

NEGOTIATION PATTERNS OF FAMILIES WITH STUTTERING
AND NONSTUTTERING CHILDREN

THESIS

Presented to the Graduate Council of
Southwest Texas State University
in Partial Fulfillment of
the Requirements

For the Degree

Master of ARTS

By

Christa Leigh Sandberg, B.S.

San Marcos, Texas
May, 2003

COPYRIGHT

by

Christa Leigh Sandberg

2003

ACKNOWLEDGEMENTS

I would like to thank all the families who volunteered to participate in this study. They gave freely of their time and I could not have done the study without them.

Thanks to Dr. Maria Diana Gonzales and Dr. Richard Archer who served on my thesis committee for their guidance in this project. Their input and feedback for the formation of this study and its variables as well as their review of the manuscript was greatly appreciated. I am deeply grateful to Dr. Paul Raffeld for his guidance with the statistical analyses for this study.

Special thanks to my major advisor, Dr. Richard Mallard. I have grown professionally and personally as a result of our interactions. I am thankful for the opportunity that I had to study under his leadership.

I would like to give special thanks to my family and friends for all their support and prayers. They have been a constant source of encouragement and have helped me to achieve my goals.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vi
LIST OF FIGURES	vii
Chapter	
I. INTRODUCTION	1
II. METHOD	13
Participants	
Procedures	
Analysis	
Reliability	
III. RESULTS	20
IV. DISCUSSION	27
APPENDIXES	36
BIBLIOGRAPHY	43

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1 Participants by Gender, Ethnicity, Age, and Number of Family Members in the Negotiation for Families with Children Who Stuttered (S) and Families with Children Who Did Not Stutter (NS)	14
2 Results from Univariate ANOVA of Groups (Families with Children Who Stuttered and Families with Children Who Did Not Stutter) and Persons (Mothers, Fathers, Children, and Siblings) for the Variable of Turns Taken During Family Negotiations	21
3 Results from Univariate ANOVA of Groups (Families with Children Who Stuttered and Families with Children Who Did Not Stutter) and Persons (Mothers, Fathers, Children, and Siblings) for the Variable of Interruptions Produced During Family Negotiations	22
4 Results from Univariate ANOVA of Groups (Families with Children Who Stuttered and Families with Children Who Did Not Stutter) and Persons (Mothers, Fathers, Children, and Siblings) for the Variable of Turns with Questions Produced During Family Negotiations	25
5 Results from Univariate ANOVA for the Variable of Total Talk Time for Families with Children Who Stuttered (S) and Families with Children Who Did Not Stutter (NS) during Family Negotiations	26

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1 Interaction plot for the estimated marginal means of interruptions for groups (families with children who stuttered and families with children who did not stutter) and persons (mothers, fathers, children, and siblings).	23

CHAPTER I

INTRODUCTION

A multitude of studies have sought to find differences between parents of children who stuttered and parents of children who did not stutter. Some individuals believe that the conversational behaviors of parents impact, and possibly even lead to the development of stuttering behaviors in children (Brutten & Shoemaker, 1967; Freund, 1966; Glasner, 1960; Johnson, 1955; Van Riper, 1963; Wyatt & Herzan, 1962). It has also been hypothesized that this relationship is bi-directional, meaning that the child's speech also influences the parents' conversational behaviors (Hayhow, 1998). Studies have been conducted (Egolf et al., 1972; Kasprisin-Burelli et al., 1972; Kuhnsman, 1988; Langlois et al., 1986; Meyers, 1990; Meyers & Freeman, 1985a; Mordecai, 1979; Wertheim, 1972) that support the suggestion that paralinguistic behaviors such as speech rate and interrupting behaviors may be important to understanding how parent-child interactions relate to stuttering (Kelly & Conture, 1992).

Many researchers and clinicians in such professions as speech-language pathology and psychology believe children learn and grow by following models in their environment. One of these models is the speaking rate used by adults (Cross, 1977; Newport, 1976). It is also hypothesized that slowing the parental speaking rate would lead to greater fluency in children who stutter because the children would slow their speaking rates to match the parents' slower speaking rates (Curlee & Perkins, 1969;

Freeman, 1982; Meyers & Freeman, 1985c; Ryan, 1977; Shames & Florance, 1980; Webster, 1975). For example, Meyers and Freeman (1983a, 1983b) found that mothers of children who stuttered spoke faster than mothers of children who did not stutter, and children who stuttered spoke slower than children who did not stutter. Each individual in the study was involved in three interactions, one with their own mother/child and two with unfamiliar mothers/children. A review of the stuttering literature did not reveal clear indications of cause for the rapid speech rate produced by parents of children who stutter. It may be speculated that the parents anticipate a conversational time loss by the slower, dysfluent speech of their children who stutter and attempt to ameliorate such losses by increasing their own speech rates or that the parents attempt to model a faster speech rate for the children to imitate. These parental behaviors may be conscious or subconscious. Another study by Meyers and Freeman (1985c) found that a mother's fast speech was correlated with a child's slow speech. The children in the study demonstrated increased fluency when their mothers produced slower speaking rates. Stephenson-Opsal and Ratner (1988) observed mother-child interactions before and after instructing the mothers to slow their speaking rates. They also found that children were more fluent when parental speech rates were slower but reported that the children's speech rates increased rather than decreased in the presence of slowed parental speech rates. The researchers of the two studies did not indicate whether the parents perceived their children's increased fluency paired with slowed parental speech rates. Meyers and Freeman (1985c), Stephenson-Opsal and Ratner (1988), and Kelly (1994) reported that it could not be determined that parental rates initially influence stuttering or vice versa, but there did

appear to be a complex, interactive, and bi-directional relationship between stuttering severity and the paralinguistic behaviors of parents.

Other studies have found that a slowed maternal speech rate did not correlate with changes in the children's speech (Newman & Smit, 1989; Kelly & Conture, 1992; Ratner, 1992). Zebrowski (1995) reviewed published descriptive and experimental studies and reported that a reduced parental speech rate may be beneficial for some children who stutter, but may have no effect on the speech of other children who stutter. This influence may also differ by conversational partner, topic, and setting. While a reduced parental speech rate may seem to improve the stuttering, the parental speech rate did not have a confirmed causal relationship to the stuttering.

Meyers and Freeman (1985b) conducted a study that examined parental domination in parent-child interactions. They investigated whether parents of children who stuttered tended to be more dominating than parents of children who did not stutter. Reference was made to the study of Moncur (1952) that separated parental domination into categories of disciplinary action, excessively high standards, over-protection/over-supervision, and unjustified parental criticism. Meyers and Freeman obtained results contrary to the findings of Moncur, reporting that mothers of children who stuttered were no more dominating than mothers of children who did not stutter.

Langlois, Hanrahan, and Inouye (1986) and Ratner (1992) have investigated topics in parent-child interactions that have not been investigated by other researchers. Langlois et al. observed the occurrence of demands, commands, and requests used by parents when speaking with their children. Responses to the demands, commands, and requests could be verbal or nonverbal, although it was noted that children who stuttered

produced more verbal responses than children who did not stutter. One may speculate that parents of children who stutter encourage their children to be more verbal so they are practicing their speech behaviors, with the hope that the children's speech will improve with increased practice. They found that mothers of children who stuttered used more demands, commands, and requests, while mothers of children who did not stutter used more statements with their children. Ratner studied the complexity (syntax) of utterances during parent-child interactions. When studying complexity, the researcher wanted to determine whether the utterances were short and simple, or long and contained large words. Ratner found that the complexity of the mothers' speech decreased when their speech rate decreased, but this change was not correlated with any changes in the children's speech.

Verbal aggression, which refers to speaking behaviors that may serve to degrade a communication partner or to pressure them into talking, has also been studied in interactions between parents and children who stuttered (Egolf et al., 1972). Examples of verbal aggression would include questions such as "Don't you want to get better?" and "Why don't you say something?" or commands, such as "Answer me." In 1972, Egolf, Shames, Johnson, and Kasprisin-Burrelli noted that decreases in verbal aggression, silence, and interruptions by the parents resulted in decreases in the children's stuttering frequency and severity. Contrary to these results are those from a study by Meyers (1990), in which no parental verbal abuse, hostility, or aggression was ever observed. These negative communication behaviors did not play a role in the stuttering of the preschool children studied (Meyers, 1990).

Negativity and positivity of statements were another topic studied for parent-child interactions in stuttering. Kasprisin-Burrelli, Egolf, and Shames (1972) defined a negative statement as "one that fosters hostility, distrust, aggression, or silence." They defined a positive statement as "one that encourages mutual respect between parent and child, encourages verbal output on the part of the child, and indicates acceptance of the child's feelings and ideas" (Kasprisin-Burrelli et al., 1972, p. 338). In their study, Kasprisin-Burrelli et al. found that parents of children who stuttered tended to be more negative in their interactions with their children than the parents of children who did not stutter. Meyers and Freeman (1985b) and Meyers (1990) found that there was no difference between mothers of children who stuttered and mothers of children who did not stutter for negativity/positivity of statements, although children who stuttered used more positive statements than children who did not stutter. They suggested that the higher number of positive statements produced by children who stuttered indicated their need for approval from their parents (Meyers & Freeman, 1985b). Also, Guitar, Schaefer, Donahue-Kilburg, and Bond (1992) found no correlation between positive/negative statements and the child's stuttering behaviors.

In summary, parental speech rate does appear to have an influence on stuttering in children. Limited research is available regarding demands, commands, requests, and complexity of utterances in parent-child interactions, but the studies that do exist suggest differences between parents with children who stutter and parents with children who do not stutter. Langlois et al. (1986), for example, found that mothers of stutterers used more demands, commands, and requests, while mothers of non-stutterers used more statements with their children. Verbal aggression and the negativity/positivity of statements made by

parents do not appear to influence the communication styles of children. Even after more than fifty years of research in the area of parent-child interactions as they relate to stuttering, there is still debate regarding the influence of day-to-day communication interactions between parents and children on the children's communication behaviors.

Since 1986, Southwest Texas State University (SWT) has conducted a family program for the treatment of stuttering. Modeled after Rustin's program in England (1987), the SWT program (Mallard, 1998a) works with the entire family and not just the individual who stutters. Whereas traditional therapy programs emphasize speech modification only, the SWT program includes social skills training, negotiation, and problem solving. The expected outcomes (1998b) for the children are speech change as needed and the development of appropriate coping strategies. The expected outcomes for the family are family understanding and involvement in the total program and development of a plan for long-range management. Since the program is based on helping each child solve the stuttering problem within the family context, traditional measures of success, namely frequency counts before and after treatment, are not used. Rather, the clinicians consider the therapy to be effective if the children and the families do not seek further formal therapy for stuttering after completing the program. The parents and children consider the therapy a success regardless of the amount of dysfluency that might remain as long as the family has learned how to deal with stuttering, using the knowledge and techniques provided in the program (Mallard, 1998b).

Negotiation is an important aspect of the SWT program. A family's negotiation style impacts how they arrive at solutions that are acceptable to all the family members.

The program emphasizes negotiation as a way for a family to decide how they can best solve their problem of stuttering. A routine procedure conducted with all families in the SWT program during the initial interview is to observe how they communicate during a negotiation task. An example of a negotiation task is: "Your family has decided to get a new pet. How would you decide what kind of pet to get?" The family is allowed to discuss the issue and arrive at a solution. This interaction is videotaped. Information about how the family interacts (i.e., number of interruptions, number of questions, and turn taking) is gathered by the clinicians for future use in therapy.

Variables in Family Negotiations

Over the years, it has been observed by the staff of the SWT stuttering program that turn taking, questions, interruptions, and parental domination of talk time in family negotiations are frequently addressed during the course of treatment. For example, in a negotiation of one family in the program, the mother took 55% of the turns, and 67% of her turns included questions. Three of the father's five turns were interruptions, two of which were commands about behavior directed to the child who stuttered. No other family member interrupted during the negotiation. It has been noted also in the program that some family members took disproportionately more turns, asked more questions, and interrupted more often than other family members. Negotiation patterns differed, with some families spending several minutes negotiating while other families talked for little more than a minute. It would be important to the assessment and management of stuttering in a family-oriented, problem-solving program to determine the roles of these variables and how their occurrences differ between families with children who stuttered and families with children who did not stutter.

Turn Taking.

Some studies in stuttering have attempted to determine if group differences exist for turn-taking behaviors in parent-child interactions. Kelly and Conture (1992) defined a conversational turn as "a segment of speech by one person bounded at each end by speech or nonspeech back-channel communication (e.g., head nods) by another speaker including all of the utterances of one speaker until the other speaker begins to speak" (p. 1259). This definition combined previous definitions by Duncan (1972), Cherry and Lewis (1976), and Garvey and Berninger (1980).

Golinkoff and Ames (1979) found that mothers took more turns than fathers during free-play sessions, but the two parents took a similar number of turns during structured situations. Rondal (1980) reported that children took more turns with their mothers than with their fathers, and mothers took more turns than fathers.

Kelly and Conture (1992) and Guitar et al. (1992) found no significant differences related to turn-taking behaviors. Kelly and Conture compared mothers of children who stuttered to mothers of children who did not stutter, while Guitar et al. compared the turn-taking behaviors of mothers and fathers of children who stuttered.

Questions

Questioning behaviors have also been considered a possible variable in the interactions of parents with children who stutter. As with many other studies regarding communication behaviors and stuttering, some studies of questioning behaviors found significant differences between groups, while others did not. A question was defined as any statement that appeared to be a question based upon intonation or syntactic structure (Guitar et al., 1992). Guitar et al. found no statistically significant difference for the

number of questions asked by parents between families with children who stuttered and families with children who did not stutter. Starkweather and Gottwald (1993) also found no correlation between the number of questions and severity of a child's stuttering. Contrary to these last two studies, Langlois et al. (1986) found that mothers of children who stuttered asked more questions than mothers of children who did not stutter. Cherry and Lewis (1976) found that mothers of females asked more questions than mothers of males.

Interruptions

Researchers have also studied interruptions in parent-child interactions and stuttering. Meyers and Freeman (1985a) defined interruptions as "a break in the continuity with a question or remark while the other person was speaking...as evidenced by some simultaneous or overlapping speech" (p. 429). Numerous studies have investigated the relationship between interruptions and stuttering in children. Egolf et al. (1972) found that the results of their study supported the hypothesized relationship between parent verbal behaviors, including interruptions and child stuttering. Kasprisin-Burrelli et al. (1972) found that sarcasm, insults, prophesying, and interruptions appeared more often for parents of children who stuttered than for parents of children who did not stutter.

Meyers and Freeman (1983a, 1983b) studied dyadic mother-child interactions with each child interacting with his own mother and two unfamiliar mothers, one of a dysfluent child and one of a fluent child. They found a correlation between interruptions and disfluencies for both children who stuttered and children who did not stutter. In a study conducted by Mordecai (1979), the results indicated that parents of children who

stuttered interrupted more than parents of children who did not stutter. Kelly and Conture (1991) found that many children who stuttered, and their families, often interrupted or talked for each other. In another study, Kelly and Conture (1992) found no significant differences in interruptions between mothers of children who stuttered and children who did not stutter. They did, however, find a positive correlation between severity of stuttering and duration of mother's interruptions. Kelly (1994) studied father-child interactions and found that the fathers produced more interruptions than the children, regardless of the child's fluency status.

Other researchers have found no relationship existing between interruptions and stuttering. Meyers and Freeman (1985a) reported that mothers of children who stuttered and children who did not stutter were not found to differ in number of interruptions. Meyers (1990) again found no significant differences in interrupting, this time in dyadic interactions between children who stuttered with mothers, fathers, and peers. Guitar et al. (1992) found that interruptions were not statistically significant when related to a child's stuttering. Interruptions had no correlation with the stuttering severity of a child in a study by Starkweather and Gottwald (1993).

Talk Time

The amount of talk time has been another area of study for parent-child interactions and stuttering. Talk time, or interaction time as described by Meyers and Freeman (1985b), refers to the amount of time spent in interaction. Cherry and Lewis (1976) found that the mothers of girls spoke more than the mothers of boys. They also found that the girls spoke more than the boys, as measured by numbers of turns and utterances.

Two studies have disagreed with Cherry and Lewis's findings (1976). Meyers and Freeman (1985b) found no significant differences for interaction time or turn-taking time for children interacting with their own mothers, with an unfamiliar mother of a child who stuttered, and with an unfamiliar mother of a child who did not stutter. Guitar et al. (1992) found no difference between the amount of talking for a mother-daughter interaction and a father-daughter interaction.

In summary, literature to date has demonstrated mixed conclusions about the influences of turn taking, questions, interruptions, and talk time on stuttering in parent-child interactions. None of the studies occurred in the context of negotiations. Studies conducted in the 1970's (Egolf et al, 1972; Kasprisin-Burelli et al., 1972; Cherry & Lewis, 1976; Golinkoff & Ames, 1979; Mordecai, 1979) generally found significant differences for each of the variables, while studies from the 1990's (Meyers, 1990; Ratner, 1992; Guitar et al., 1992; Kelly & Conture, 1992; Kelly, 1994) generally found no significant differences. This contrast in results over the 20-year span between the 1970's and 1990's could be due to more rigorous research methods during that time.

Purpose

No previous research was identified for communication behaviors within the context of family negotiations. Such studies would be important in a family-oriented, problem-solving therapy program, leading to an increased understanding of how families with children who stutter interact in negotiation. The purpose of this study was to identify the differences that may exist between families with children who stutter and families with children who do not stutter relative to number of turns, number of turns with questions, number of interruptions, and total talk time in a negotiation setting. If

differences are found to exist between the groups, improved procedures for assessment and management can be developed to help families with children who stutter modify their interactions to be similar to those of families with children who do not stutter.

The hypothesis was that the variables of number of turns, number of turns with questions, and number of interruptions would be significantly greater in families with children who stuttered. The basis of this hypothesis was that families with children who stuttered would attempt to elicit more communication from their child, using questions and a larger number of turns to do so. They may also become frustrated with their child's dysfluencies, and the time and effort it takes the child to convey messages, leading to interruptions in which they may attempt to complete the child's utterances. Kelly and Conture (1991) reported that a number of families with children who stutter talk for and interrupt one another.

There was no evidence from prior research or observation to support a significant difference between families with children who stutter and families with children who do not stutter in total talk time. Prior to initiation of the study, it was observed that some families talked longer than other families, but no comparison had been made between families with children who stuttered and families with children who did not stutter. Although no differences were predicted to exist between the two groups, the variable of total talk time was included for exploratory reasons.

CHAPTER II

METHOD

Participants

Refer to Table 1 for the characteristics of the families who participated in this study according to the target child's gender, ethnicity, age, and the number of family members who participated in the negotiation. Ten families were in the S group, each with a child who stuttered. These families were referred to the stuttering program at the SWT clinic. The families selected all responded to the same prompt and had a recording suitable for transcription. The ages of the children who stuttered ranged from 5 years, 7 months to 12 years, 1 month of age, with an average age of 9 years, 2 months. There were four females and six males. The ethnicities of the families included nine Caucasian and one Hispanic.

The NS group consisted of ten families who had no children who stuttered. One of the children in each family was matched to a stuttering child from the S group according to age (within six months), ethnicity, and gender. These families were found primarily through personal contacts throughout the Central Texas area. The ages of the children matched to the children who stuttered ranged from 5 years, 5 months to 12 years, 5 months of age, with an average age of 9 years, 4 months. Data for the NS group were collected within a span of two months to ten years later than data for the S group.

Table 1

Participants by The Target Child's Gender, Ethnicity, Age, and the Number of Family Members in the Negotiation for Families with Children Who Stuttered (S) and Families with Children Who Did Not Stutter (NS)

Subject Pairs	Gender	Ethnicity	Target Child's Age		Family Members	
			S	NS	S	NS
1	Female	Caucasian	7 yr. 0 mo.	7 yr. 5 mo.	4	4
2	Female	Caucasian	10 yr. 6 mo.	10 yr. 4 mo.	4	5
3	Female	Hispanic	7 yr. 9 mo.	7 yr. 10 mo.	4	3
4	Male	Caucasian	7 yr. 8 mo.	7 yr. 5 mo.	3	5
5	Male	Caucasian	11 yr. 9 mo.	11 yr. 6 mo.	4	5
6	Male	Caucasian	11 yr. 1 mo.	11 yr. 4 mo.	3	4
7	Male	Caucasian	12 yr. 1 mo.	12 yr. 5 mo.	4	5
8	Male	Caucasian	8 yr. 0 mo.	8 yr. 3 mo.	4	4
9	Female	Caucasian	10 yr. 11 mo.	11 yr. 4 mo.	4	4
10	Male	Caucasian	5 yr. 7 mo.	5 yr. 5 mo.	4	3

Note. The mean age for the children who stuttered (S group) was 9 years, 2 months and the mean number of family members was 3.8. The mean age for the children who did not stutter (NS group) was 9 years, 4 months and the mean number of family members was 4.2.

Procedures

The case history holds great importance for family-oriented, problem-solving based stuttering programs in that it provides the clinician with information about the history and development of the problem, family interactions, how stuttering relates to the family's communication patterns, and how the child who stutters fits into the family framework (Rustin & Cook, 1983). All families referred for therapy complete a verbal

case history. This case history is obtained by the clinician who will conduct the program. As part of the initial session, a standard procedure is to videotape a negotiation session with informed consent.

Informed consent was obtained from all families. To participate in this study, the negotiations had to occur in a clinical setting during the initial meeting with the family. This meant that all the families in the NS group had to agree to meet with the researcher at the Southwest Texas State University Speech-Language-Hearing Center. All of the families were given the same prompt for discussion and the interactions for the families in the S group occurred prior to the initiation of the therapeutic program. The entire family was required to participate in the interaction and the children who did not stutter had to be free of speech, language, or hearing problems, as determined by a screening immediately prior to the interaction.

Screenings.

S Group. The families with children who stuttered were referred to the SWT clinic due to a suspected fluency disorder. It is standard procedure in the initial session to take a detailed case history from the parents, videotape a negotiation session, and present the families with a three-week assignment. Each of the children who stuttered received a standard speech, language, and hearing screening presented by faculty and/or graduate students supervised by certified speech-language pathologists. Part of the screening procedure included observing the children and parents interacting in the waiting room and during the initial meeting with the entire family. Additionally, a separate portion of the case history involved asking parents about their child's speech, language, and hearing development. It should be noted that the criterion for inclusion in

the family stuttering program was that the child had a stuttering problem. Thus, the presence of other speech, language, and hearing problems was of secondary importance and not a critical factor in determining the family's inclusion in the family stuttering program. If a child was found to have other communication problems and was not receiving therapy, then an appropriate referral was made. All the target children in the S group did not exhibit additional speech, language, or hearing problems.

NS Group. The lead researcher screened the target children in the families with children who did not stutter to rule out speech, language, and hearing problems. Each child had his/her hearing screened at an intensity of 20 dB HL for the frequencies of 1000, 2000, and 4000 Hz. The clinician initiated a brief, informal conversation with the child to screen speech and language. The child passed the speech and language screening if responses were judged to be age-appropriate in the areas of pragmatics, receptive and expressive language, and articulation. As in the S group, the parents were asked about their child's speech, language, and hearing functions in addition to the screening procedures.

Recording Procedures. As each family entered the clinical setting, they were asked to sit together to accommodate videotaping for adequate video and audio recordings of each participant. Typically, each family sat on a sofa, but they were not instructed where to sit relative to one another. The testing procedures did not differ for the S group and the NS group. The clinician provided the families with the following instructions before the initiation of the negotiation session:

When I start the videotape, I will introduce your family by last name and today's date. Then, I will give you a topic to discuss. Whenever you have finished discussing, I will stop the videotape.

A camcorder [JVC Compact Super VHS camcorder (GR-SX960U)] with a zoom lens and built-in microphone was positioned two meters from the family at a height of 1.5 meters. The clinician stood behind or to the side of the camcorder during the interactions. The prompt used for the family negotiation was:

You have been given two thousand dollars to take a vacation. You may spend less than the two thousand dollars but you may not spend more than the two thousand dollars. How would you decide what to do?

When the family finished discussing the topic, the camcorder was stopped. This was determined usually by a verbal response (i.e., "Okay, we're done.") from the family. At the end of the session, the family was given the opportunity to watch their negotiation interaction and ask questions.

Analysis

All interactions were transferred to master videotapes. The interactions for the S group were on one videotape and the interactions for the NS group were on another videotape. Each interaction was transcribed orthographically and then analyzed for the components to answer the research questions.

Conversational turns were coded based on the following definition: "a segment of speech by one person bounded at each end by speech or nonspeech back-channel communication (e.g., head nods) by another speaker" (Duncan, 1972). Statements by the same individual were counted as separate conversational turns if a pause longer than two seconds separated the statements or if one of the statements was an interruption. Each interruption was counted as a separate conversational turn. Conversational turns were

counted for each family member and a total number of turns for the family were recorded.

Interruptions were defined as a break in the conversational flow with speech or nonspeech communication by the listener before the speaker finished their turn, as evidenced by overlapping or simultaneous turns. This definition is similar to that used by Meyers and Freeman (1985a). The number of interruptions was counted and percentages were derived based upon number of turns for each family member and the entire family.

Questions were defined as any statement "that was judged to be a question on the basis of intonation or syntactic structure" (Guitar et al., 1992). There were cases in which more than one question occurred during a single conversational turn. For this study, the number of turns with questions was counted rather than the total number of questions. This coding was used to determine the percentage of total turns that included questions for each family member and the family.

Total talk time referred to the total amount of time that each family spent in negotiation. This was measured using a stopwatch, starting from the beginning of the first turn following the prompt and stopped after a verbal response from the family indicating that they finished. A total negotiation time was recorded for each family.

Reliability

The first rater for this study was the lead researcher, a second-year graduate student with graduate-level coursework in fluency and research in communication disorders and a year of clinical practice. The second rater was a certified speech-language pathologist with over thirty years of experience in stuttering therapy who held the Certificate of Specialty Recognition in Fluency Disorders from the American Speech-

Language-Hearing Association (ASHA). Interrater and intrarater reliability measures were determined for turns, interruptions, and turns with questions. A complete negotiation was randomly selected from the NS group for reassessment. The video of negotiation was reviewed with the aid of an orthographic transcript of the interaction provided to each rater. Each rater counted the number of turns during the interaction and marked turns with questions and interruptions on the transcript. These numbers were compared to the initial analysis and percentages were derived. Interrater reliabilities were 96% for turns, 95% for turns with questions, and 88% for interruptions. Intrarater reliabilities were 98% for turns, 95% for turns with questions, and 91% for interruptions.

CHAPTER III

RESULTS

The data from each family negotiation interaction session are displayed in Appendixes A-G. The independent variable was the videotaped negotiation interaction conducted with each family. This study investigated four dependent variables: turns, interruptions, turns with questions, and total talk time. Raw data for the variables of turns, interruptions, and turns with questions are presented in Appendixes A, C, and E, respectively. Percentages of those variables can be found in Appendixes B, D, and F, respectively. Data for total talk time are in Appendix G. Analyses for turns, interruptions, and turns with questions were done with the percentage data, while analysis for total talk time was done with the raw data.

Analyses were conducted using SPSS 9.0 for Windows (SPSS, 1998) and consisted of univariate ANOVAs. Preliminary testing of the data consisted of testing for correlations among the variables. The highest level of significance was .56 between turns and questions, indicating that the variables were all measuring different behaviors. For the statistical analyses, siblings 1 and siblings 2 were collapsed into a single category because only four families had a second sibling.

Tables 2, 3, 4, and 5 display the results for the univariate ANOVAs for turns, interruptions, turns with questions, and total talk time, respectively. For each source in the table (groups, persons, and groups-persons interaction), the Type III sum of squares,

degrees of freedom (df), mean square, F -value, and level of significance is shown. Error is also shown with Type III sum of squares, degrees of freedom (df), and mean square.

Turns

Refer to Table 2 for the results from an univariate ANOVA of the groups (S and NS) and persons (mothers, fathers, children, and siblings) for the variable of turns taken during family negotiations. No significant difference was found between the S group and the NS group for turns taken during family negotiations ($F = .46, p > .05$). There was no significant groups-persons interaction ($F = 2.22, p > .05$). A significant difference did exist between mothers, fathers, children, and siblings ($F = 12.95, p < .001$). This finding was not relevant to the hypothesis since the categories of mothers, fathers, children, and siblings were compiled across the S and NS groups. For example, children who stuttered and children who did not stutter were grouped together in the children's category. Analysis as such would not differentiate between families with children who stuttered and families with children who did not stutter.

Table 2

Results from Univariate ANOVA of Groups (S and NS) and Persons (Mothers, Fathers, Children, and Siblings) for the Variable of Turns Taken During Family Negotiations

Source	Type III Sum of Squares	df	Mean Square	F	Significance
GROUPS	34.49	1	34.49	.46	.501
PERSONS	2926.71	3	975.59	12.95	.000
GROUPS*PERSONS	501.83	3	167.28	2.22	.093
Error	5426.01	72	75.36	-	-

Interruptions

Refer to Table 3 for the results from an univariate ANOVA of the groups (S and NS) and persons (mothers, fathers, children, and siblings) for the variable of interruptions produced during family negotiations. No significant differences were found between families with children who stuttered and families with children who did not stutter ($F = .07, p > .05$) or family members ($F = 2.70, p > .05$) for interruptions during family negotiations.

Table 3

Results from Univariate ANOVA of Groups (S and NS) and Persons (Mothers, Fathers, Children, and Siblings) for the Variable of Interruptions Produced During Family Negotiations

Source	Type III Sum of Squares	df	Mean Square	F	Significance
GROUPS	21.79	1	21.79	.07	.800
PERSONS	2726.20	3	908.73	2.70	.052
GROUPS*PERSONS	4194.94	3	1398.31	4.16	.009
Error	24202.07	72	336.14	-	-

The groups-persons interaction was significant ($F = 4.16, p < .01$). This is best understood when referring to Figure 1, which shows the means for the categories of mothers, fathers, children, and siblings for the S and NS groups. The lines between the means for each group exist only to visually show the interactions.

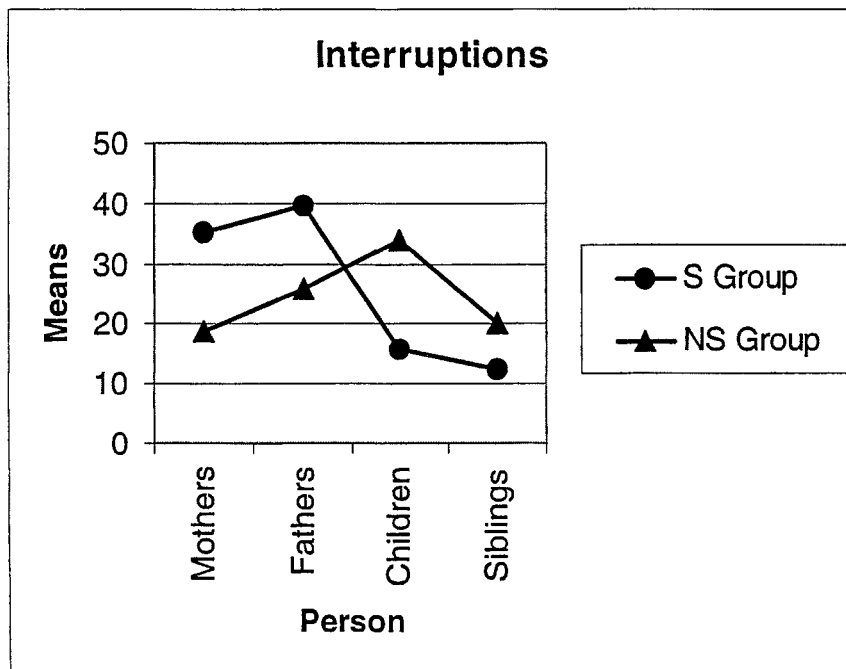


Figure 1. Interaction plot for the estimated marginal means of interruptions for the groups (S and NS) and persons (mothers, fathers, children, and siblings).

As can be seen for the S group, the mothers and fathers both produced high percentages of interruptions with mothers producing slightly fewer interruptions than fathers. Children and siblings, however, produced considerably fewer interruptions than either mothers or fathers. In the NS group, like the S group, mothers produced fewer interruptions than fathers, but both were lower than the mothers and fathers in the S group. The target children in the NS group had a higher percentage of interruptions than the mothers and fathers. They also had a higher percentage of interruptions than the target children in the S group. The siblings in the NS group produced fewer interruptions than the target children, falling between the means for the mothers and fathers. Figure 1 demonstrates that a disordinal interaction existed, thus indicating that a significant difference existed somewhere within the data although it could not be identified due to the crossover pattern of the means.

Turns with Questions

Refer to Table 4 for the results from an univariate ANOVA of the groups (S and NS) and persons (mothers, fathers, children, and siblings) for the variable of turns with questions. No significant difference was found between families with children who stuttered and families with children who did not stutter for turns with questions produced during family negotiations ($F = .02, p > .05$). There was no significant groups-persons interaction ($F = .36, p > .05$). A significant difference did exist between mothers, fathers, children, and siblings ($F = 42.60, p < .001$). This finding was not relevant to the hypothesis since the categories of mothers, fathers, children, and siblings were compiled across the S and NS groups. For example, children who stuttered and children who did not stutter were grouped together in the children's category. Analysis as such would not

differentiate between families with children who stuttered and families with children who did not stutter.

Table 4

Results from Univariate ANOVA of Groups (S and NS) and Persons (Mothers, Fathers, Children, and Siblings) for the Variable of Turns with Questions Produced During Family Negotiations

Source	Type III Sum of Squares	df	Mean Square	F	Significance
GROUPS	4.98	1	4.98	.02	.889
PERSONS	32330.64	3	10776.88	42.60	.000
GROUPS*PERSONS	275.40	3	91.80	.36	.780
Error	18216.34	72	253.01	-	-

Total Talk Time

Refer to Table 5 for the results from an univariate ANOVA for the variable of total talk time for the S and NS groups during family negotiations. No significant difference was found in total talk time between families with children who stuttered and families with children who did not stutter ($F = .32, p > .05$).

Table 5

Results from Univariate ANOVA for the Variable of Total Talk Time for the S and NS Groups during Family Negotiations

	Sum of Squares	df	Mean Square	F	Significance
S/NS	10672.20	1	10672.20	.32	.578
Error	599892.00	18	33327.33	-	-

In summary, there were no significant differences between the groups for the variables of turns, turns with questions, and total talk time during family negotiations. There was a significant groups-persons interaction for the variable of interruptions.

CHAPTER IV

DISCUSSION

The motivation for this study came from conducting a problem-solving based clinical program for families of children who stutter. The purpose was to determine if differences existed in family negotiation patterns as measured by four variables. It is important to realize that this study investigated family interactions in a negotiation setting. The results revealed no significant differences between families with children who stuttered (S group) and families with children who did not stutter (NS group) for the variables of turns, turns with questions, or total talk time. The results of this study did not support the hypotheses that families with children who stuttered would produce more turns, or turns with questions than families with children who did not stutter. The hypothesis that no significant difference in total talk time would exist between the S and NS groups was supported. A significant groups-persons interaction existed for the variable of interruptions indicating that the pattern of interruptions occurring for the S group did significantly differ from the NS group.

Unlike previous studies that observed the interactions of one parent interacting with one pre-school child (Meyers, 1990; Kelly & Conture, 1992; Cherry & Lewis, 1976), this study observed the negotiation interactions of school-aged children with their entire families. The task of negotiation as related to stuttering therapy has not been studied previously. Interactions in past research have included free-play sessions

(Kelly & Conture, 1992; Golinkoff & Ames, 1979; Rondal, 1980; Cherry & Lewis, 1976; Kelly, 1994; Meyers & Freeman, 1985a, 1985b, 1985c; Meyers, 1990; Langlois et al., 1986) and spontaneous conversation between parents and children (Kasprisin-Burelli et al., 1972; Rondal, 1980). This differs from negotiations in that a negotiation specifies a topic and has an end result. The topic channels the course of conversation and influences the way in which families may approach the task. No time limit is predetermined and the task is complete when the family reaches an agreement. This is not to say that all families approach the task in the same manner. For example, the task for the current study was deciding how to spend \$2000 for a family vacation. The way a family chose where they would go for a vacation may have been partially based on the different life experiences and circumstances of each family. Some families chose to use the money to visit relatives or go to a nearby city whereas other families chose more elaborate destinations, which involved details such as travel arrangements and accommodations. One of the most interesting findings of this study was the variability that existed between families regardless of the presence or absence of children who stuttered, such as the variability found for total talk time.

Total Talk Time

A wide range existed within the S and NS groups for total talk time. For example, some families talked for less than a minute, while others talked at length. Within the S group, Family 7 talked the longest (542 seconds) and Families 4 and 6 talked the shortest (55 seconds) with a range of 487 seconds. Within the NS group, Family 7 talked the longest (735 seconds) and Family 6 talked the shortest (57 seconds) with a range of 678 seconds. Significant differences were not found, possibly due to large standard

deviations, a small sample size, and only one observation per family. In most of the previous studies of parent-child interactions as they relate to stuttering, the length of time spent in an interaction was previously determined by the researchers (i.e., Kasprisin-Burelli et al., 1972; Meyers & Freeman, 1985a, 1985b, 1985c; Ratner, 1992).

Turns

The results of this study agreed with the findings of Kelly and Conture (1992) who found no significant difference for Turns between mothers of children who stuttered and mothers of children who did not stutter. These studies differed, however, with respect to number of subjects, age, and task. Kelly and Conture studied 26 mother-child dyads with children ranging from 3 years, 2 months to 4 years, 10 months of age as they engaged in free-play. The ten families in each group of the current study ranged in age from 5 years, 5 months to 12 years, 5 months and engaged in negotiation.

Studies of parent-child interactions have occurred in a variety of settings. For example, Golinkoff and Ames (1979) conducted their study within a laboratory setting. They observed twelve 19-month-old firstborn children in a 10-minute free-play session with their parents and then in a 10-minute session with each parent individually in which the parent was given a complex toy with which to teach the child to play. Rondal's (1980) study was conducted in the homes of his subjects. Rondal studied five middle-class, French-speaking couples interacting with male only-children between the ages of 1 year, 6 months and 3 years. Five recorded sessions occurred per family: free-play interactions between each parent with the child, mealtime, and storytelling interactions between each parent with the child. Golinkoff and Ames (1979) and Rondal (1980) found that mothers took more turns than fathers. The current study observed the interactions of older children

and did not purport to compare the differences between mothers and fathers for turns.

Rondal (1980) also found that children took more turns with their mothers than with their fathers. Similar findings were not apparent by viewing the data for the current study but would be interesting for future studies.

Cherry and Lewis (1976) found that girls took more turns than boys. They studied interactions of mothers with their two-year-old children. On the other hand, Golinkoff and Ames (1979) found that parents took more turns with boys than with girls in structured situations (learning to play with a complex toy). The findings of this study did not concur with Cherry and Lewis. A set time limit was not used for the negotiations, thus not allowing comparisons among the families as done by Cherry and Lewis (1976) and Golinkoff and Ames (1979).

Interruptions

Although significant differences in interruptions were not found between the S and NS groups, a significant difference did exist between the two groups for the pattern of interruptions. Mothers and fathers in the S group had higher percentages of interruptions than the target children and siblings (see Figure 1). The target children in the NS group had more interruptions than any other family member. In both groups, fathers had a higher percentage of interruptions than mothers. No post-hoc testing was done to determine the level of significance between fathers' and mothers' interruptions, but the difference was not likely to be significant due to the small variance between the two means.

A significant difference was not found between the S and NS groups (refer to Table 3). This was possibly due to the crossover of the means between the two groups

(see Figure 1). A significant difference was not likely for siblings (mean difference = 7.98) between the two groups due to the small difference between the means, but significant differences may exist between mothers (mean difference = 16.21), fathers (mean difference = 13.99), and children (mean difference = 18.02) for the S and NS groups. Such differences would support the findings of Kasprisin-Burelli et al. (1972) and Mordecai (1979). The studies found that parents of children who stuttered interrupted more often than parents of children who did not stutter. Kasprisin-Burelli et al. investigated conversations between school-aged children and one of their parents. An interesting feature of their study was that the same procedure was not used for all subjects. The study included ten mothers and four fathers of children who stuttered and ten mothers and four fathers of children who did not stutter. Eleven of the fourteen children who stuttered were being seen for therapy at the time of the study and the data for the investigation were collected prior to the beginning of each therapy session. The number of observations was not reported. In the therapy sessions, parents were advised to modify their verbal interactions with their children (i.e., parents who often interrupted attempted to never interrupt during the therapy). The fourteen children who did not stutter and the three children who stuttered but were not in therapy were recorded interacting with their parent in a single session. Mordecai (1979) investigated the communication behaviors of twenty mothers and fathers during triadic interactions with their preschool children. Ten of the children stuttered and ten of the children did not stutter. Kelly (1994) investigated the verbal behaviors of father-child dyads and reported that fathers produced many interruptions, regardless of whether the child stuttered or not. The current study did not support Kelly's findings. Fathers in the S group produced more interruptions than any

other family member (see Figure 1). In the NS group, however, the target children produced more interruptions than any other family member.

Unlike the findings of Meyers and Freeman (1985a) or Kelly and Conture (1992), this study suggested that significant differences do exist between families with children who stutter and families with children who do not stutter. Meyers and Freeman studied 12 boys who stuttered and 12 boys who did not stutter (ages 4 years to 5 years, 11 months) as they interacted with their mother, an unfamiliar mother of a child who stuttered, and an unfamiliar mother of a child who did not stutter. Kelly and Conture studied 13 boys who stuttered and 13 boys who did not stutter (ages 3 years, 3 months to 4 years, 8 months) interacting with their own mothers.

Turns with Questions

The results of this study did not agree with Langlois et al. (1986) who found that mothers of children who stuttered asked more questions than mothers of children who did not stutter. Langlois et al. studied eight children who stuttered and eight children who did not stutter interacting with their mothers within their own homes. The children ranged in age from 5 to 9 years.

Meyers (1990) observed children who stuttered (ages 2 years, 3 months to 6 years, 4 months) interacting separately with their mothers, fathers, and peers. The results of this study suggested that parents asked significantly more questions than peers. The current study is similar to the Meyers study in that it occurred in a clinical setting and it included siblings, which provides a similar interaction to the children as that of peers. The differences, however, outweigh the similarities of these two studies. The current study included older children who stuttered and children who did not stutter and observed

the interactions of these children with their entire family (instead of each conversational partner individually).

In a study by Cherry and Lewis (1976), mothers of females were found to ask significantly more questions than mothers of males. Cherry and Lewis studied the interactions of mothers with their two-year-old children in a clinical setting. Such findings were not identifiable in the current study due to the inclusion of fathers and siblings. Also, a set time limit was not used for the negotiations in the current study.

Implications for Clinical Assessment and Management

This study was based on the methods of a specific clinical program and its purpose was to investigate family negotiation patterns. The results are applicable to the Rustin model (1987) for stuttering assessment and intervention like the one at SWT. Negotiation and problem solving are integral to the program. The results of this study, however, revealed no significant differences between families with children who stuttered and families with children who did not stutter. Given the problem-solving approach inherent to the program, however, it is important to continue making these pre-therapy observations due to the wide variances that can be expected between families.

The clinical usefulness of the negotiation session has proven valuable because parents can view and analyze their pre-treatment video. Parents are often able to determine strengths and strategies to facilitate more fluent behavior without prompting from a clinician. It should be noted that all families judged their negotiations in this study to be fairly typical to what would occur in their own homes. It is hoped that this study will lead to further research within the area of family negotiation patterns as they relate to stuttering and stuttering therapy.

Additional Research

In this study, the children who stuttered were matched by age (within six months), ethnicity, and gender to children who did not stutter. The number of siblings and their ages were not controlled, although this may be a variable to consider in future studies. Some of the families consisted of a mother, father, and child while other families had an additional one or two siblings. Families with three members can be expected to differ in their negotiations from families with five members due to the added interaction variables of additional family members. However, one would not want to eliminate the siblings from the negotiation studies because they are a part of the family structure and will therefore be a variable in the family therapy program. Also, if a child has older siblings, this may present different negotiation patterns than a child with younger siblings or an only child. The age and family position of the children who stutter and the children who do not stutter may be a variable to control in future research.

All but two of the families involved in the study were Caucasian. The remaining two families (Family 3 in both groups) were Hispanic. Care should be taken when applying these results to families of different cultural backgrounds. Differences may exist in variables such as turn-taking, questioning behaviors, eye contact, use of silence, and direction of turns to specific family members due to cultural differences (Battle, 2002; Westby, 2000; Damico & Damico, 1993). The implications of such cultural differences may have a direct impact on stuttering intervention. Studies should be undertaken to study independently the negotiation patterns for families with different cultural backgrounds.

Additional research is needed for the variables considered in this study. This was the first study that investigated turns, interruptions, turns with questions, and total talk time during family negotiations. Convenience samples were used rather than random samples. The S group consisted of families who were seeking therapy. The families in the NS group volunteered to participate in the study. Each family was assigned to one of the groups based on whether or not they had a child who stuttered. No manipulation occurred for either group. Instead, comparisons were drawn between the two groups for an identical task. Generalizations to all families with children who stutter and families with children who do not stutter should not be made based on the results of this study. A study including random selection of subjects is needed.

Many variables are available for future research in family negotiations. It would be interesting to know if some family members talk more during the negotiations (amount of talk time) or if the communication is directed toward certain family members. For example, in Family 3 of Stuttering Families, the mother did the majority of the talking and 90% of the total turns taken by the family were directed to the mother or child. The father and sibling participated minimally during the negotiation task. In Family 6 of Nonstuttering Families, the father did the majority of the talking and 75% of the turns taken were directed to him. Other variables to consider for future research are amount of silence or response time latencies, the negativity or positivity of statements, eye contact, and the length/complexity of utterances.

Appendix A

The Number of Turns Taken by Each Family Member in Families with Children Who Stuttered (S) and Families with Children Who Did Not Stutter (NS) with Means and Standard Deviations and the Total Number of Turns, Means, and Standard Deviations for Each Family Negotiation

Family	Mother		Father		Child		Sibling 1		Sibling 2		Total Turns	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
1	27	63	10	32	23	46	8	60	-	-	68	201
2	24	12	6	12	15	6	14	11	-	5	59	46
3	24	40	5	27	13	51	1	-	-	-	43	118
4	7	35	9	30	13	17	-	11	-	8	29	101
5	17	14	16	43	7	45	9	37	-	8	49	147
6	9	8	9	5	8	14	-	9	-	-	26	36
7	58	64	22	88	22	88	45	66	-	32	147	338
8	44	15	36	19	40	18	12	5	-	-	132	57
9	24	25	26	14	21	22	13	12	-	-	84	73
10	23	35	14	14	9	38	11	-	-	-	57	87
$\bar{x}$	25.7	31.1	15.3	28.4	13.5	34.5	14.13	26.38	-	13.25	69.5	120.4
SD	15.28	20.27	9.94	23.81	10.63	24.40	13.12	24.65	-	12.58	40.89	91.27

Appendix B

The Percentage of Total Turns in Each Family Negotiation Taken by Each Family Member, Means, and Standard Deviations for Families with Children Who Stuttered (S) and Families with Children Who Did Not Stutter (NS)

Family	Mother		Father		Child		Sibling 1		Sibling 2	
	S	NS	S	NS	S	NS	S	NS	S	NS
1	39.71	31.34	14.71	15.92	33.82	22.89	11.76	29.85	-	-
2	40.68	26.09	10.17	26.09	25.42	13.04	23.73	23.91	-	10.87
3	55.81	33.90	11.63	22.88	30.23	43.22	2.33	-	-	-
4	24.14	34.65	31.03	29.70	44.83	16.83	-	10.89	-	7.92
5	34.69	9.52	32.65	29.25	14.29	30.61	18.37	25.17	-	5.44
6	34.62	22.22	34.62	13.89	30.77	38.89	-	25.00	-	-
7	39.46	18.93	14.97	26.04	14.97	26.04	30.61	19.53	-	9.47
8	33.33	26.32	27.27	33.33	30.30	31.58	9.09	8.77	-	-
9	28.57	34.25	30.95	19.18	25.00	30.14	15.48	16.44	-	-
10	40.35	40.23	24.56	16.09	15.93	43.68	19.30	-	-	-
$\bar{x}$	37.14	27.75	23.26	23.24	26.56	29.69	16.33	19.95	-	8.43
SD	8.52	9.08	9.45	6.70	9.62	10.38	8.80	7.43	-	2.33

Appendix C

The Number of Interruptions by Each Family Member in Families with Children Who Stuttered (S) and Families with Children Who Did Not Stutter (NS) with Means and Standard Deviations and the Total Number of Interruptions, Means, and Standard Deviations for Each Family Negotiation

<u>Family</u>	<u>Mother</u>		<u>Father</u>		<u>Child</u>		<u>Sibling 1</u>		<u>Sibling 2</u>		<u>Total Interruptions</u>	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
1	1	8	2	8	4	9	0	10	-	-	7	35
2	5	3	1	1	1	4	1	2	-	2	8	12
3	0	5	3	7	0	5	0	-	-	-	3	17
4	0	8	1	16	0	5	-	5	-	3	1	37
5	8	8	3	5	1	10	1	12	-	1	13	36
6	4	0	3	0	1	5	-	3	-	-	8	8
7	26	13	7	30	13	22	24	20	-	8	70	93
8	6	1	5	5	2	4	0	1	-	-	13	11
9	5	3	2	4	1	4	2	3	-	-	10	14
10	5	7	4	6	4	17	4	-	-	-	17	30
$\bar{x}$	6	5.6	3.1	8.2	2.7	8.5	4	7	-	3.5	15	29.3
SD	7.51	3.95	1.85	8.82	3.89	6.28	8.19	6.55	-	3.11	19.90	25.10

Appendix D

The Percentage of Total Interruptions in Each Family Negotiation Taken by Each Family Member, Means, and Standard Deviations for Families with Children Who Stuttered (S) and Families with Children Who Did Not Stutter (NS)

Family	Mother		Father		Child		Sibling 1		Sibling 2	
	S	NS	S	NS	S	NS	S	NS	S	NS
1	14.29	22.86	28.57	22.86	57.14	25.71	0.00	28.57	-	-
2	62.50	25.00	15.50	8.33	12.50	33.33	12.50	16.67	-	16.67
3	0.00	29.41	100.00	41.18	0.00	29.41	0.00	-	-	-
4	0.00	21.62	100.00	43.24	0.00	13.51	-	13.51	-	8.11
5	61.54	22.22	23.08	13.89	7.69	27.78	7.69	33.33	-	27.77
6	50.00	0.00	37.50	0.00	12.50	62.50	-	37.50	-	-
7	37.14	13.98	10.00	32.26	18.57	23.66	34.29	21.51	-	8.60
8	46.15	9.09	38.46	45.45	15.38	36.36	0.00	9.09	-	-
9	50.00	21.43	20.00	29.57	10.00	28.57	20.00	21.43	-	-
10	29.41	23.33	23.53	20.00	23.53	56.67	23.53	-	-	-
$\bar{x}$	35.10	18.89	39.66	25.58	15.73	33.75	12.25	22.70	-	15.29
SD	23.45	8.73	33.25	15.39	16.32	14.97	12.78	9.67	-	12.67

Appendix E

The Number, Means and Standard Deviations of Turns with Questions (TwQ) Produced by Each Family Member in Families with Children Who Stuttered (S) and Families with Children Who Did Not Stutter (NS) and the Total Number of Turns with Questions, Means, and Standard Deviations for Each Family Negotiation

<u>Family</u>	<u>Mother</u>		<u>Father</u>		<u>Child</u>		<u>Sibling 1</u>		<u>Sibling 2</u>		<u>Total TwQ</u>	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
1	17	41	6	5	2	6	0	4	-	-	25	56
2	12	6	2	5	1	1	3	0	-	0	18	12
3	16	21	1	13	0	7	0	-	-	-	17	41
4	3	12	6	6	0	3	-	1	-	2	9	24
5	5	3	6	19	0	6	0	2	-	0	11	30
6	5	5	3	2	0	0	-	0	-	-	8	7
7	15	20	2	38	1	7	5	8	-	4	23	77
8	9	6	14	12	8	0	1	1	-	-	32	19
9	11	5	5	3	6	0	0	0	-	-	22	8
10	8	17	4	1	1	0	1	-	-	-	14	18
$\bar{x}$	13.5	14.8	5.4	12.4	1.9	3.2	1.38	2.13	-	1.5	21.6	32.6
SD	6.10	11.79	3.73	11.43	2.81	3.18	1.84	2.78	-	1.91	8.63	22.98

Appendix F

The Percentage of Total Turns with Questions (TwQ) in Each Family Negotiation Produced by Each Family Member, Means, and Standard Deviations for Families with Children Who Stuttered (S) and Families with Children Who Did Not Stutter (NS)

Family	Mother		Father		Child		Sibling 1		Sibling 2	
	S	NS	S	NS	S	NS	S	NS	S	NS
1	68.00	73.21	24.00	8.93	8.00	10.71	0.00	7.14	-	-
2	66.67	50.00	11.11	41.67	5.56	8.33	16.67	0.00	-	0.00
3	94.12	51.22	5.88	31.71	0.00	17.07	0.00	-	-	-
4	33.33	50.00	66.67	25.00	0.00	12.50	-	4.17	-	8.33
5	45.45	10.00	54.55	63.33	0.00	20.00	0.00	6.67	-	0.00
6	62.50	71.43	37.50	28.57	0.00	0.00	-	0.00	-	-
7	65.22	25.97	8.70	49.35	4.35	9.09	21.74	10.39	-	5.19
8	28.13	31.58	43.75	63.16	25.00	0.00	3.13	5.26	-	-
9	50.00	62.50	22.73	37.50	27.27	0.00	0.00	0.00	-	-
10	57.14	94.44	28.57	5.56	7.14	0.00	7.14	-	-	-
$\bar{x}$	57.06	52.04	30.35	35.48	7.73	7.77	6.09	3.93	-	3.16
SD	19.05	24.96	20.21	19.86	10.20	7.53	8.58	3.91	-	4.11

Appendix G

Total Talk Times (in seconds), Means, and Standard Deviations for Families with Children Who Stuttered (S) and Families with Children Who Did Not Stutter (NS)

<u>Family</u>	<u>S</u>	<u>NS</u>
1	127	345
2	195	88
3	230	265
4	55	160
5	92	360
6	55	57
7	542	735
8	433	140
9	184	170
10	93	148
$\bar{x}$	200.60	246.80
SD	164.29	199.15

BIBLIOGRAPHY

- Adams, M. R. (1993). The home environment of children who stutter. *Seminars in Speech and Language, 14* (3), 185-190.
- Battle, D. E. (2002). *Communication disorders in multicultural populations* (3rd ed.). Boston: Butterworth-Heinemann.
- Bloodstein, O. (1995). *A handbook on stuttering* (5th ed.). San Diego: Singular Publishing Group, Inc.
- Brutten, E., & Shoemaker, J. (1967). *The modification of stuttering*. Englewood Cliffs, NJ: Prentice-Hall.
- Cherry, L., & Lewis, M. (1976). Mothers and two-year-olds: A study of sex-differentiated aspects of verbal interaction. *Developmental Psychology, 12* (4), 278-282.
- Conture, E.G., & Guitar, B. (1993). Evaluating efficacy of treatment of stuttering: School-age children. *Journal of Fluency Disorders, 18*, 253-287.
- Conture, E. G., & Wolk, L. (1990). Stuttering. *Seminars in Speech and Language, 11* (3), 200-211.
- Cooper, E. B. (1977). Controversies about stuttering therapy. *Journal of Fluency Disorders, 2*, 75-86.
- Cross, T. (1977). Mothers' speech adjustments: The contribution of selected child listener variables. In C. Snow and C. Ferguson (Eds.), *Talking to children: Language input and acquisition*. Cambridge, England: Cambridge University Press.
- Curlee, R. F., & Perkins, W. H. (1969). Conversational rate control therapy for stuttering. *Journal of Speech and Hearing Disorders, 34*, 245-250.

- Damico, J. & Damico, S. (1993). Language and social skills from a diversity perspective: Considerations for the speech language pathologist. *Language, Speech, and Hearing Services in Schools, 24* (4), 236-243.
- Duncan, S. (1972). Some signals and rules for taking speaking turns in conversations. *Journal of Personality and Social Psychology, 283-292*.
- Egolf, D. B., Shames, G. H., Johnson, P. R., & Kasprisin-Burrelli, A. (1972). The use of parent-child interaction patterns in therapy for young stutterers. *Journal of Speech and Hearing Disorders, 37*, (2), 222-232.
- Fowlie, G. M., & Cooper, E. B. (1978). Traits attributed to stuttering and nonstuttering children by their mothers. *Journal of Fluency Disorders, 3*, 233-246.
- Freeman, F. J. (1982). Stuttering. In N. Lass, L. McReynolds, J. Northern, & D. Yoder (Eds.), *Speech, language, and hearing* (pp. 673-691). Philadelphia, PA: W. B. Saunders.
- Freund, H. (1966). *Psychopathology and the problems of stuttering*. Springfield, IL: C. C. Thomas.
- Garvey, C., & Berninger, G. (1980). Timing and turn-taking in children's conversations. *Discourse Processes*.
- Glasner, P. (1960). A holistic approach to the problem of stuttering in the young child. In D. A. Barbara (Ed.), *Psychological and psychiatric aspects of speech and hearing*. Springfield, IL: C. C. Thomas.
- Golinkoff, R. M., & Ames, G. J. (1979). A comparison of fathers' and mothers' speech with their young children. *Child Development, 50*, 28-32.

- Goodstein, L. D., & Dahlstrom, W. G. (1956). MMPI differences between parents of stuttering and nonstuttering children. *Journal of Consulting Psychology*, 20 (5), 365-370.
- Grossman, D. (1951). A study of the parents of stuttering and non-stuttering children using the Minnesota Multiphasic Personality Inventory and the Minnesota Scale of Parents' Opinions. (From *Speech Monographs*, 1952, 193-194)
- Guitar, B. (1998). *Stuttering: An integrated approach to its nature and treatment* (2nd ed.). Baltimore, MD: Williams & Wilkins.
- Guitar, B., Schaefer, H. K., Donahue-Kilburg, G., & Bond, L. (1992). Parent verbal interactions and speech rate: A case study in stuttering. *Journal of Speech and Hearing Research*, 35, 742-754.
- Guitar, B. & Marchinkoski, L. (2001). Influence of mothers' slower speech on their children's speech rate. *Journal of Speech, Language, and Hearing Research*, 44, 853-861.
- Ham, (1990). *Therapy of stuttering: Preschool through adolescence*. Englewood Cliffs, NJ: Prentice-Hall.
- Hayhow, R. (1998). Stuttering and the family. In M. Fawcus (Ed.), *Stuttering: From theory to practice*. London: Whurr Publishers, Ltd.
- Jaffe, J., & Anderson, S. W. (1979). Prescript to chapter 1: Communication rhythms and the evolution of language. In A. W. Siegman & S. Feldstein (Eds.), *Of speech and time: Temporal speech patterns in interpersonal contexts* (pp. 17-22). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

- Johnson, W. (1955). *Stuttering in children and adults*. Minneapolis: University of Minnesota Press.
- Kasprisin-Burelli, A., Egolf D. B., & Shames, G. H. (1972). A comparison of parental verbal behavior with stuttering and nonstuttering children. *Journal of Communication Disorders, 5*, 335-346.
- Kelly, E. M. (1993). Speech rates and turn-taking behaviors of children who stutter and their parents. *Seminars in Speech and Language, 14* (3), 203-214.
- Kelly, E. M. (1994). Speech rates and turn-taking behaviors of children who stutter and their fathers. *Journal of Speech and Hearing Research, 37*, 1284-1294.
- Kelly, E. M., & Conture, E. G. (1991). Intervention with school-age stutterers: A parent-child fluency group approach. *Seminars in Speech and Language, 12* (4), 309-322.
- Kelly, E. M., & Conture, E. G. (1992). Speaking rates, response time latencies, and interrupting behaviors of young stutterers, nonstutterers, and their mothers. *Journal of Speech and Hearing Research, 35*, 1256-1267.
- Kuhnsman, L. M. (1988). Preschoolers disfluency: Is it related to the intended message? Paper presented at the Annual Convention of the American Speech-Language-Hearing Association, Boston, MA.
- LaFollette, A. C. (1956). Parental environment of stuttering children. *Journal of Speech and Hearing Disorders, 21* (2), 202-207.
- Langlois, A., Hanrahan, L. L., & Inouye, L. L. (1986). A comparison of interactions between stuttering children, nonstuttering children, and their mothers. *Journal of Fluency Disorders, 11*, 263-270.

- LaSalle, L. R., & Conture, E. G. (1991). Eye contact between young stutterers and their mothers. *Journal of Fluency Disorders*, 16, 173-199.
- Mallard, A. R. (1991). Family intervention in stuttering therapy. *Seminars in Speech and Language*, 12 (4), 265-273.
- Mallard, A. R. (1998a). Encouraging a broader perspective in judging the effectiveness of stuttering therapy. *Journal of Fluency Disorders*, 23, 123-125.
- Mallard, A. R. (1998b). Using problem-solving procedures in family management of stuttering. *Journal of Fluency Disorders*, 23, 127-135.
- Mallard, A. R. (2001). Class notes from Communication Disorders 5331: Stuttering therapy. Southwest Texas State University.
- Matthews, Williams, & Pring (1997). Parent-child interaction therapy and dysfluency: a single-case study. *European Journal of Disorders of Communication*, 32 (3), 346-357.
- Meyers, S. C. (1990). Verbal behaviors of preschool stutterers and conversational partners: Observing reciprocal relationships. *Journal of Speech and Hearing Disorders*, 55, 706-712.
- Meyers, S. C., & Freeman, F. J. (1983a). Mother's communicative patterns with young stuttering and non-stuttering children. (From *ASHA*, 1983, 66.)
- Meyers, S. C., & Freeman, F. J. (1983b). Qualitative and quantitative differences between young stutterers and nonstutterers. (From *ASHA*, 1983, 66.)
- Meyers, S. C., & Freeman, F. J. (1985a). Interruptions as a variable in stuttering and disfluency. *Journal of Speech and Hearing Research*, 28, 428-435.

- Meyers, S. C., & Freeman, F. J. (1985b). Are mothers of stutterers different: An investigation of social-communicative interaction. *Journal of Fluency Disorders*, 10, 193-209.
- Meyers, S. C., & Freeman, F. J. (1985c). Mother and child speech rate as a variable in stuttering and disfluency. *Journal of Speech and Hearing Research*, 28, 436-444.
- Moncur, J. P. (1952). Parental domination in stuttering. *Journal of Speech and Hearing Disorders*, 37 (2), 155-165.
- Mordecai, D. R. (1979). An investigation of the communicative styles of mothers and fathers of stuttering versus nonstuttering preschool children. *Dissertation Abstracts International*, 40, 4759-B.
- Mowrer, D. E. (1998). Alternative research strategies for the investigation of stuttering. *Journal of Fluency Disorders*, 23, 89-97.
- Newman, L. L., & Smit, A. B. (1989). Some effects of variations to response time latency on speech rate, interruptions and fluency in children's speech. *Journal of Speech and Hearing Research*, 32, 635-644.
- Newport, E. (1976). Motherese: The speech of mothers to young children. In N. Castellan, D. Pisoni, & G. Potts (Eds.), *Cognitive theory* (Vol. 2, pp. 177-217). New Jersey: Lawrence Erlbaum.
- Nippold, M., & Rudzinski, M. (1995). Parents' speech and children's stuttering: A critique of the literature. *Journal of Speech and Hearing Research*, 38 (5), 978-989.

- Ramig, P. R. (1993). Parent-clinician-child partnership in the therapeutic process of the preschool- and elementary-aged child who stutters. *Seminars in Speech and Language, 14* (3), 226-236.
- Ratner, N. B. (1992). Measurable outcomes of instructions to modify normal parent-child verbal interactions: implications for indirect stuttering therapy. *Journal of Speech and Hearing Research, 35*, 14-20.
- Ratner, N. B. (1993). Parents, children, and stuttering. *Seminars in Speech and Language, 14* (3), 238-249.
- Ratner, N. B. (1997). Stuttering: A psycholinguistic perspective. In R.F. Curlee and G.M. Siegel (Eds.). *Nature and treatment of stuttering: New directions*. (2nd ed.). Boston, MA: Allyn & Bacon. pp. 99-127. (ch. 5).
- Rondal, J. A. (1980). Fathers' and mothers' speech in early language development. *Child Language, 7*, 353-369.
- Rustin, L. (1987). The treatment of childhood dysfluency through active parental involvement. In L. Rustin, H. Purser, & D. Rowley (Eds.), *Progress in the treatment of fluency disorders* (pp. 166-180). London: Taylor and Francis Ltd.
- Rustin, L. (Ed.). (1991). *Parents, families, and the stuttering child*. San Diego: Singular Publishing Group, Inc.
- Rustin, L. & Cook, F. (1983). Intervention procedures for the disfluent child. In P. Dalton (Ed.), *Approaches to the treatment of stuttering* (pp. 47-75). Beckenham, Kent, Great Britain: Croom Helm Ltd.
- Rustin, L., & Cook, F. (1995). Parental involvement in the treatment of stuttering. *Language, Speech, and Hearing Services in Schools, 26*, 127-137.

- Rustin, L., Cook, F., & Spence, R. (1995). *The management of stuttering in adolescence: A communication skills approach*. London: Whurr Publishers Ltd.
- Rustin, L., Botterill, W., & Kelman, E. (1996). *Assessment and therapy for young disfluent children: Family interaction*. San Diego: Singular Publishing Group, Inc.
- Ryan, B. P. (1977). *Programmed therapy for stuttering in children and adults*. Springfield, IL: Charles C. Thomas.
- Schuell, H. (1946). Sex differences in relation to stuttering: Part I. *Journal of Speech Disorders*, 11, 277-298.
- Shames, G. H., & Florance (1980). *Stutter-free speech; A goal for therapy*. Columbus, OH: Charles E. Merrill.
- Sheehan, J. G. (1970). *Stuttering: Research and therapy*. New York, NY: Harper & Row.
- Sheehan, J. G. (1980). Problems in the evaluation of progress and outcome. *Seminars in Speech, Language, and Hearing* 1 (4), 389-401.
- SPSS Inc. (1998). *SPSS Base 9.0 for Windows User's Guide*. SPSS Inc., Chicago IL.
- Starkweather, C. W., & Gottwald, S. R. (1993). A pilot study of relations among specific measures obtained at intake and discharge in a program of prevention and early intervention for stuttering. *American Journal of Speech Language Pathology*, 2, 51-58.
- Starkweather, C. W., Gottwald, S. R., & Halfond, M. M. (1990). *Stuttering prevention: A clinical method*. Englewood Cliffs, NJ: Prentice-Hall.
- Stephenson-Opas, D., & Ratner, N. B. (1988). Maternal speech rate modification and childhood stuttering. *Journal of Fluency Disorders*, 13, 49-56.

- Van Riper, C. (1936). Short articles and notes: The effect of penalty upon frequency of stuttering spasms. *Pedagogical Seminary and Journal*, 193-195.
- Van Riper, C. (1963). *Speech correction principles and methods*. Englewood Cliffs, NJ: Prentice-Hall.
- Van Riper, C. (1973). *The treatment of stuttering*. Englewood Cliffs, NJ: Prentice-Hall.
- Webster, R. (1975). *The precision fluency shaping program: Speech reconstruction for stutterers*. Roanoke, VA: Communication Development Corporation.
- Wertheim, E. S. (1972). Ego dysfunction in stuttering and its relationship to the subculture of the nuclear family: A predictive study based on the bio-adaptive theory of stuttering II. *British Journal of Medical Psychology*, 46, 155-180.
- Westby, C. (1994). Multicultural issues. In J. B. Tomblin, H. L. Morris, & D. C. Spriestersbach (Eds.), *Diagnosis in speech-language pathology* (pp. 29-52). San Diego: Singular Publishing Group.
- Wyatt, G. L., & Herzan, H. M. (1962). Therapy with stuttering children and their mothers. *American Journal of Orthopsychiatry*, 32 (4), 645-659.
- Yaruss, J. S. (1999). Utterance length, syntactic complexity, and childhood stuttering. *Journal of Speech, Language, and Hearing Research*, 42 (2), 329-344.
- Yaruss, J. S., & Conture, E. G. (1995). Mother and child speaking rates and utterance lengths in adjacent fluent utterances: Preliminary observations. *Journal of Fluency Disorders*, 20 (3), 257-278.
- Zebrowski, P. M. (1993). Parents' judgments of children's fluency. *Seminars in Speech and Language*, 14 (3), 192-201.

Zebrowski, P. M. (1995). Temporal aspects of the conversations between children who stutter and their parents. *Topics in Language Disorders, 15* (3), 1-17.

Zebrowski, P. M., & Schum, R. L. (1993). Counseling parents of children who stutter. *American Journal of Speech-Language Pathology, 65-73.*

VITA

Christa Sandberg was born in Victoria, Texas, on May 13, 1979. She is the daughter of Nancy and David Penry and Alan and Trudie Sandberg. After completing her work at Victoria High School, Victoria, Texas, in 1997, she enrolled at Southwest Texas State University in San Marcos, Texas. She received the degree of Bachelor of Science in Communication Disorders from Southwest Texas State University in May of 2001. In June of 2001, she was accepted into the Graduate School at Southwest Texas State University, San Marcos, Texas.

Permanent address: 311 Chimney Rock
Victoria, TX 77904

This thesis was typed by Christa Sandberg.

