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I am submitting herewith a thesis written by Cynthia Grigsby-Meyers entitled "Pragmatic Errors and Frequency of Disfluency in Three Year Old Nonstutterers." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Speech Pathology.

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PRAGMATIC ERRORS AND FREQUENCY OF DISFLUENCY IN THREE YEAR OLD NONSTUTTERERS

A Thesis

Presented for the

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Degree

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By

Cynthia Grigsby-Meyers

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DEDICATION

This thesis is dedicated to my parents, Carl and Audrey Grigsby, who have encouraged me throughout my life to strive for excellence. They have provided a solid network of support and have encouraged me to pursue all areas of interest. Without their love and dedication this thesis might not have been possible.

CRANES CREST

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ABSTRACT

The purpose of this investigation was to examine the relationship between pragmatic errors and the frequency and location of disfluency in the speech of three-year-old nonstutterers. Eight male and two female nonstutterers between the ages of 3:0 and 3:11 were selected as subjects for this study.

This study assessed the linguistic means of communicative intentions by categorizing responses according to Dore's (1978) classification of communicative speech acts in three-year-old nonstutterers. The investigator used carrier phrases and object stimuli attempting to elicit verbal responses from each subpart of the seven conversational speech act categories- requests, responses to requests, descriptions, statements, acknowledgements, organizational devices, and performatives. A minimum of fifty spontaneous utterances were recorded for each subject following the elicited speech sample. Disfluencies for each subject were identified according to Johnson's classification of disfluent speech (1961).

This investigation examined the relationship between pragmatic errors and the frequency of disfluency in a sample of ten three-year-old nonstutterers. The following conclusions were drawn on the basis of the results:

1. A significant relationship existed between the frequency of disfluency, both percent disfluent words and percent disfluent utterances, and pragmatic errors in this sample of three-year-old nonstutterers speech.

2. No significant relationship existed between mean length of utterance and percent disfluent words in this sample of three-year-old nonstutterers.

3. Disfluencies in this sample of three-year-old nonstutterers' speech tended to occur in utterances that are pragmatically inappropriate both in Speaker/Initiator and Listener/Respondent conversational roles.

4. Three-year-old nonstutterers, in this sample, tended to be more disfluent in the Speaker/Initiator conversational role, which comprised 36.6% of the total speech output, than in the Listener/Respondent role.

5. Three-year-old nonstutterers in the Listener/Respondent role tended to be most disfluent when answering wh-questions and least disfluent when answering yes/no questions and making declarative statements.

6. Three-year-old nonstutterers in the role of Speaker/Initiator were more disfluent when asking wh-questions and making declarative statements than when asking yes/no questions.

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CHAPTER 1

INTRODUCTION, REVIEW OF THE LITERATURE, SUMMARY AND STATEMENT OF THE PROBLEM

I. INTRODUCTION

Disfluencies in the speech of normal children have been examined and compared with disfluencies in the speech of stuttering children (Silverman, 1972a). A relationship has been shown to exist between normal disfluency and stuttering in the speech of young children. Characteristics present in the speech of stutterers are also present in the speech of nonstuttering children. Several aspects of relationships between language development and disfluency have been carefully examined such as syntax, sentence structure, grammatical complexity, and linguistic variability.

Recent research in the area of pragmatics, which is defined as the effective use of language in context, substantiates the importance of pragmatic assessment and the effects of pragmatics upon general language development skills. Studies have shown fluency varies with situational contexts; however, at this particular time no one has examined the effects of the pragmatic use of language on the frequency of disfluency in the speech of young children. Pragmatics has only recently received considerable attention in the field of Speech Pathology, but its impact on language competency appears significant. Because fluency varies depending upon situational contexts, it is reasonable to believe that fluency will also vary with the child's ability to convey his/her communicational intentions depending upon variations in situational contexts.

This ability to convey intentions in contextual situations is called pragmatics.

The purpose of this investigation was to determine whether a relationship exists between pragmatic competency, i.e. effective use of language in context, and frequency of disfluency in the speech of normal three-year-old children.

II. REVIEW OF THE LITERATURE

The review of the literature in this chapter covers four specific topics: first, the relationship between normal disfluency and early stuttering; second, variations in frequency of normal disfluency; third, the influence of language structure and development on disfluency frequency; and, fourth, pragmatics, its relationship with language, and pragmatic assessment.

The Relationship Between Normal Disfluency and Early Stuttering

The main purpose of this section is to consider whether a relationship exists between stuttering and normal disfluency in young children. This summary includes research to support the assumption that characteristics present in the speech of stutterers are also present in the speech of nonstuttering children.

There is considerable research to support the claim that the types of disfluency most typical of stuttering are also found in the speech of nonstuttering children. In 1959, Egland compared the nature and frequency of various types of disfluencies for nonstuttering and stuttering five- and six-year-old children. Egland found that nonstuttering five- and six-year-old children exhibit all types of disfluencies in their speech,

not just repetitions. The types of disfluencies found for both groups included "stallers," broken words, prolongations, and repetitions. Repetitions and "stallers" ranked highest in frequency of occurrence for the nonstuttering children. Repetitions were associaated with the production of unfamiliar polysyllabic words. For both groups, disfluencies occurred more frequently at the beginning of words and sentences. Egland found similarities between the stutterers' and nonstutterers' disfluencies in both types and location of the disfluency.

Johnson, et. al. (1959) analyzed recorded speech samples of sixty-eight male and twenty-one female stutterers ranging in age from 2:6 to 8:2 years. They selected an identical number of nonstutterers matched for age, sex, and family socioeconomic status. The speech samples were analyzed for the occurrence of eight types of disfluencies: interjections, sound and syllable repetitions, word repetitions, phrase repitions, revisions, incomplete phrases, broken words, and prolonged sounds. This study did not, however, analyze the occurrence of silent intervals which are frequently cited as examples of early stuttering. Results indicated that all eight types of disfluencies exhibited by stutterers were also present in the speech of nonstutterers. Johnson theorized that stutterers appear to exhibit the same behaviors as nonstutterers, but that the frequency of these behaviors is greater for the stutterers.

Silverman (1972a) found that the type of disfluencies present in stuttering speech frequently occurred in the speech of ten four-year-old normal speaking children. Nearly all of the children exhibited part-word repetitions and prolongations as the most frequently occurring types of

disfluences on at least one out of three days of the speech sample period.

Yairi, Lowery, and Coppola (1979) examined the one year development of fluency for thirty-five two-year-old children and found the disfluencies to resemble stuttering in many instances. They classified the disfluencies as part-word repetitions, whole-word repetitions, and prolongations. They found that the instances of these disfluencies progressively diminished with age.

Westby (1979) studied the disfluencies of three groups of children in kindergarten and first grade: ten disfluent nonstutterers, ten stutterers, and ten highly disfluent nonstutterers. She found that the stutterers and highly disfluent nonstutterers had more disfluencies of all types than did the disfluent nonstutterers. The stutterers and highly disfluent nonstutterers were very similar in the amount and types of stuttering. The most frequent types of disfluencies for both groups were interjections and word repetitions. Interjections were the most typical type of disfluency for disfluent nonstutterers. This suggests that a similarity of disfluency characteristics exists between the speech of highly disfluent nonstutterers and stutterers.

Yairi (1981) examined the disfluencies in the speech of nonstuttering two-year-olds. The disfluencies for this age group included part-word repetitions, whole-word repetitions, phrase repetitions, interjections, revisions, and some forms of hesitancy behaviors. The most common disfluency type for nonstutterers was the single repetition of short segments, which was also found in previous research to be the most common type of disfluency for stuttering children.

The consistency effect was first observed by Johnson and Knott (1937). They found that the words on which stutterers were disfluent while reading a brief passage continued to be consistently disfluent after ten successive readings. The distribution of disfluencies were consistent in repeated readings for each subject tested. The consistency effect has been observed in the disfluencies of both stutterers and nonstutterers (Bloodstein, 1981). Neeley and Timmons (1967) observed the disfluencies of five- to eight-year-old nonstuttering children. They found the consistency effect to be present; however, it was slightly lower in magnitude than the consistency of stutterers of a comparable age. This suggests that the stimulus conditions affect the disfluency of nonstutterers in a similar pattern as they do the disfluency of stutterers.

To summarize, characteristics present in the speech of stutterers are also present in the speech of nonstuttering children. The types of disfluencies most typical of stuttering are similar to those most typical in the disfluencies of nonstutterers. For both stutterers and nonstutterers, the distribution of disfluencies were consistent in repeated readings for each subject.

Variations in Frequency of Normal Disfluency

Many recent investigations have studied the variations of frequency in normal disfluency which is associated with the speaking situation of listener context. The situations in which sixty-two two- to five-year-old nonstutterers exhibited repetitions during one hour of free play in a preschool were observed by Davis (1940). Repetitions were found to occur with higher frequency under certain conditions. Some examples

were when the child was extremely excited, wanted the attention of the teacher or peers, wanted a toy from another child, or was told to change an activity. The repetitions in the speech of nonstutterers were found to occur in the same conditions in which they occurred for many stutterers.

Silverman (1971) observed three four-year-old nonstutterers in three different speaking situations: in their own homes speaking with family members, in a structured speaking task, and in a preschool classroom during a nonstructured free play period. Recordings were taken of each subject in each speaking situation. The total number of disfluencies were evaluated and compared. Results indicated that the frequency of the childrens' disfluencies were relatively stable from day to day. They were, however, found to vary systematically on the basis of situations. There was a higher frequency of disfluencies in the home than in either the preschool free play period or in the structured interview.

In 1972, Silverman conducted a follow-up investigation with ten preschool children. The procedures were changed to include only the structured interview with an adult and the spontaneous peer speech sample on three different days spaced one week apart. A determination and calculation of the duration and frequency of the disfluencies was compared for each subject in each sample situation. Silverman found that more disfluencies occurred during the structured interview than during the spontaneous peer play in a classroom each day.

Demo (1983) compared the frequency and types of disfluencies with linguistic length and complexity in five-year-old male nonstutterers. She reported significantly more disfluencies in structured speaking

difference in the frequency of disfluency for samples taken on three separate days. The most frequently occurring types of disfluency for the structured speaking situation were interjections, revisions, and word-repetitions. In the spontaneous speaking situations the most frequently occurring types of disfluency were past-word repetitions, word repetitions, and interjections. Demo reported significantly higher Length Complexity Index (LCI) scores and more disfluencies in the structured speaking situation, than in the spontaneous speaking situation.

An investigation was made by Martin, Haroldson, and Kuhl (1972) with ten children between the ages of 3:5 and 4:5 years. Each child conversed for ten minutes with a "talking puppet" and for ten minutes with an adult woman. The total number of disfluencies and the total number of words spoken by each child was calculated for each situation. They found no significant differences in the percent disfluent words by the children between the adult and puppet speaking situations. However, the puppet was more successful in eliciting a larger speech sample, with more words produced, than was the adult.

In summary, with the exception of the Martin, Haroldson, and Kuhl (1972) study, the frequency of disfluency in the speech of nonstuttering children varies according to situational factors. Under conditions of excitability, emotional duress, or the desire to act out intentions, disfluencies increased for nonstutterers. When comparing two different speaking situations, speaking with peers in the classroom during free play and speaking with an adult in a structured interview, Silverman found that more disfluencies occurred in the more structured adult interview. Silverman's study; however, examined two variables: listener

context (adult vs. child) and situational context (structured interview vs. informal play). It is difficult to conclude whether the increase in disfluencies was the result of a combined effect of both variables or simply the effect of one independent variable. In the Martin, Haroldson and Kuhl (1972) study, there were no significant differences in the percent of disfluencies between the adult and puppet conversations; however, any conclusions drawn from their results are difficult to make. First, the puppets voice was merely a modification of the adult woman's voice which might have increased the expected percent of disfluencies, and second, the increase in the length of the speech sample elicited by the puppet could have increased the percent of disfluencies per lengthy utterance.

Normal Disfluency as it Relates to Language Proficiency and Development

The influence of language development and linguistic factors on the frequency of disfluency has been examined extensively in previous research studies. Areas of investigation have included research in articulation, general language proficiency, syntax, grammatical factor,and length and complexity of utterance.

Muma (1971) observed the syntactic language usage of highly fluent and highly disfluent four-year-old nonstutterers with a transformational analysis of their language samples. Basically, Muma reported no significant relationship between a child's disfluency and syntactic language usage; however, the disfluent group exhibited shorter communication units and more single base transformations. The highly disfluent group also exhibited fewer double base transformations than did the highly fluent group.

Caldwell (1971) studied the relationship between the number of disfluencies and articulation and language proficiency in four-year-old nonstutterers. Measurements of articulation and language proficiency were made using the Templin-Darley Screening Test of Articulation and the Michigan Picture Language Inventory, respectively. Results indicated that children who tested higher in both comprehension of language structure and articulation, exhibited fewer disfluencies than the children with lower scores.

Helmreich and Bloodstein (1973) investigated the relationship between the grammatical parts of speech and the disfluencies of nonstuttering four-year-old children. They identified the presence of the grammatical factor in nonstuttering preschoolers. There was no significant tendency for disfluency on nouns, verbs, adjectives, and adverbs. The subjects exhibited a marked tendency toward fewer disfluencies than expected on nouns and verbs. The most significant finding from this investigation was an increased number of disfluencies on pronouns and conjunctions.

Tornick and Bloodstein examined the effects of sentence length and complexity upon the frequency of disfluency for young stutterers. They found significantly fewer disfluencies on shorter sentences than on identical portions of longer sentences. They concluded that sentence length and complexity significantly increased the frequency of disfluencies for young stutterers.

Westby (1974) analyzed 100-word utterance-length language samples from stuttering and nonstuttering kindergarten and first grade children. Three groups included ten stutterers, ten highly disfluent nonstutterers,

and ten normally disfluent nonstutterers. The Developmental Sentence Score (DSS) was used to analyze the language samples. Westby found that both the stuttering and highly disfluent groups exhibited more disfluencies than the normally disfluent groups, scored consistently lower on receptive vocabulary measures, and exhibited significantly more grammatical errors than the normally disfluent group. This led Westby to hypothesize that stuttering and highly disfluent children are in a stage of outgrowth from a previously greater language delay. This suggests that a continuum of disfluency characteristics exists between the speech of highly disfluent nonstutterers and stutterers.

Silverman (1975) analyzed the effects of initial phoneme and word length on the number of disfluencies in the speech of nonstuttering preschool boys. The initial phoneme was found to have no influence on disfluency, regardless of whether the phoneme was a consonant or a vowel; however, there was a significant relationship between word length and number of disfluencies. The children exhibited more disfluencies on monosyllabic words than on polysyllabic words. These results suggest a complete reversal from data on adults and older children who tend to exhibit more disfluencies on polysyllabic words than on monosyllabic words.

DeJoy and Gregory (1976) selected samples of the speech from a group of sixty three-five-year old children. They selected ten children with the highest number and ten children with the lowest number of disfluencies of all types and compared both groups of samples with scores on the Developmental Sentence Score (DSS). The ten children with the

highest number of disfluencies scored lower in syntactic maturity on the DSS than did the ten most fluent children.

Haynes and Hood (1977) analyzed speech samples from thirty male and female nonstuttering children between the age of 46-98 months. The Developmental Sentence Score (DSS) was used to determine if a relationship existed between language competency and the number and type of disfluencies. The groups were separated by age and sex to determine if differences existed between the groups: five males and five females (46-50 months), five males and five females (70-74 months), and five males and five females (94-98 months). There was no significant relationship between language competency and the incidence of disfluency for either age or sex groupings.

Colburn (1979) observed the language characteristics of disfluencies in the spontaneous speech of four nonstuttering children through the course of their language development. There was a weak interaction between disfluency occurrences and types with semantic and syntactic structures. Although the relationship was not significant, this trend supports the hypothesis that developmental disfluencies are more strongly associated with syntactic development than lexical knowledge. Colburn stated that a "practice effect" was evidenced by the occurrence of developmental disfluencies on those syntactic structures that the child was just beginning to use in his/her speech in contrast to those structures that were completely new in his/her syntactic development.

Pearl and Bernthal (1980) observed grammatical complexity and its influence on the disfluency behavior of three- and four-year-old preschool children. A series of 30 sentences ranging in grammatical

complexity were modeled by the examiner. They reported that when the sentence complexity increased, the number of disfluencies also increased. More disfluencies were found to occur on passive sentences than on any other type of sentence, specifically interjections, word repetitions, and revisions. Pearl and Bernthal found that a relationship existed between grammatical complexity and disfluencies. They further concluded that grammatical complexity affects the type and frequency of disfluencies in preschool children.

Gordon (1982) examined the effects of syntactic complexity on the number of disfluencies of sentence imitation and sentence modeling tasks for five-year-old nonstutterers. Results indicated no significant difference in the number of disfluencies among the sentence constructions on the sentence imitation task. However, Gordon reported a significant difference in the number of disfluencies occurring among the sentence construction on the sentence modeling task. Furthermore, there were significantly more disfluencies on the passive sentence construction than on all other types except the HAVE construction.

Colburn and Mysak (1982a) investigated the characteristics of developmental disfluencies among nonstuttering preschoolers. Language development was observed from one-word utterances to multi-word utterances focusing on the occurrence of developmental disfluencies as syntax emerges in a child's language. Four mean length of utterances (MLU) were calculated for each child and compared with the frequency and distribution of specific disfluency types. At each MLU level, there were characteristic and systematic changes in the frequency and type of disfluency. Therefore, Colburn and Mysak concluded that disfluencies

normally exist in the speech of nonstuttering preschoolers during the emergence of language.

Many linguistic factors affect the frequency of disfluency in language developing children. Muma (1971) found no relationship between syntactic language use and frequency of disfluency; however, there was a lack of developmentally more complex transformations in the highly disfluent group. A relationship has been shown to exist between language and articulation proficiency and frequency of disfluency (Caldwell, 1971). Helmreich and Bloodstein (1973), while examining the grammatical factor, found an increased number of disfluencies on pronouns and conjunctions. Silverman (1975) found a significant relationship to exist between word length and number of disfluencies. Both highly disfluent nonstutterers and stutterers scored consistently lower on receptive vocabulary measures and exhibited significantly more grammatical errors than did normally disfluent children. There was conflicting evidence, using the Developmental Sentence Score (DSS), as to whether a relationship exists between language competency and frequency of disfluency. Colburn (1979) observed a "practice effect" with the occurrence of developmental disfluencies on those syntactic structures that were just beginning to emerge in a child's syntactic development. Grammatical complexity was found to affect the type and frequency of disfluency in preschool children. Language development has a significant effect on the frequency of disfluency in preschool children. The children whose language exhibited delays in articulation, general language proficiency, and syntax also were characterized by highly disfluent speech.

Pragmatic Assessment

Pragmatics has recently received considerable attention in the field of speech pathology. Within the past decade, extensive research has been conducted in order to define pragmatics adequately and, more importantly, to determine the relationship between pragmatic competency and language development.

Pragmatics involves the effective use of language in order to convey the speaker's intent to the listener in a dynamic context (Dore, 1977). Bates (1976) defines pragmatics as "the rules which govern the use of language in context." Rees (1978) states that language is learned exclusively in the context of interactive dialogue.

Language, according to Hersor, Berger, and Nicol (1980), is a code for communication which is most readily learned in a conversational interchange within a social context. Failure to participate in the communicative interchance not only leads to impaired social responsiveness, but also it increases stereotyped responses which interfere with learning and cognitive performance. Pragmatics is instrumental in language learning, social interactions, general cognitive abilities, and further learning at later stages.

Bates (1976) views all language as pragmatic because it is acquired and used within a social context. Therefore, meanings are constructed by children as attempts to engage in some form of social interaction. Bates concludes that each act that is used to construct it's meaning is actually a pragmatic act that is based on interaction schemes constructed by the child in order to understand and conceptualize their reality.

Dore (1977) distinguishes between what is said grammatically, that is, the literal interpretation of the utterances' meaning, with what is said pragmatically, which refers to the intentions of the speaker and the relationship between the speaker's utterance and the context with which it is spoken.

Many pragmatic language functions have been identified during the first years of life (Bates, 1976; Dore, 1974; and Halliday, 1975). They include illocutionary acts: turn-taking, giving, sharing; perlocutionary acts: looking, laughing, smiling; and locutionary acts: development of first words.

As the development of language structure and usage continues, pragmatic skills consist of four basic elements:

1. Performatives: which are present in the deep structure and signal the speaker's intent to produce a specific type of sentence formation

2. Presuppositions: are the speaker's general assumptions about the listener and the context which determine what and how the speaker will say

3. Postulates: specific types of presuppositions that are held by speakers of a particular language, in order to appropriately encode the nature of the conversation

4. Propositions: statements which includes a predicate and an argument that shows a relationship between these two elements

In order to use language appropriately, a child must be able to: ask and answer questions, comment on problems, give directions, suggest actions, give specific orders, speculate about the world, and be able to

joke. These manipulations of the language must be used appropriately in order to use the higher, more complex argumentational forms of the adult world (Johnson, Johnson, and Weinrich, 1984).

Cazden (1972) explains that a single communicative intention can be expressed in multiple forms that may be synonymous in their literal meaning. The following intentions convey the same meaning:

1. Imperative: "Please turn on the lights."
2. Question: "Are the lights out?"
3. Declarative: "It sure is dark in here."

Conversely, a single surface form sentence can express two totally different intentions:

Example: "I am hungry."
1. spoken by a poor, starving person
2. spoken by a child delaying their bedtime

Initially the concept of speech acts was introduced by John Austin (1962) who theorized that communication is not composed of words and sentences, but of speech acts. Austin divided all speech acts into locutions: prepositions, illocutions: intentions, and perlocutions: listener's interpretation. Later, Searle (1965) elaborated on Austin's concept of speech acts by differentiating speech acts on the basis of the purpose, interest and status of participants, verb forms, and strength of the illocutionary act. Searle proposed his own taxonomy of speech act categories which include: representatives--statements that convey a belief or disbelief in some preposition, directives—attempts to influence listener to act, commissive—commitments of speaker to future course of action, expressive—expression of psychological state,

and declaratives--statements of fact that presume to change the state of affairs. Austin and Searle, however, were primarily concerned with adult language.

Dore (1975) has repeatedly investigated the emergence of communicative intents and found that not only is a systematic assesment of pragmatic development possible, but that this pragmatic information can yield considerable insight into the acquisition and development of language. Dore has studied the relationship between pragmatic language and the emergence of language. Dore's conversational speech acts categories (1978) can be used as a linguistic assessment of a child's pragmatic manipulation of language in context.

According to Gallagher and Prutting (1983), communicative interactions can be categorized into two distinct conversational roles, speaker and listener. These roles can be further divided into the initiator of the conversation, speaker/initiator, and the respondent to the conversational initiator, listener/respondent. These roles determine what type of interaction will take place. As the initiator of conversational interchange, speech becomes more propositional and self directed. The listener, while responding to cues from the conversational initiator, uses speech that is generally less propositional and sometimes more stereotypical (Rice, 1980).

Folger and Chapman (1976) examined the correspondence between the imitative behavior of parents and their children and between certain pragmatic functions of parent's speech and children's imitations. They coded the utterances by pragmatic function using a modified version of Dore's pragmatic classification of communicative speech acts (1978).

Folger and Chapman stated that Dore's system of pragmatic function assessment was the most comprehensive tool available at that time (1978).

Dore's system is also presented by Roth and Spekman (1984) in a modified and condensed version. They indicate its usefulness and appropriateness as a clinical tool for assessment of pragmatic adequacy of a linguistic nature.

Pragmatic competency has been extensively examined in the speech of language impaired chidren. Snyder (1976) examined two aspects of pragmatics, performative and presuppositional characteristics, in the speech of fifteen normal children (11-18 months). The children in each group were matched for MLU's and had comparable lexicons. Analysis of performatives revealed that the normal children used linguistic means more frequently to communicate declarative and imperative intents; whereas, the language impaired children more frequently used non-linguistic means of communication. Analysis of presuppositions indicated that normal children encoded the informative contextual element with both linguistic and non-linguistic means; however, the language impaired children were primarily limited to signaling the informative element with non-linguistic means. Snyder concluded that although the normal and language impaired children were matched for mean length of utterance and size of lexicon, the language impaired children's pragmatic level of language was deficient.

Watson (1977) examined conversational participation in parent-child interactions for twenty normal children (4:7 to 5:5 years) and for fourteen language imparied children (3:11 to 5:11 years). The language impaired children showed a greater tendency to continue the topic that

was previously said by the parent than the normal children. Primarily, the continuations of the topic were affirmations or denials of the parental utterance. The language impaired children infrequently asked for clarifications and rarely made informations type comments about the topic. Watson concluded that language impaired children are conversationally nonasserative.

To summarize, pragmatics is the use of language in order to convey intentions to the listener in an everchanging environment. Pragmatics has recently received attention in the field of speech pathology primarily because of its importance in language development. Assessment of pragmatic development of language may be examined through the emergence of communicative intentions (Dore, 1975). Some studies of language impaired children have shown a deficient pragmatic level of language despite normal scores on standardized measures of language.

III. SUMMARY AND STATEMENT OF THE PROBLEM

Previous studies have shown that characteristics found in the speech of young stutterers are also present in normal disfluencies of young nonstuttterers. A relationship has been shown to exist between stuttering and normal disfluencies in young children (Silverman, 1972a; Yairi, Lowery, and Coppola, 1979; Westby, 1979). Language development and usage has been shown to influence the frequency of disfluency in young nonstutterers (Silverman, 1973; Pearl and Bernthal, 1980; Colburn and Mysak, 1982a). Variations in speaking situations by listener and situational context also affect the frequency of disfluency in young children (Silverman, 1972; Bloodstein, 1981).

In the field of speech pathology, pragmatics has become an area of great interest because of its importance in language development and other areas of cognitive function. Research in pragmatics has determined that the use of language is instrumental in language acquisition, social interactions, general cognitive abilities, and learning at later stages in life (Hensor, Berger, and Nicol, 1980). Pragmatics involves the effective use of language in conveying intentions within situational contexts. Although previous research suggests that disfluency varies according to situational context, the relationship between pragmatic competency and its influence on the frequency of disfluency has not yet been examined.

Results from Demo's (1983) study suggest that a relationship exists between situational variations in disfluency and LCI scores. Colburn and Mysak (1982a) found a relationship to exist between the frequency and type of disfluency with each MLU level. One purpose of this investigation was to examine the relationship between the mean length of utterance and the frequency of disfluency in three year old nonstutterers. Since mean length of utterance is a gross, developmental language index (Owens, 1984), a comparison between MLU and pragmatic errors was made to determine which is a better predictor of frequency of disfluency in three-year-old nonstutterers.

The location and co-occurrence of disfluency has been examined in previous studies of language development (Silverman, 1975; Gordon, 1982). It was reasonable to assume that a co-occurrence might exist between disfluencies and pragmatic errors in three year old nonstutterers. Because

communicative interactions occur in two separate speaking roles, speaker/initiator and listener/respondent (Gallagher and Prutting, 1983), it was also reasonable to believe that the co-occurrence of disfluencies and pragmatic errors should be examined in each separate conversational role.

The purpose of this study was to examine the relationship between pragmatic competency and the frequency of disfluencies in the speech of normal three-year-old children. The following questions were addressed:

1. What is the relationship between frequency of pragmatic errors and frequency of disfluency in the speech of normal three-year-old children?
2. What is the relationship between mean length of utterance (MLU) and frequency of disfluency in the speech of normal three-year-old children?
3. What is the co-existence of pragmatic errors and disfluencies in the speech of three year old nonstutterers in:
   a. the speaker/initiator conversational role?
   b. the listener/respondent conversational role?

CHAPTER II

METHODS AND PROCEDURES

I. METHODS

Subjects:

Ten children between the ages of 3:0 and 3:11 participated in this investigation. The subjects were selected from day-care centers in Knoxville, Tennessee. All ten subjects in this study met the following criteria: (1) age within the range of 3:0 and 3:11 years; (2) normal hearing acuity based on observations of the parents and a hearing screening test performed by the investigator; (3) absence of structural or functional oral abnormalities as judged by the investigator; (4) intelligible speech skills based on judgements of the examiner; and (5) classification as a nonstutterer based on observations of the investigator and parents.

Initial screenings were conducted to determine which children met the selection criteria and would serve as subjects for this investigation. Hearing acuity was determined by a pure tone audiometric screening test performed by the investigator. Bilateral hearing levels were accepted at 25 dB or below for purposes of this investigation.

In order to screen out deviations in oral structure and function, oral-peripheral examinations were conducted. Major structures such as lip, tongue, and palate including lip and tongue movements were judged as adequate by the investigator. Throughout the screening procedure, judgements regarding the absence of stuttering and the intelligibility of speech were made by the investigator and confirmed by the parents.

Although careful consideration was given to the use of a language screening measure as a subject selection criteria, it was rejected because of the implied relationship between language proficiency and pragmatic adequacy. The rationale was that if a child was rejected on the basis of inadequate language proficiency, he/she might, in fact be deficient also in pragmatics, which is specifically the area that is in focus in this investigation. If we had eliminated those who failed the language screening criteria, we might have eliminated those children who would provide vital information about the relationship between pragmatic competency and normal disfluencies. In order to examine the relationship between language proficiency and pragmatic adequacy and to determine which has a greater effect on disfluent speech, the mean length of utterance (MLU) was calculated for each subject after the speech sample has been recorded (Brown, 1973).

II. PROCEDURES

Experimental Methods:

One speech sample was tape recorded in a clinical therapy room for each child. A minimum of twenty utterances was recorded before the pragmatic conversational speech sample was elicited. According to Roth and Spekman (1984), there are three levels at which pragmatic skills can be analyzed: communicative intentions - the intentions that a speaker wishes to convey; presuppositions - the speaker's message as it relates to the information needs of the listener; and the social organization of discourse - the reciprocal nature of the communicative and social interaction (Roth & Spekman, 1984). The communicative intention may be

assessed according to gestural, paralinguistic, or linguistic means. This investigation attempted to assess the linguistic means of the communicative intentions as it more closely parallels that of normal spoken language development. Dore (1978) categorized the communicative intentions of three-year-old children during informal play and structured classroom activities into seven major conversational speech act categories based on grammatical form, illocutionary function, and conversational contingency. They include requests, responses, descriptions, statements, acknowledgements, conversational devices, and performatives. The following is a detailed listing of Dore's seven conversational act categories and their specific subparts:

I.	Requests for action, information, or acknowledgement	RQYN	Yes/No questions seeking true-false judgements
		RQWH	Wh-questions seeking factual information
		RQCL	Clarification questions about the content of a prior utterance
		RQAC	Action requests seeking that the listener do/stop doing something
		RQPM	Permission requests
		RQRQ	Rhetorical questions seeking acknowledgement from listener to allow speaker to continue
II.	Responses to Requests	RSYN	Yes/No answers supplying true-false judgement

	RSWH	Wh-answers supplying solicited factual information
	RSCZ	Clarifications supplying the relevant repetition
	RSCO	Compliances expressing acceptance denial,or acknowledgement of a prior action or permission request
	RSQL	Qualifications supplying unexpected information
	RSRP	Repetitions of part of previous utterance
III. Descriptions of Verifiable past and present facts	DSID	Identifications, labelling objects, events, etc.
	DSEV	Descriptions of events, actions and processes
	DSPR	Descriptions of properties, traits, and conditions
	DSLO	Descriptions and expressions of locations and directions
	DSTI	Reporting of times
IV. Statements of facts, rules, attitudes, feelings and beliefs	STRV	Rules express procedures, definitions, facts, etc.
	STEV	Evaluations express attitudes, judgements, etc.

		STIR	Internal reports express emotions, sensations, and mental events
		STAT	Attributions report beliefs about another's internal state
		STEX	Explanations express reasons, causes, and predictions
V.	Acknowledgements recognize and evaluate responses and nonrequests	ACAC	Acceptances neutrally recognize answers and nonrequests
		ACAP	Approval/agreements positively recognize answers or nonrequests
		ACDS	Disapproval/disagreements negatively evaluate answers or nonrequests
		ACRT	Returns acknowledge rhetorical questions and some nonrequests, returning floor to speaker
VI.	Organizational Devices regulate contact and conversation	ODBM	Boundary markers
		ODCA	Calls solicit attention
		ODSS	Speaker selections label speaker of next turn
		ODPM	Politeness markers
		ODAC	Accompaniments maintain verbal contact

VII.	Performatives accomplish facts by being said	PFPR	Protests register complaints about listener's behavior
		PFJO	Jokes display nonbelief toward a proposition for humorous effect
		PFCL	Claims establish right by being said
		PFWA	Warnings alert listener to harm
		PFTE	Teases, annoys, or playfully provokes listener

The investigator verbally explained the format for the presentation of the visual stimuli to the subject. In sections I, II, VI, and VII, a puppet and box were utilized for the object stimuli. In section III, a plastic cow was presented to the subject. In sections IV and V, a Rocket Ship Board Game with two player pieces, a dog and a whale, and a spinning dial were utilized for the object stimuli.

The investigator used the following carrier phrases attempting to elicit the seven conversational speech act categories and each of their respective subparts. The speech sample responses are examples of the possible intended responses; however, because of the spontaneous nature of this speech sample, they are meant only as sample responses.

Elicitation of Speech Sample		Sample Speech Response
I. Requests-puppet and box		
RQWH:	I've got something inside this box.	What's in there?
RQCL:	It's a puwwet (unclear).	What did you say?
RQPM:	A puppet.	Can I see it?

RQAC:	He's going to take a block. Which one should he take?	Get the purple one. Like this. See.
RQYN:	(hide puppet and block) What do you think he's doing with the block?	Is he eating it? Is he hiding it?
RQRQ:	I have a puppet at home.	You know what, I do too.

II. Responses-puppet and box

RSYN:	Is this puppet a girl?	No, its a boy.
RSWH:	(behind my back) Where is he?	He's in back of you.
RSCZ:	Where is he?	I said behind you.
RSCO:	Do you want to see him? (hand him to child)	OK, yes.
RSQL:	Why is he behind your back?	He's not. I didn't put him there, see, he's here.
RSRP:	Where is he again?	He's here.

III. Descriptions-cow and box

DSID:	What is this?	It's a cow.
DSPR:	Tell me what it looks like.	It's fat and has a tail.
DSLO:	(places cow in box) Where is the cow?	In the box.
DSEV:	Can you put the cow in the box? What are you doing?	Putting the cow in the box.
DSTI:	Have you ever seen a cow? When?	Today.

IV. Statements-Game Board

STRV:	I'll be both the dog and whale.	No, you can't be both.

STEV:	Do you want to be the dog?	No, I'll be the whale, OK?
	OK.	Good, I like the whale.
STIR:	Who do you want to win?	I want the whale to win.
STAT:	Who wants to win the most?	The whale wants to win the most.
STEX:	Who will win?	The whale will win.

V. Acknowledgements-Game Board

ACAC:	Are we playing a game?	Uh huh.
ACAP:	Is this a whale?	Yes.
ACDS:	Is this a whale?	No, it's a dog.
ACRT:	You tell me what this is and then I'll tell you what it is.	It's a whale. Now, you say it.

VI. Organization Devices-puppet and box

ODBM:	(puppet talks) Hello, _____.	Hi.
ODCA:	My name is BOBO.	Hey, Bobo.
ODSS:	Bobo has something to give you. (hand sticker) What do say?	Thank you, Bobo.
ODAC:	What is Bobo?	Bobo's a puppet.

VII. Performatives-puppet and sticker

PFPR:	Bobo wants to take your sticker.	No. Stop.
PFCL:	(Bobo grabs for it)	That's mine.
PFWA:	Bobo's going to jump on	He's going to jump on your head.

PFJO: your head. Watch out. You make him do something funny. Watch out.

PFTE: I'm going to get him. I've got him. You can't have him.

Speech samples for each child were tape recorded using a Panasonic Mini-V portable cassette recorder and later transcribed by the investigator. Only intelligible, target related utterances were scored. A language sample (minimum of 50 utterances) was recorded in order to calculate the mean length of utterance (MLU).

Mean Length of Utterance is the average length of a speaker's utterance in terms of morphemes. Morphemes were divided according to Brown's (1973) rules for counting morphemes.

Count as one morpheme:

Reoccurrences of a word for emphasis (no, no)

Compound words (birthday)

Proper names (Nancy Sue)

Ritualized reduplications (bye-bye)

Irregular past tense verbs (went)

Diminutives (doggie)

Auxiliary verbs and catenatives (is, gunna)

Count as two morphemes:

Possessive nouns (Tom's)

Plural nouns (kitties)

Third person singular present tense verbs (walks)

Regular past tense verbs (walked)

Present progressive verbs (walking)

Only complete utterances were selected for analysis in this investigation. An utterance was considered complete when a subject and predicate relationship were expressed. Utterances were not rejected when the subject and predicate relationship was expressed in an incomplete grammatical form by adult standards. An expression such as, "Boat gone" would be considered a complete utterance for purposes of this study.

Utterances were divided using inflection, intonation, and pauses, which would signal an end to the communicative response. Initial word conjunctions, such as "and" were excluded unless they were introducing a dependent clause, such as "When my dad comes home..." The conjunction "and" was included in series listings, such as "Steve and Sue and John..." but was excluded after the first occurrence between a series of clauses. For example, in the sentence, "We went home and ate cookies and watched TV," the utterance division would have occurred after the word "cookies". Other conjunctions were included unless they became part of a run-on sentence construction.

A judgement was made by the examiner regarding the usage of each conversational speech act subpart. A pragmatic error was defined as the complete absence, incomplete usage, or inappropriate usage of each conversational speech act subpart. Complete absence might have been characterized by a silence or by the inability to respond to the previous utterance on the part of the subject. An incomplete conversational speech act might have been evidenced as an incomplete response on the part of the subject, such as, "I hope to see...". An example of an inappropriate response might have been, "In the blue house" to the

previous question, "When did you see the dog?" The following scale was used to evaluate each response:

1: the presence and correct usage of the conversational speech act subpart

0_e: pragmatic error - complete absence, incomplete, or semantically inappropriate usage of the conversational speech act subpart

The number of correct usages for each subcategory were summed for each subject. A possibility of thirty six could be assigned for all appropriate usages in each of the seven conversational speech acts.

All utterances were categorized into two conversational roles, Speaker/Initiator and listener/respondent. Speaker/initiator utterances were those in which the subject initiated speech spontaneously and was the conversational leader. Listener/respondent utterances were those in which the subject was responding to conversation proposed by the speaker and was continuing the same conversational topic.

Disfluencies for each subject were identified according to Johnson's (1961) classification system of disfluent speech. The categories were: (1) interjections, (2) part-word repetitions, (3) word repetitions, (4) phrase repetitions, (5) revisions, (6) incomplete phrases, (7) broken words, and (8) prolonged sounds. The number of disfluent words in the elicited speech sample were converted into a words disfluent percent score (number of disfluent words ÷ total number of words x 100) and into a percent disfluent utterances (number of disfluent utterances ÷ total number of utterances x 100).

The rationale for using two measures of disfluency in this investigation was that pragmatics, specifically communicative speech acts,

occurs in both individual words as well as in complex communicative utterances. The percent of disfluent words measure identifies the frequency of disfluencies in individual word segments. The measure for the percent of disfluent utterances identifies the frequency of disfluencies in entire utterance segments. Therefore, both measures for the frequency of disfluencies were justified for the purposes of this investigation.

CHAPTER III

RESULTS AND DISCUSSION

I. RESULTS

Reliability

Intra- and inter-examiner reliability for the identification of disfluencies and for designation of categories in Dore's (1978) pragmatic classification system was determined by use of percent agreement indices (number of agreed measurements ÷ total number of measurements x 100). The recorded responses of three subjects were randomly selected for computing both intra- and inter-examiner reliability measures. Intra-examiner agreement for the identification of disfluencies was 0.96. Intra-examiner agreement for the identification of Dore's conversational speech act categories was 0.87. An ASHA certified speech-language pathologist trained in Johnson's (1961) identification of disfluencies and in Dore's (1978) classification of conversational speech act categories scored the same three randomly selected subject recordings to determine inter-examiner reliability. Agreement was detemined not only on the basis of selection of each speech act category, but also in each speech act category subpart. Inter-examiner reliability yielded a 0.92 agreement index for the identification of disfluencies and a 0.81 agreement index for the identification of pragmatic speech acts.

Results

In order to assess the relationship between pragmatic errors and frequency of disfluency for three year old nonstutterers, the frequency of disfluency for each subject was analyzed in two different ways,

percent disfluent words and percent disfluent utterances. The summary for percent disfluent words and percent pragmatic errors for individual subjects is shown in Table I. The mean percent of disfluent words was 5.92 with a standard deviation (s.d.) of 1.51 and the mean percent of pragmatic errors was 12.62 with a s.d. of 7.44. The range for the number of disfluent words was 7-48 and the range for the total number of words was 159-606. The obtained Pearson Product-Moment Correlation [r= +.76] between percent disfluent words and pragmatic errors was significant at the 0.01 level. The summary of percent disfluent utterances and percent pragmatic errors for individual subjects is shown in Table II. The mean percent of disfluent utterances was 18.49 with a s.d. of 8.82 and the mean percent of pragmatic errors was 12.62 with a s.d. of 7.44. The range for the number of disfluent utterances was 7-42 and the range for the number of utterances containing pragmatic errors was 4-26. The range for the total number of pragmatic utterances was 59-163. The obtained Pearson Product-Moment Correlation [r = +.92] between percent disfluent utterances and pragmatic errors was significant at the 0.01 level.

The relationship between mean length of utterance (MLU)and percent disfluent words was determined with calculations of MLUs for each subject using only spontaneous utterances collected from the language sample (minimum of 50 utterances). The group mean for MLUs was 5.92 with a s.d. of .99. The summary of calculated scores for MLUs and percent disfluent words is shown in Table III. A Pearson Product-Moment Correlation was calculated to determine the relationship between mean length

TABLE I. Percent Disfluent Words and Percent Pragmatic Errors for Individual Subjects on Total Language Samples

	Total Language Sample	
Subject	Percent Disfluent Words	Percent Pragmatic Errors
1	6.11	21.13
2	5.85	9.32
3	7.92	15.95
4	7.35	16.47
5	4.95	5.26
6	7.48	27.08
7	5.93	9.01
8	4.19	8.69
9	6.29	10.17
10	3.10	3.10
Mean	5.92	12.62
s.d.	1.51	7.44

Table II. Percent Disfluent Utterances and Percent Pragmatic Errors for Individual Subjects on Total Language Samples

	Total Language Sample	
Subject	Percent Disfluent Utterances	Percent Pragmatic Errors
1	33.80	21.13
2	15.25	9.32
3	25.77	15.95
4	22.35	16.47
5	9.47	5.26
6	29.17	27.08
7	17.12	9.01
8	11.59	8.69
9	11.86	10.17
10	8.53	3.10
Mean	18.49	12.62
s.d.	8.82	7.43

Table III. Percent Disfluent Words and Mean Length of Utterance (MLU) for Individual Subjects on Spontaneous Language Samples

	Spontaneous Language Sample	
Subject	Percent Disfluent Words	Mean Length of Utterance (MLU)
1	6.11	6.37
2	5.85	6.85
3	7.92	6.16
4	7.35	6.22
5	4.95	5.56
6	7.48	5.37
7	5.93	6.52
8	4.19	4.12
9	6.29	4.68
10	3.10	7.36
Mean	5.92	5.92
s.d.	1.51	0.99

of utterance and percent disfluent words resulting in a correlation of -.07 which was not statistically significant.

The co-occurrence of disfluencies and pragmatic errors was determined using a Chi Square analysis. The number of utterances containing both disfluences and pragmatic errors and the number of utterances containing neither a disfluency nor a pragmatic error were compared with the number of utterances containing only a disfluency or only a pragmatic error. The analysis of pragmatic errors was separated into two categorical divisions: speaker/initiater and listener/respondent. The rationale for the division was that there are essentially two separate language processes occurring (Gallagher and Prutting, 1983). Therefore, the type of response, whether it be as speaker/initiator or as listener/respondent, may affect the occurrence of disfluencies or pragmatic errors. A more detailed discussion of this process along with a further analysis of results follows in the Post Hoc Evaluation and Discussion sections. The Chi Square analysis for the relationship between the occurrence of pragmatic errors and disfluencies in the speaker/initiator environment yielded a X^2 of 28.09 and a phi coefficient of 0.53 which were statistically significant at the 0.001 level. The Chi Square analysis for the relationship between the occurrences of pragmatic errors and disfluencies in the listener/respondent environment yielded a X^2 of 42.25 and a phi coefficient of 0.65 which were determined to be statistically significant at the 0.001 level. The frequency data comparing the co-occurrence between pragmatic errors and disfluencies in the environments of speaker/initiator and listener/respondent are found in Figures I and II.

	Fluent	Disfluent
Pragmatically Appropriate	117	45
Pragmatic Error	3	38

Figure I. Total Number of Utterances in Speaker/Initiator Role Classified on Basis of Fluency and Pragmatic Appropriateness

	Fluent	Disfluent
Pragmatically Appropriate	533	45
Pragmatic Error	24	82

Figure II. Total Number of Utterances in Listener/Respondent Role Classified on Basis of Fluency and Pragmatic Appropriateness

It was deemed necessary to examine in further detail the relationship between the frequency of disfluency and the conversational roles of speaker/initiator and listener/respondent. Responses for individual subjects were divided into two mutually exclusive categories, listener/respondent and speaker/initiator, and further divided into response types for each conversational role. The type of responses in the conversational role of speaker/initiator were 1) asks yes/no questions, 2) asks wh-questions, and 3) declarative statements. The type of responses in the conversational role of listener/respondent were 1) answers yes/no questions, 2) answers wh-questions, and 3) declarative statements (Gallagher and Prutting, 1983). Although statistical procedures were not conducted to determine relationships, patterns in the frequency of disfluencies were noted for all measured responses.

The percentage of each subject's total speech sample was completed for both conversational roles resulting in a mean percentage for the listener/respondent role of 63.4 with a s.d. of 18.7 and a mean percentage for the speaker/initiator role of 36.6 with a s.d. of 18.7 (See Table IV). The percent disfluent words were calculated for individual subjects in both conversational roles (See Table V). The mean percent disfluent words in the listener/respondent role was 5.11 with a s.d. of 1.86. The mean percent disfluent words in the speaker/initiator role was 7.97 with a s.d. of 4.93. The percent disfluent words were calculated for each type of response in both conversational roles (See Table VI). In the listener/respondent role, the mean percent disfluent words was 1) 2.1 with a s.d. of 1.52 when answering yes/no questions and 2) 5.96 with a s.d. of 2.65 when answering wh-questions. The mean and s.d.

Table IV. Percentage Breakdown of Speech Sample into Listener/Respondent and Speaker/Initiator Roles for Individual Subjects

	Percentage of Total Speech Sample	
Subject	Listener/Respondent	Speaker/Initiator
1	64	36
2	74	26
3	37	63
4	64	36
5	40	60
6	68	32
7	54	46
8	95	5
9	87	13
10	51	49
Mean	63.4	36.6
s.d.	18.7	18.7

Table V. Percent Disfluent Words for Individual Subjects in the Conversational Roles of Listener/Respondent and Speaker/Initiator

	Percent Disfluent Words	
Subject	Listener/Respondent	Speaker/Initiator
1	6.03	6.25
2	6.33	6.41
3	6.61	8.71
4	5.85	5.16
5	2.48	6.56
6	8.50	5.32
7	3.98	8.24
8	3.80	11.11
9	4.32	20.00
10	3.24	2.95
Mean	5.11	7.97
s.d.	1.86	4.93

Table VI. Percent Disfluent Words for Individual Subjects in Each Type of Response: Listener/Respondent—Answers Yes/No Questions, Answers Wh-Questions, Declarative Statements, and Speaker/Initiator—Asks Yes/No Questions, Asks Wh-Questions, Declarative Statements

	Percent Disfluent Words					
Subjects	Listener/Respondent			Speaker/Initiator		
	Answers Y/N Questions	Answers Wh- Questions	Declar- ative Statements	Asks Y/N Questions	Asks Wh- Questions	Declar- ative Statements
1	0	7.91	2.27	0	---	6.48
2	4.34	8.01	0	0	16.67	5.43
3	3.23	7.29	0	0	10.71	9.23
4	0	6.90	0	---	7.69	4.23
5	0	2.88	0	0	13.64	5.83
6	4.00	9.88	0	9.09	25.00	3.80
7	3.57	4.24	0	---	12.5	7.53
8	5.88	3.88	0	---	0	12.50
9	0	5.00	0	---	33.33	17.65
10	0	3.62	0	0	0	3.10
Mean	2.1	5.96			13.28	7.58
s.d.	1.52	2.65			3.49	3.67

were not calculated for declarative statements because of the skewed distribution of scores. In the speaker/initiator role, the mean percent disfluent words was 1) 13.28 with a s.d. of 3.49 when asking wh-questions and 2) 7.58 with a s.d. of 3.67 when making declarative statements. The mean and s.d. were not calculated for asking yes/no questions because of the skewed distribution of scores (See Figure III).

II. DISCUSSION

The results of this study indicated that a significant relationship exists between the frequency of disfluency, both percent disfluent words and percent disfluent utterances, and pragmatic errors in the speech of three year old nonstutterers. Two measures of the frequency of disfluency were used in order to examine the relationship between pragmatic errors and disfluencies on the basis of individual word segments and complete utterances.

The relationship between pragmatic errors and frequency of disfluency using the percent disfluent utterances examines disfluencies that occur in any utterance consisting of one or many word components. The percent of disfluent utterances evaluates the frequencyt of disfluency and also captures the essence of pragmatic communication in the form of speech acts. The speech act, which is defined by Searle (1965) as the basic unit of communication, is an intentional, verbally encoded message that includes the speaker's intentions, the speaker's meaning, the message's meaning, and the listener's interpretation (Owens, 1984). The speech act can be communicated in as little as a one word utterance or in a complex series of embedded clauses.

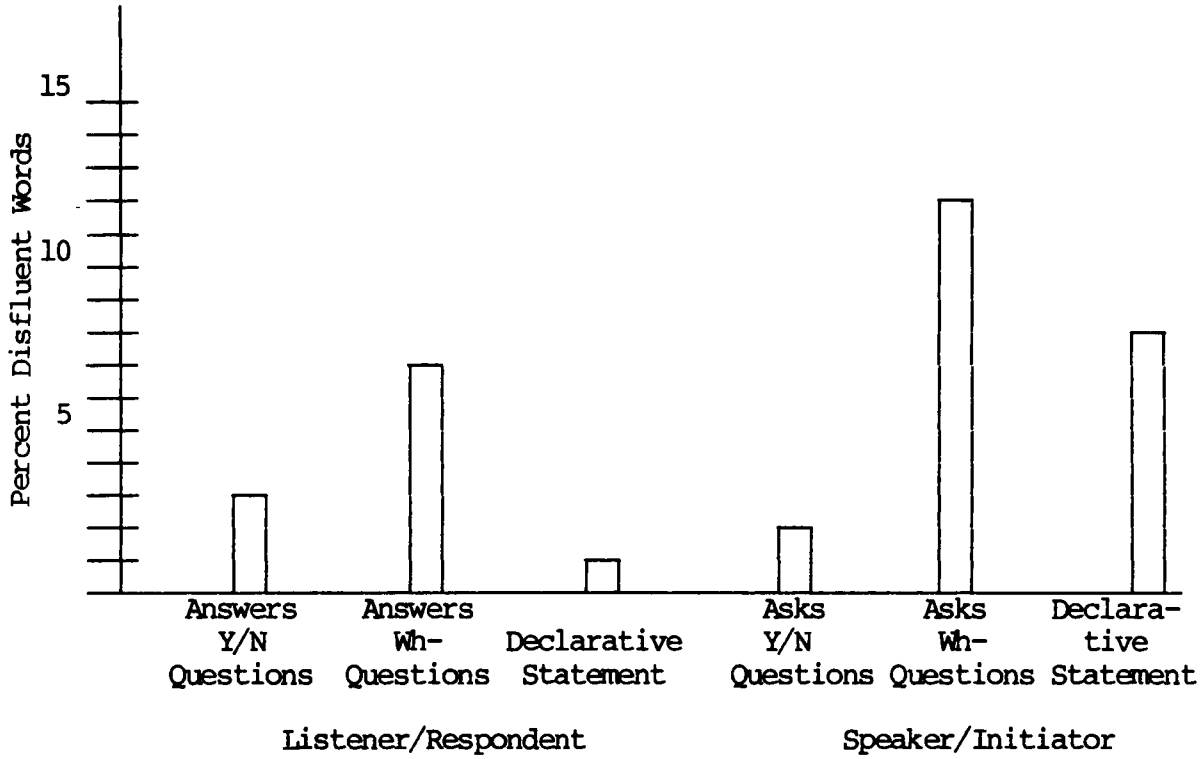


Figure III. Percent Disfluent Words for Total Group of Subjects in Each Type of Response: Listener/Respondent—Answers Yes/No Questions, Answers Wh-Questions, Declarative Statements, and Speaker/Initiator—Asks Yes/No Questions, Asks Wh-Questions, Declarative Statements

Both relationships, percent disfluent words with pragmatic errors and percent disfluent utterances with pragmatic errors, were statistically significant; however, the relationship between percent disfluent utterances and pragmatic errors bears more importance upon this particular type of pragmatic analysis, the communicative speech act.

The Chi Square analysis for the co-occurrence of disfluencies and pragmatic errors determined that disfluencies occurred more often on utterances that were pragmatically in error, than on those that were pragmatically correct, in both Speaker/Initiator and Listener/Respondent speaking roles. Conversely, utterances containing no pragmatic errors were more likely to contain no disfluencies, in both Speaker/Initiator and Listener/Respondent speaking roles. These findings further support the previous results of this investigation that found a relationship to exist between pragmatic errors and frequency of disfluency in four year old nonstutterers, and furthermore, that co-occurrence does exist between pragmatic errors and disfluencies.

No relationship was found to exist between mean length of utterance and frequency of disfluency in the speech of three year old nonstutterers. This contradicts previous research findings which show a significant relationship between the length and complexity of an utterance and the frequency of disfluency (Bilsky, 1973; Tornick and Bloodstein, 1976). Bilsky's study, however, found a combined relationship between both independent variables, length and complexity of an utterance, and the frequency of disfluency. This investigation examined only the relationship between the mean length of utterance and the frequency of disfluency.

Mean length of utterance is a gross developmental index that does

not provide information regarding structural complexity of grammatical competence even among children with comparable MLUs (Owens, 1984). However, with MLUs of up to 4.0, increases in the mean length of utterance correspond to increases in grammatical and structural complexity (Brown, 1973). For MLUs above 4.0, structural complexity relates to situational context and doesn't correspond to the mean length of utterance. Since all subjects were found to have an MLU of above 4.0, there would be no expected relationship between MLU and structural complexity.

A more important distinction between Bilsky's study and this investigation exists. Bilsky's task involved only the repetition of controlled stimuli. This investigation did not use imitative tasks, rather it utilized elicited and purely spontaneous language samples. This difference in task selection might account for contradictory results. This same distinction exists between this investigation and the previous study of Tornick and Bloodstein. Their task involved the use of controlled stimuli through imitative means. Once again this difference in task selection could account for contradictory findings.

Miller and Chapman (1981) suggest that a strong correlation exists between chronological age and mean length of utterance. According to their results, mean length of utterance increases at a rate of 1.2 morphemes per year during the ages of 1:6 to 5:0 years.

According to Brown's (1973) stages of language development as they correspond to mean length of utterance, nine out of ten subjects in this study were in the V+ stage. Stage V+ is characterized by an mean length of utterance of 4.5 or above which corresponds to the approximate chronological age of 3:11 years and above. Morphologically and syntactically

this stage is characterized by the presence of clausal conjoining elements, multiple embeddings, and infinitive forms such as "nobody, no one, and nothing". These morphological and syntactic characteristics were found in all nine subjects in Brown's stage V+. Subject 8 was categorized in Brown's stage V which corresponds to an MLU between 3.75 and 4.5 at the approximate age of 3:5 to 3:10 years. Morphologically and syntactically, this stage is characterized by the presence of simple clausal conjoining elements, simple negation elements, and infinitive phrases, which were present in the speech of subject 8. No characteristics from stage V+ were found in the speech of subject 8.

A comparison was made between mean length of utterance and pragmatic errors to determine which measure is a stronger predictor of the frequency of disfluency. A significant relationship was shown to exist between pragmatic errors and the frequency of disfluency in this sample of three-year-old nonstutterers. A significant relationship was not found to exist between mean length of utterance and the frequency of disfluency in this sample of three-year-old nonstutterers. Therefore, pragmatic errors are a stronger predictor of frequency of disfluency than MLU for this group of three-year-olds. This suggests that pragmatic assessment, especially as it relates to disfluent speech, might be a valuable diagnostic tool in the area of stuttering.

Communicative interactions can be categorized into two distinct roles, speaker and listener (Gallagher and Prutting, 1983). Furthermore, when communicating verbally, these roles can be divided into the initiator of conversation and the respondent to the initiator, hence the terms

speaker/initiator and listener/respondent. As the initiator of conversational interaction, speech takes on a more propositional, self directed role. As the listener, responding to cues from the initiator of the conversation, speech becomes less propositional and sometimes stereotypical in nature (Rice, 1980).

This investigation found a higher percentage of disfluencies occurring in the role of the speaker/initiator than in the role of the listener/respondent. No specific research has been conducted examining the occurrence of disfluencies in the conversational role of speaker/initiator as compared with the role of listener/respondent; however, it seems logical that more disfluencies would occur on self initiated, propositional speech than on responses that are predetermined by the topic of discourse.

Bloodstein (1981) discusses the relationship between the loci of stuttering and the information load, which he defines as the relative predictability of words. He further states that it is possible to obtain a reliable measure of the ease or difficulty with which each of the words in a given context may be predicted in sequence. A word that is difficult to guess communicates a large amount of information and a word that is easy to guess communicates little information. Bloodstein further states that it has been established that there is a degree of relationship between the occurrence of stuttering and low predictability (high information load). In the conversational role of listener/respondent, the given context and established topic of discourse on the part of the speaker/initiator sets up a situation of low information and

therefore, one would expect fewer disfluencies. In the conversational role of the speaker/initiator, who determines the speech patterns propositionally, the speech might be considered one of high information and low predictability. In this situation one might expect an increase in the occurrence of disfluences.

Another possible explanation for the higher percentage of disfluencies in the speaker/initiator conversational role than in the listener/respondent role might be that a larger percentage of the total speech output was evidenced in the listener/respondent role. Since the role of listener/respondent is a more frequently practiced role and occurs more often, perhaps the role of speaker/initiator is developmentally more advanced and is an emerging conversational form in the speech of three-year-olds. As a newly emerging, more complex conversational tool, perhaps more disfluencies result, as in the case of length and grammatical complexity (Bilsky, 1973).

Although no statistical analyses were conducted, certain trends were noted for each type of conversational response in both speaking roles. More disfluencies were found to occur when making declarative statements in the role of speaker/initiator than in the role of listener/respondent. This trend seems to agree with the general tendency for an increase in disfluencies in the propositional speaker/initiator conversational role.

More disfluencies were found to occur in the speaker/initiator role when asking a wh-question than in the listener/respondent role when answering a wh-question. It has been shown that children learn to formulate and produce specific forms of wh-questions only after they have

learned to respond to questions of the same form (Bloom and Lahey, 1978). The ability to ask wh-questions is a more complex form than the ability to answer wh-questions. It seems apparent that more disfluencies would occur on more complex grammatical structures that are just beginning to emerge in a child's language. These trends agree with Bilsky's (1973) results which show that a significant relationship exists between the length and complexity of an utterance and the frequency of disfluency.

Similar low disfluency percent scores were found when asking yes/no questions as were found when answering yes/no questions. An answer to the low percent scores in both coversational roles might be found when examining the relative complexity of the grammatical forms. According to Chomsky (1965), asking and answering wh-questions involves a more complex transformational step than is involved in asking and answering yes/no questions. It is reasonable to assume that there would be fewer disfluencies on all forms of yes/no questions. This trend was found to exist in this study. Since asking and answering yes/no questions is a less complex grammatical form than is asking and answering wh-questions, it would follow that there should be fewer disfluencies in both forms of yes/no questions. Perhaps an explanation for low disfluency percent scores in both forms of yes/no questions might be that these grammatical forms have been well practiced in the speech of the three-year-old subjects and are no longer emerging grammatical forms.

The results of this study indicated that a significant relationship exists between frequency of disfluency, both percent disfluent words and percent disfluent utterances, and pragmatic errors in the speech of three year old nonstutterers. Because of the exploratory nature of this

investigation, no direct comparisons to previous research can be made. This study substantiates the importance of assessment in the area of pragmatic development, in particular the occurrence of pragmatic errors, in the speech of young developmentally disfluent children and stutterers.

A paradigm shift has taken place in the field of child language. According to Kuhn (1962), a paradigm shift involves a significant change in the criteria that determines the importance of both problems and proposed solutions. The shift in the field of child language involves a turn away from a formalist, syntactically based position to a more functional, pragmatically based ideology (Bates and MacWhinney, 1984). The formalist approach views syntax as the central issue in language development. The functional approach to language development considers pragmatics to be the framework with which an understanding of other aspects of language, i.e., syntax, semantics, phonology, and morphology, might be gained. The shift has placed language within the context of social variables.

Studies in the areas of stuttering and normal disfluency have taken a somewhat formalistic approach toward the relationship with language development. The influence of language development on normal disfluency and stuttering has only been examined in the areas of articulation, general language performance, syntax, grammatical factors, morphology, and phonology. Previous to this investigation no study was found in which the effects of pragmatic elements in language were examined relative to the frequency of disfluency. Research has been conducted to determine the relationship between situational variables and frequency of disfluency. Several investigators found that fluency varies according

to situational contexts (Silverman, 1971, 1972; Demo, 1984); however, this is where the research ended. The present investigation concludes that fluency varies with the child's ability to convey communicational intentions through speech acts. Perhaps the same paradigm shift should occur in the area of stuttering and disfluency research. The focus on stuttering as it relates to language development should shift from a formalistic approach to a more functional pragmatically based emphasis.

Limitations of this Investigation

The following limitations have been identified for this investigation:

1. According to Brown's classification of morphological and syntactical development, nine out of ten of the subjects in this investigation were found to be above their corresponding chronological age. Since nine subjects were found to be above normal in their syntactical and morphological language development, it was reasonable to assume that this sample might not be representative of normal three-year-olds.
2. Another possible limitation of this investigation might have been the use of Dore's classification of conversational speech act categories. Although many investigators have indicated its usefulness and appropriateness as a clinical tool for pragmatic assessment (Folger and Chapman, 1976; Roth and Spekman, 1984), its validity has not been established.
3. This investigator designed an elicited pragmatic test based on Dore's classification of conversational speech acts for three-year-old children. Because this pragmatic test has not been validated, any conclusions drawn from results of this investigation regarding a larger population of three-year-olds must be tentative.

Research Implications

This investigation substantiates the importance of pragmatic assessment in the speech of young developmentally disfluent children and nonstutterers. A significant relationship has been shown to exist between pragmatic errors and frequency of disfluency in this sample of three-year-olds. Pragmatic errors have been shown to be a better predictor of frequency of disfluency in this sample of children than mean length of utterance. Perhaps a diagnostic evaluation for the identification of stuttering should include a thorough assessment of pragmatic development. If pragmatic errors were found to exist in the speech of stuttering children, perhaps therapeutic intervention in the area of pragmatic inadequacies might reduce the frequency of disfluencies in their speech. This could have profound implications for future changes in the areas of diagnostic evaluation, therapeutic intervention, and prevention of stuttering in young children. Based on the results of this study, the following areas of investigation are suggested for further research.

Another investigation should be conducted in order to determine the relationship between pragmatic errors and frequency of disfluency in the speech of young nonstutterers of various age groups (three-year-olds, four-year-olds, five-year-olds, ...). This would determine whether the relationship between pragmatic errors and frequency of disfluency exists in various stages of language development.

Further investigations should be conducted to determine whether a relationship exists between pragmatic errors and frequency of disfluency for various age groups of young stuttering children. Results would

indicate whether the relationship found in this investigation for non-stuttering children is also found in stuttering children.

A longitudinal study should be conducted in order to determine whether developmental disfluencies decrease as pragmatic errors decrease in the speech of young children. Conversely, a longitudinal study should be conducted to determine whether pragmatic errors increase as disfluencies increase in the speech of young stutterers.

Since this investigation only examined communicative speech acts of a linguistic nature, a further investigation should be conducted in the area of nonlinguistic communicative intentions. An investigation should specifically examine the relationship between gestural and paralinguistic communicative intention errors and the frequency of disfluency in young stutterers and nonstutterers.

Further investigations should be conducted in order to determine the relationship between conversational roles, speaker/initiator and listener/respondent, and the frequency of disfluency in the speech of both young stutterers and nonstutterers. Other systems of analysis for intention response types should be utilized to further examine the relationship between conversational roles and frequency of disfluency.

CHAPTER IV

SUMMARY AND CONCLUSIONS

I. SUMMARY

The purpose of this investigation was to examine the relationship between pragmatic errors and the frequency of disfluency in the speech of three-year-old nonstutterers. Eight male and two female nonstutterers between the ages of 3:0 and 3:11 were selected as subjects for this study.

This study assessed the linguistic means of communicative intentions by categorizing responses according to Dore's (1978) classification of communicative speech acts in three year old nonstutterers. The investigator used carrier phrases and object stimuli to elicit verbal responses in each of seven conversational speech act categories: requests, responses to requests, descriptions, statements, acknowledgements, organizational devices, and performatives. A minimum of fifty spontaneous utterances were recorded for each subject following the elicited speech sample. Disfluencies in each subject's speech were identified according to Johnson's classification of disfluent speech (1961).

II. CONCLUSIONS

The following conclusions may be drawn on the basis of the results:

1. A significant relationship existed between the frequency of disfluency, both percent disfluent words and percent disfluent

utterances, and pragmatic errors in this sample of three-year-old nonstutterer's speech.

2. No significant relationship existed between mean length of utterance and percent disfluent words in this sample of three-year-old nonstutterers.

3. Disfluencies in this sample of three-year-old nonstutterer's speech tended to occur in utterances that are pragmatically in error, both in Speaker/Initiator and Listener/Respondent conversational roles.

4. Three-year-old nonstutterers, in this sample, tended to be more disfluent in the Speaker/Initiator conversational role, than in the Listener/Respondent role.

5. Three-year-old nonstutterers in the Listener/Respondent role, in this sample, tended to be most disfluent when answering wh-questions and least disfluent when answering yes/no questions and making declarative statements.

6. Three-year-old nonstutterers in the Speaker/Initiator role tended to be most disfluent when asking wh-questions and making declarative statements and least disfluent when asking yes/no questions.

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APPENDICES

APPENDIX A

RAW DATA SUMMARY OF NUMBER OF DISFLUENT WORDS, NUMBER OF DISFLUENT UTTERANCES, AND NUMBER OF PRAGMATIC ERRORS

Table VII. Number of Disfluent Words, Number of Disfluent Utterances, and Pragmatic Errors for Individual Subjects

Subject	Number of Disfluent Words	Number of Total Words	Number of Disfluent Utterances	Number of Pragmatic Errors	Total Number of Pragmatic Utterances
1	19	311	24	15	71
2	25	427	18	11	118
3	48	606	42	26	163
4	15	204	19	14	85
5	15	303	9	5	95
6	22	294	28	26	96
7	22	371	19	10	111
8	7	167	8	6	69
9	10	159	7	6	59
10	15	484	11	4	124
Range	7-48	159-606	7-42	4-26	59-163

APPENDIX B

RAW DATA SUMMARY OF NUMBER OF DISFLUENT WORDS IN TWO SPEAKING ROLES: LISTENER/RESPONDENT AND SPEAKER/INITIATOR

Table VIII. Number of Disfluent Words in Two Speaking Roles: Listener/Respondent and Speaker/Initiator for Individual Subjects

	Speaking Role			
	Listener/Respondent		Speaker/Initiator	
Subject	Number of Disfluent Words	Total Number of Words	Number of Disfluent Words	Total Number of Words
1	12	199	7	112
2	20	316	6	111
3	15	227	33	379
4	10	171	5	97
5	3	121	12	183
6	17	200	5	94
7	8	201	14	170
8	6	158	1	9
9	6	139	4	20
10	8	247	7	237
Range	3-20	121-316	1-33	9-379

APPENDIX C

RAW DATA SUMMARY OF DISFLUENT WORDS IN TWO SPEAKING ROLES: LISTENER/RESPONDENT AND SPEAKER/INITIATOR

Table IX. Number of Disfluent Words in Each Type of Speaking Roles: Listener/Respondent--Answers Yes/No Questions, Answers Wh-Questions, Declarative Statements, and Speaker/Initiator--Asks Yes/No Questions, Asks Wh-Questions, Declarative Statements for Individual Subjects

	Speaking Roles											
	Listener/Respondent						Speaker/Initiator					
	Answers Y/N Questions		Answers Wh-Questions		Declarative Statements		Asks Y/N Questions		Asks Wh-Questions		Declarative Statements	
Subject	No. of Disf. Words	Total No. of Words	No. of Disf. Words	Total No. of Words	No. of Disf. Words	Total No. of Words	No. of Disf. Words	Total No. of Words	No. of Disf. Words	Total No. of Words	No. of Disf. Words	Total No. of Words
1	0	16	11	139	1	44	0	4	-	-	7	108
2	1	23	19	237	0	56	0	13	1	6	5	92
3	1	31	14	192	0	4	0	26	3	28	30	325
4	0	21	10	145	0	5	-	-	2	26	3	71
5	0	5	3	104	0	12	0	36	6	44	6	103
6	1	25	16	162	0	13	1	11	1	4	3	79
7	1	28	7	165	0	8	-	-	3	24	11	146
8	1	17	5	129	0	12	-	-	0	1	1	8
9	0	13	6	120	0	6	-	-	1	3	3	17
10	0	21	8	221	0	5	0	10	0	1	7	226
Range	0-1	5-31	3-19	104-237	0-1	4-56	0-1	4-36	0-6	1-44	1-30	8-325

VITA

Cynthia Grigsby-Meyers was born in Pasadena, California on May 19, 1957. She attended elementary schools in Tustin, California and was graduated from Tustin Union High School in January 1975 as a Seal-bearer with the ranking of third in her graduating class. The following March she entered the University of California at Santa Cruz where she received a Bachelor of Arts degree in Linguistics and a California Teaching Credential in General Education (K-12) with a specialist credential in English. Ms. Grigsby-Meyers was graduated with highest honors on Senior Comprehensive exams in June 1980.

After one year of teaching at Capitola Junior High School in Capitola, California in the areas of English, Science, and Physical Education, she moved to Tennessee and accepted a graduate assistantship at The University of Tennessee, Knoxville in the Department of Audiology and Speech Pathology. She was awarded a second year graduate assistantship where she assisted Professor Patrick J. Carney, Ph.D.in teaching Anatomy and Physiology, Speech Science II. She received her Master of Arts degree with academic honors in Speech-Language Pathology in March 1985. Her areas of Academic interest include language development, specifically phonology and pragmatics, pragmatic assessment, and the relationship between stuttering and pragmatics.