 46% negative statements to 15%. Then, after the second week of neutral treatment, Steve's severity rating improved from "mild" (SSI score 13) to "very mild" (SSI score 5). After six months, it remained "mild" (SSI score 9), and the mother's negative statements remained low (17%). The mother admitted that she continued to use the indirect language stimulation techniques which promote positive statements when interacting with her son after the treatment sessions. She said that she felt they were benefiting their relationship even if improvement in his stuttering behavior was slow. It appears that this child would have benefitted from a longer treatment period in order to stabilize fluent speech.

Ross was a 2-year, 11-month old boy who had been stuttering for 6 months. He lived with both his parents, his grandmother and one year old brother. On the questionnaire, his mother reported that his stuttering was accompanied by other behaviors, namely making faces, eye blinking, movement of head, arm and legs. There was a history of stuttering in the family with the mother's grandmother having a "problem with stuttering all her life". The mother herself had a speech pattern which was characterized by an uneven rhythm with false starts. In addition, her rate was noticeable faster than the other mothers in the study. Ross' dysfluencies consisted of whole word, part word, and sound repetitions, prolongations and the intrusive schwa in part word repetitions. In addition, he demonstrated frequent difficulty in starting and/or sustaining air flow for speech. Ross had a history of ongoing ear infections, but passed the bilateral hearing screening. His articulation and language were in the normal range, but were not tested formally. His intelligibility was considered to be approximately 75% and his articulation consisted of numerous age-appropriate distortions and substitutions as well as some which suggested a 6 month speech delay. The mother was the parent involved in the treatment program.

Ross was the only subject in the group who failed to make any significant progress by the end of the treatment phase, although he showed some progress after the 6 month follow-up. Several reasons may have contributed to the lack of improvement directly following treatment. This mother began the study using 23% negative statements in her interactions with her son. The percentage remained largely the same at the posttreatment and the follow-up (17% and 20% respectively). It would appear that this mother was already using the indirect language stimulation techniques, but they were having no effect on Ross' dysfluencies. Several possible reasons could explain the lack of improvement. First, the mother spoke quite rapidly to the child, and some rhythm irregularities were noted in her speech. Her speech would halt

occasionally and then she would continue again seconds later with the next word.

There are numerous studies in the literature which suggest that maternal speech rate is associated with the child's fluency (Stephenson-Opsal & Bernstein-Ratner, 1988; Myers & Freeman, 1985). These studies indicate that when mothers slowed their rates and maintained slower rates, the children's stuttering rates decreased. The present study did not emphasize adjusting mothers' speech rate. Secondly, Ross was the only child in the study with a familial history of stuttering. In addition, Ross was the youngest child in the group and had many more articulation errors than the others. There appeared to be no change in either his articulation or his fluency during the twelve week duration of the study. There was, however, a noticeable improvement in his articulation and his fluency during the 6 month follow-up session. At this time, his severity rating was "moderate" (SSI score 20), a notable change over the pre and posttreatment rating of "severe" (SSI scores of 28 and 27 respectively). It was also noted at this time that the mother's speech rate was slower and she seemed more relaxed. Her irregular rhythm, however, persisted. It would appear that after determining, during the initial interaction analysis, that this mother was already using positive language techniques, other possible variables should have been targeted when planning the type of treatment which was most appropriate for this child. Perhaps this dyad would have benefited from a more direct treatment approach which focused attention on the mother's speech rate and the child's articulation difficulties.

Sophia was a 5-year, 1-month old girl who had been stuttering seven or eight months. She was an only child living at home with both parents. Her stuttering consisted of prolongations, repetitions of phrases, whole words, part words and sounds. Her mother reported that her child's stuttering was occasionally accompanied by facial distortions, head, arm and leg movements. She was concerned because Sophia avoided eye contact and "mumbled" when she was dysfluent. Sophia had a history of

recurrent ear infections approximately ten to twelve times in her lifetime with two in the last year. She passed the bilateral hearing screening. Her articulation and language skills were considered to be in the normal range but were not formally evaluated. Sophia's speech was considered to be approximately 80% intelligible. Her reduced intelligibility was due to her habit of not sufficiently opening her mouth when she spoke rather than any specific articulation errors.

This mother made the greatest improvement in eliminating negative statements from her verbal interactions with her daughter, compared to the other parents in this study. She started the treatment program using 82% negative statements and reduced them to 50% by the end of the study and to 40% at the follow-up session. Even these figures do not reflect the extent of the change. All questions in the pretest sample were direct; questions in the posttest and follow-up samples were indirect in the form of statements with raised inflections which had to be counted as questions, but frequently were reflections of the ongoing activities or expansions of Sophia's comments. Sophia's speech made similar improvements, going from "moderate" severity (SSI score 18) at the beginning of the study to "mild" (SSI score 8) by the completion of the treatment and to "very mild" (SSI score 0) during the follow-up session. At the follow-up session, the mother reported that her daughter had not stuttered for several months and that many people commented on her improved intelligibility and fluency as well as her much more positive attitude.

Efficacy of Indirect Language Stimulation

Indirect language stimulation has the effect of changing the speaker's verbal interaction with the child. In this investigation, it changed the focus of the parent's conversation from questions and directive statements to parallel talk, descriptions, and expansions. In three of the four cases, the child's fluency did improve significantly as the parent interacted in a more positive manner.

Historically, parent-child interactions have been viewed as an important variable when investigating stuttering behavior of children (Nelson, Carskadden & Bonvillian, 1973; Egolf, Shames, Johnson, Kasprisin-Burrelli, 1972). Several studies suggest that parents should alter verbal interactions with their stuttering children. Kasprisin-Burrelli and others, 1972, observed parental behaviors and remediated negative interaction between parent and child as part of the treatment. They concluded that when parents are trained to react to their children in more positive ways, the tendency was for fluency to emerge. These studies combined both direct treatment for the child's dysfluency with indirect treatment by training parents to have more positive interaction. In these instances, it is difficult to conclude whether or not the parents were the change agents in the emerging fluency.

Because it is so difficult to isolate variables and to determine cause and effect relationships, research has been inconclusive in connecting the amelioration of stuttering with the parent-child interaction environment. It has not been shown that certain parental responses are of such importance that they result in the emergence of stuttering or fluency in children. The cause/effect relationship must be further explored.

In spite of the lack of conclusive evidence that parent-child verbal interaction has an effect on stuttering behavior, many direct fluency treatment programs include parent counseling as a component of fluency treatment. Evidence from the present investigation would indicate that indirect language stimulation has some positive benefits in some situations where parents are using predominantly negative statements; however, in some cases, it is important to consider other factors than the interaction between parents and child. In those instances, both direct and indirect intervention may be necessary.

Parent Verbal Behavior

The verbal intent of the parent during each videotaped session was analyzed and categorized as positive/neutral or negative. Positive/neutral statements consisted of expansions, repetitions, positive and neutral comments. The negative statements consisted of questions of any type, commands, and negative comments. As measured from pretest sessions to posttest sessions, all four parents decreased their use of negative statements over positive statements by 26% to 68%. Three of the four children of these parents decreased their stuttering from "moderate" to "mild". The fourth parent was only using 23% negative statements during the pretest session, but was still able to decrease those negative statements to 17% by the posttest. That child had no improvement in his stuttering condition; it remained "severe", but it changed during the follow-up study to "moderate".

It is difficult to make broad generalizations on these data, but some results do stand out. For those parents whose speech consisted of normal rate and rhythm, when the parent was successful in incorporating the indirect language stimulation techniques of parallel talk, description, self-talk, and expansion in the verbal conversations with the child and simultaneously was able to reduce the amount of negative statements, the child's stuttering severity was reduced. It is noted that this reduction of stuttering severity takes place only after the treatment phase, not after the neutral phase in the case of the two subjects who had the neutral phase before treatment. It appears from the results of this small sample, that when parents react to their children in more positive ways, unless other critical variables are interfering, the tendency is for fluency to increase.

Need To Individualize Treatment

Investigations such as the present study may lead speech pathologists to better counseling paradigms for parents while those parents interact with their dysfluent child.

It is possible that the improvement of the child's stuttering is directly related in part to the parent's increase in commenting techniques such as those suggested by this study which subsequently decreased questions and negative statements on the parent's part. It also appears to be important to evaluate each stuttering preschool child and the type of interaction taking place between him or her and the parents before direct or indirect intervention is recommended. It appears that the one child in this study who did not improve his fluency had a parent who was already using some of the techniques presented in the treatment program. This mother began the study using 78% positive statements in her interactions with her son. For this dyad, there was no dramatic change in verbal interactions as with the other three parent-child dyads. This example points out the importance of analyzing the mother-child verbal interaction before determining if parent training is advisable. This mother obviously did not need training in indirect language stimulation techniques. She was already using them. Post analysis suggests that there were clues that might have intimated alternative strategies. Perhaps the parent would have benefited from training on rate reduction, rhythm, or another behavior which was not analyzed during this study. When determining the type of intervention appropriate for each stuttering preschooler, it is important to look at the child's total relationship with his environment as well as other parameters such as genetic background, types of dysfluencies, articulatory behavior, and other behavioral and physiological factors.

Another consideration which should be made when analyzing the results of this investigation is that the increased fluency of the children, as measured in a controlled, clinical setting, is perhaps the result of the mere fact that the children were under observation and were stimulated to increase fluency because of the attention being given to their speech. It is also noted that the parents knew they were observation in the clinical setting and may have been responsive to the demands of the study and able

to respond in socially acceptable ways. Observation of the parents' verbal interactions privately with their children at home would have been difficult to achieve, but would have provided more natural results.

Parent Involvement

Involving parents in the treatment of their preschool child's dysfluent speech is important because that parent has such a strong influence over the child's environment and understands the child's learning patterns. The parent is the child's primary role model and controls the child's environment on a daily basis. If the parent is an active member of the treatment team, he or she can contribute to the development of a treatment plan which is appropriate and meaningful.

It is unfortunate that only one parent of each dysfluent child was able to participate in the training. Certainly, if ILS is to have full effect, the techniques should be used by each caregiver in the child's environment.

Length of Time For Treatment

One possibility for further research would be to conduct another follow-up study one year after treatment. Perhaps the more fluent speech which was gradually taking place in Ross' case would continue to improve. It would be valuable information to assess any fluency changes in all the subjects over a longer period of time.

The six weeks of treatment involved 42 days of 30-minute sessions. Although improvements in fluency were noted after the conclusion of treatment, even greater improvement was noted in all except one child at the follow up evaluation. Therefore, it is possible that even more noticeable improvement in fluency would occur in the months subsequent to the follow up. It should be noted that further evaluations at six month intervals would provide additional, valuable data. At the posttreatment session, parents reported that they were using ILS more often during the day than the 30-minute session. They also reported that they planned to continue the techniques as they felt

they were helping, even though progress was not always obvious in the child's speech. Perhaps the parents should have monitored their treatment time with their child for longer than 6 weeks, in order to assure that individual time was being spent with the child.

CHAPTER V

SUMMARY AND IMPLICATIONS

SUMMARY

This study investigated the advisability of utilizing parents to provide treatment for their dysfluent preschoolers. It involved the development, implementation and evaluation of a specific treatment program involving indirect language stimulation techniques. The primary question asked was whether or not parents can be successful in significantly reducing or eliminating dysfluent speech in their children. The secondary question was whether or not parents can be trained successfully to provide treatment.

Four children and their mothers were involved in the study. The four children were determined to be incipient stutterers rather than having normal nonfluencies by using the criteria set up by Adams (1977). The mother-child dyad was videotaped in a play situation for 20 minutes before the training period began. Then the mothers were trained to use specific language stimulation techniques which encouraged positive and neutral statements and discouraged negative statements, such as commands and questions. They used these techniques once each day for six weeks during a 30-minute session alone with the child. They filled out weekly time charts verifying the times spent using ILS with the child in a formal setting. In order to compensate for the possible positive effect of spending time alone with the child, a second six-week period was spent simply reading to the child and not interacting in a personal way. Again, time charts were kept for each day's activities. The four dyads were divided into two groups which were counterbalanced with treatment and neutral sessions. The mothers'

comments were analyzed before treatment began and after each six week period. The Stuttering Severity Instrument (SSI), (Riley, 1980), was applied to each child's language sample during the initial session and each six week period. A follow-up session was videotaped six months after treatment ended.

Because of the small number of subjects in the study, the data were analyzed by comparing individual SSI scores and percentages rather than using group statistics. Jack, Steve, and Sophia showed impressive improvement in their fluent speech following the treatment period and at the follow-up session. Ross showed no improvement after the treatment period, but showed some improvement after six months.

The answer to the primary question whether the children's stuttering behavior is improved by the parent treatment program is not entirely affirmative. Although three of the children did make meaningful improvement in their speech, one child in the study did not, at least not until six months after the study. The secondary question regarding the ability of the parents to learn the treatment program is answered affirmatively as a result of analyses of the mother's conversation after treatment sessions. The degree of change from negative statements and questions to positive statements ranged from 26% to 68%. Steve's mother decreased her negative statements by 68% from pretreatment to posttreatment sessions. Jack's mother decreased her negative statements by 45%, Sophia's mother by 39% and Ross' mother by 26%.

Information gained after analyzing the results brought about two additional questions. When planning treatment considerations, is it necessary to analyze the parent's interaction looking at more variables than positive and negative statements and questions? Perhaps in the instance of Ross' mother, her rate of speech and rhythm should have been addressed before determining whether direct or indirect intervention was appropriate. The final ancillary question which became apparent as a result of this

investigation is: Which features of a parent's speech should be considered a possible influence on the remediation of the child's dysfluencies? Did the rate and rhythm of Ross' mother's speech have an influence on his speech? It is also important to note that this child was different from the other three in several other ways which were not addressed in the investigation. He was younger than the others by nine to twenty-three months, had a familial history of stuttering, and was less articulate. Perhaps a part of, or the interaction of, these variables influenced the results.

The results of this investigation indicate that some reservations exist in considering a single treatment paradigm such as indirect language stimulation techniques. Although there may be some merit in using indirect language stimulation techniques in some situations, it seems apparent that factors other than the verbal interaction between caregivers and the child must be considered when adopting a plan for treatment and when choosing indirect over direct intervention.

IMPLICATIONS

Clinical Implications

It is certainly important to consider the research design limitations of this study due to the lack of available subjects and statistical comparisons; nonetheless, there are several clinical applications which were gained from this study. First of all, it appears that parents can be trained successfully to change their behavior in order to interact differently with their children. The mothers in the study expressed surprise when they discovered that they could find out what their child was doing and thinking without asking direct questions. As their children responded to their self-talk, modeling, and expansion, the mothers found that the children gave more information than if they had been asked direct questions. In addition, the mothers said that the indirect language stimulation techniques helped them to lower their expectations of high-level language

by letting the child take the lead in the conversation. After viewing videotapes of themselves interacting with their child, two mothers made comments that they were surprised how much they had dominated the conversation. There also appeared to be a relief of tension on the mothers' parts after they began to use the fluency enhancing techniques of expansion, self-talk, description, and parallel talk.

One final clinical implication of this research is that parent involvement in the treatment process of speech and language disorders in children is a natural development of recent trends to put emphasis on and importance in the family unit. The parent-child interaction can reveal much crucial information for speech pathologists.

According to Meyers & Bernstein-Ratner (1990), it is increasingly common to find that treatment of the young stutterer includes direct counseling of parental speech style. They urge speech/language pathologists to examine the issues surrounding the nature of normal parent-child interactions, then explore the character of this interaction when the child stutters. Their examination of research studies (1957-1990) revealed evidence that adults may facilitate fluency in children by using certain conversation styles. They strongly urge intervention in regard to the parent-child interaction.

Research Implications

Single-subject methodology offers promising possibilities for studying developmental disfluency problems and has been used by various researchers (Johnson, 1980). The clinical implications must be considered with caution, however, and further research with more complete data on different variables is necessary. The results of this parent training program and the procedures used appear to warrant further study.

The interaction between the mother and the child should be analyzed in depth in order to determine which factors might possibly be contributing to the child's disfluency. Possible variables to consider are: mother's rate of speech, mother's

anxiety level expressed by non-verbal communication through facial characteristics, body language, or other evidence of tension and concern, and elapsed time between child's comments and mother's response.

It would be advisable to analyze the parent's responses using more categories other than the dichotomy of questions and commands on one side and positive or neutral comments on the other. The types of questions which caregivers ask--requests for clarification, tag questions and raised inflections, as compared to "wh" questions and interrogatives--can provide additional information.

In the evaluation of preschool stutterers' speech, Riley's Stuttering Prediction Instrument (Riley, 1981) might prove to be more sensitive to the changes in stuttering behavior. That instrument has a section which is scored 0-2 on the parents' reactions to their child's stuttering. In addition, part-word repetitions, prolongations, and frequency are scored individually.

Several limitations of this study were acknowledged. In addition to the small number of subjects and limited age ranges, only one parent was observed interacting with the child and only one parent was trained to provide indirect treatment. Such potential problems should be addressed in further research on interactions of parents and children. It is important for each caregiver in the child's immediate environment to receive training to provide indirect treatment for the child. If it is not feasible to include these caregivers, then research criteria might address the trainee's observations of the interactions of the significant other and the child.

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APPENDIX A

LETTER TO PARENTS

APPENDIX A

Dear _____

I am a graduate student at Portland State University in the Speech and Hearing Sciences program. I am investigating the influence of parent-child verbal interaction on the stuttering behavior of the preschooler. I would appreciate your involvement in my study.

Parent training is a very important part of speech treatment for stuttering children. Your child will be given a hearing screening. Then I will record your child's conversation while you interact with him/her language play situation in a clinic room. I will make both a videotape and an audiotape of this language sample. I will use a scoring method to rate your child's stuttering severity.

If you agree to take part in this study, you will take part in a training program in which you will watch a videotape and work with me to use certain techniques when talking to your child. You will be asked to establish a regular schedule of 30-minute sessions, 7 times a week during which you will use these techniques during play with your child, keeping a log to ensure that you adhere to the schedule. You will be asked to return in 6 weeks so I can record another language sample. Then you will be asked to spend the same 30 minute session reading to your child, returning again after 6 weeks for another language sample. The entire study will last approximately 12 weeks.

I will be supervised by Dr. Robert L. Casteel, professor at PSU. There is no risk to you or your child if you participate in the study. You or your child may not receive any direct benefit from participating in this study, but participation could help increase knowledge which would benefit others in the future. It is possible that your child's speech could become more fluent as a result of the knowledge and skills acquired during your involvement in this project. You may withdraw yourself and your child from this study at any time without penalty and without jeopardizing any relationship with Portland State University.

If you have any questions, please call me at home (656-7011), or leave a message at PSU (725-3533). I greatly appreciate your cooperation.

If you experience problems as a result of your participation in this study, please contact the secretary of the Human Subjects Research and Review Committee, Office of Grants and Contracts, 303 Cramer Hall, Portland State University, 725-3417.

Sincerely,
Prudy Bowers

APPENDIX B

PARENT PERMISSION FORM

APPENDIX B

CHILD'S NAME: _____ NICKNAME _____

BIRTHDATE _____ AGE _____

PARENTS' NAMES _____

ADDRESS _____

TELEPHONE _____

I hereby give my permission for my child, _____, to take part in this study. I understand that my child and I may be videotaped and/or audiotaped during the sessions. I understand that I may withdraw my permission at any time during this study without penalty.

_____ SIGNATURE	_____ RELATIONSHIP	_____ DATE
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APPENDIX C

QUESTIONNAIRE

APPENDIX C

Child's Name _____ Nickname (if any) _____

Birthdate _____ Age _____

Address _____ Telephone _____

Name and relationship of person completing this questionnaire: _____

What language is spoken mostly in your home? _____

List the children and adults living in your home:

NamesAgeRelationship to child

When did you first notice that your child stutters?

How long ago was that? _____

What were any relating circumstances? _____

Are there any reasons now which you feel might be contributing to his stuttering?

Lately, is the severity of the stuttering increasing, decreasing or about the same?

Does the stuttering come and go or is it consistent? _____

Are there certain situations when you notice your child's stuttering is worse?

Better? _____

Does your child's speech change when he/she talks to:

(Please answer Worse, Better, or Same)

A friend _____ A younger sibling _____

An older sibling _____ A familiar adult other than the parent _____

(If so, who) _____

Pets or toys _____ Himself _____

Have any family members ever stuttered? _____ If so, who _____

When your child stutters, what do you do? _____

Describe what your child does when he/she stutters _____

Does it bother your child to stutter? _____

Does it bother any others? _____ Who? _____

Does anyone tease him about it? _____

How anxious are you and your spouse regarding your child's stuttering?

me my spouse

not at all _____

a little bit _____

moderately _____

extremely _____

Does your child ever do any of the following?

a. stretch sounds out? (mmmmmy ball) _____

b. "get stuck" in the middle of words? (b aseball) _____

c. repeat words? (I-I-I want the ball) _____

d. repeat sounds? (I want the b-b-b-ball) _____

e. repeat "uh" (buh buh buh ball) _____

f. repeat phrases ((I want...I want the ball) _____

Does your child do any of the following when speaking? (Yes or No)

Make faces _____ Move the head _____ Move arms/legs _____

Noisy breathing _____ tongue clicking _____ Eye blinking _____

Other (describe) _____

When did your child begin to talk? _____

Are both parents living at home with the child? _____

How much time each day do you spend alone with your child? _____

What activities you enjoy doing with your child? _____

Do you read to your child?

every day _____

two or three times a week _____

seldom _____

Does your child take a nap regularly? _____

If so, what time? _____

Has your child ever been seen by anyone for the following problems:

developmental delay _____

neurological impairment _____

hearing loss _____

mental retardation _____

orthopedic or physical handicap _____

Does your child have a history of ear infections? _____

If so, how often? _____

When was the last one? _____

Is your child now receiving any therapy for his stuttering? _____

Is your child able to attend to an activity for at least 15 minutes at a time? _____

Are you willing to spend 30 minutes a day alone with your child engaging in an activity? _____

Are you willing to keep a log (form provided) of the time you spend in this activity each day? _____

APPENDIX D

INSTRUCTIONS FOR ILS USE

APPENDIX D

PARENT-CHILD INTERACTION

Because the indirect language techniques are easy to learn and fun to use, they can quickly become a natural part of parents' interactions with their young children.

It might be helpful to analyze the type of language you now use with your child. Do you ask a lot of questions, or do you describe what is happening. Maybe you don't talk much at all. If you find yourself using questions more than forty percent and commands more than twenty percent, you may be demanding more from your child's speech than he/she is capable of producing at this time. Instead, we need to take some of the pressure off the child and make the talking situation a more relaxed one. Research in communication development tells us that children learning language will learn best when they have an opportunity to explore the world.

You can learn to play the "child's game" and have fun being with your child at the same time. When a parent plays the "child's game", the child takes the lead and selects the toys with which to play. The parent joins in, but allows the child to direct the play or initiate new activities. The child's game is a natural time to use the indirect language methods. However, please remember that preschool children do need to be directed at times during their day, and they do need consistent limits. Where safety and unacceptable behaviors are concerned, letting the child take the lead is not always appropriate. We encourage you to let your children explore their world; however, do not drop normal limits you've previously established.

Once you have learned to use some of the indirect language techniques, please set aside a period of time during each day when you consciously use the methods. This period could consist of 3 ten minute sessions, 2 fifteen minute sessions, or one 30 minute session. The important thing is to spend at least 30 minutes a day using the techniques in a consistent manner. You can use the techniques at any time that you remember to use them, but it is important to set aside the time to spend with your child alone using the techniques. Please record the time you spend in these sessions With your child and send it to me at the end of each week. (I will give you pre-stamped and addressed post cards to mail to me when you have completed them.)

The second part of the study involves having you spend the same amounts of time with your child (30 minutes a day) in a reading activity. This session can be done all at one time, for example, at bedtime each evening. During this time, please read to your child without much verbal interaction. It should be a "neutral" time, without much talking. I will provide you with postcards to log your time each session. Please mail these postcards at the end of each week. After this segment is completed (6 weeks) please return for a final evaluation of your child's speech. It is possible that a follow-up sample will be taken six months after the treatment period.

INDIRECT LANGUAGE STIMULATION TECHNIQUES

Self Talk: Describe out loud to your child what you are seeing, hearing, doing, as you do it. For example, "I wash the dish, dry it, and put it away." Use short, simple sentences, and let your child know there are words to describe all sorts of activities and feelings. Give the child words for what you are doing.

Parallel Talk: (Child oriented): Describe out loud what your child is seeing, hearing, thinking, and doing as the child does it: "You're throwing the ball." "In you go, into the car." "You're petting the kitty." "The light is red, so we have to stop." Give the child words to describe the action he/she does or the thing he/she sees.

Description: (object oriented): This is a labeling or explaining phrase or statement: "That's a big ball."

Repetition: (imitation): Repeat exactly what your child says, but use correct articulation. For example, the child says, "Th..Th..Th..Th..This is my house." You repeat, "Yes, this is your house."

Expansion: Repeat your child's sentences the way an adult would say them. This shows that you understand and at the same time, it gives a good model. You are revising and completing the child's speech. For example, the child says, "D..D..D..Doggy run." You say, "Yes, the doggy is running."

Expansion Plus: Expand the child's response to an adult sentence, as above, then add an additional related comment. For example, "Yes, the doggy is running. He likes to chase the ball."

APPENDIX E

INSTRUCTIONS FOR READING /NEUTRAL ACTIVITY

APPENDIX E

INSTRUCTIONS FOR READING/NEUTRAL ACTIVITY

The following are the instructions to complete the "neutral" phase of the program:

For the next six weeks, spend 30 minutes each day with your child. Instead of deliberately interacting with your child at this time using the indirect language stimulation techniques you have become so proficient with, spend the time in a reading activity which will minimize your interaction. Read to your child and respond in a natural way if he asks questions, but avoid using the specific techniques (self talk, parallel talk, description, repetition, expansion, and expansion plus) at this time. If your child becomes bored with reading, spend the time in any other activity which does not involve much interaction between you two (e.g. puzzles, coloring or blocks). Remember to avoid using specific ILS techniques during these 30 minute reading sessions when you are alone with your child. Continue to keep the log of your daily reading activity and continue to mail the post cards to me on a weekly basis.

Thank you! You are doing a terrific job. See you in 6 more weeks.

APPENDIX F

SSI SEVERITY RATING SCALE

APPENDIX F

Total Score	Percentile	Severity
0-5	0-4	Very Mild
6-8	5-11	Mild
9-13	12-23	
14-15	24-40	
16-19	41-60	Moderate
20-23	61-77	
24-27	78-89	Severe
28-30	90-96	
31-45	97-100	Very Severe

(Riley, 1980)