Effecting Change by the Use of Consultative Coaching with the Primary Caregivers of Language Delayed Preschoolers

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EFFECTING CHANGE BY THE USE OF CONSULTATIVE COACHING
WITH THE
PRIMARY CAREGIVERS OF LANGUAGE DELAYED PRESCHOOLERS

by

Sari Jeanne Giles

A THESIS

Presented to the Faculty of
The Graduate College at the University of Nebraska
In Partial Fulfillment of Requirements
For the Degree of Master of Science

Major: Speech-Language Pathology & Audiology

Under the Supervision of Professor Sheldon L. Stick

Lincoln, Nebraska

June, 1994
EFFECTING CHANGE BY THE USE OF CONSULTATIVE COACHING WITH THE PRIMARY CAREGIVERS OF LANGUAGE DELAYED PRESCHOOLERS

Sari Jeanne Giles, M.S.
University of Nebraska, 1994

Adviser: Sheldon L. Stick

Abstract: This study examined the effect of a speech-language pathologist using consultative coaching with the primary caregivers (PCG) of two expressive language delayed preschool children. The coaching was designed to improve the PCG's use of specific communication behaviors and strategies to facilitate growth in the child's communicative behaviors. Specifically, the consultative coaching encouraged the PCG to (1) follow the child's lead (2) use self and parallel talk (3) expand on the child's verbal productions and (4) use open-ended questions. Two dyads, made up of expressive language delayed preschool children and their primary caregivers, were the subjects in single subject multiple-baseline designs.

Child baseline data on receptive and expressive language was taken from the Preschool Language Scale-3 (1992), the Peabody Picture Vocabulary Test-R (1981), the Expressive One-Word Picture Vocabulary Test-R (1990), and three language samples. Primary caregiver/child interaction data was taken from 36 language samples (18 per dyad) gathered in baseline, during, and after the study. The child's and caregiver's mean length of utterance (MLU); total number of words in a 20-minute period (TNW); and total number of different word roots (NDW) were tabulated with the Systematic Analysis of Language Transcripts, (SALT, 1990).

Change in other variables was measured. Additional PCG variables were ratios of closed questions to true questions and turn-taking. Child specific variables were ratios of turn-taking, verbal to nonverbal communicative expression, and a type token ratio (TTR). Each PCG served as the active intervention agent for increasing the communicative competence of his or her child during a four-month study. The researcher served as a consultative coach.
ACKNOWLEDGEMENTS

It isn't every day that a mature woman, of the "grandmother" variety, returns to a large university and finds encouragement, personal attention, and advice from the faculty; plus friendship, humor and acceptance from her classmates, most of whom were younger than her own daughters. When that woman was naive enough to choose the thesis option because she had always liked to write and found research interesting, she could not accomplish the task alone.

So thank you John Bernthal for being an active and astute member of my thesis committee, and an academic advisor who smoothed the frayed nerves of my journey through Barkley's courses, clinics, and personalities while also handing out realistic comments like "Remember, your GRE scores won't be as high now as they were the first time". A special thank you goes to Christine Marvin who brought her experience and knowledge of early childhood special education, consultation, and the coaching model to my thesis committee as well as pragmatic advice on the difference between being an interventionist and a researcher.

There are two more colleagues--friends--whose support was vital to the completion of this project. Gail Palmer showed me how effective a rural speech-language pathologist could be and inspired my return to graduate school. She has been a constant source of advice during the past three years, my cooperating clinician for student teaching, and served as a thesis transcriber. Sheldon Stick, chair of my thesis committee, nurtured me through this adventure. Shel was a man who allowed me room to explore the literature before committing myself to a topic, who gave me enough freedom to make mistakes and profit from them, and finally, who helped me put aside my journalistic, feature writing style and then struggled with me as I was baptized into the academic writing mode.

Other Barkley faculty who contributed to this research were Lisa Scott and Karen Hux who gave me feedback on parent measures and Mary Friese who introduced me to the SALT language analysis program. Thank you to the many friends, Lisa, Angela, Liz, Andrea, Deb, Shelly, and Joan, who served the academic cause by testing subjects, coding, or reading. I also want to acknowledge the countless hours given by the families who participated in the final study and the field study families. I was graciously welcomed into their homes.

It's difficult to find words to express the support I've had from my family in the past three years. Pictures of Sarah, Christopher, David, Matthew, Kyle, and Brandon sat on my Barkley desk to remind me of the wonders of childhood, and
sometimes, of a dance recital or ballgame I had missed attending. My daughters, Jennifer, Julie, and Janine, supported my fourth college venture by reading and giving me feedback on chapters. Jennifer, reading the final draft for mathematical errors, couldn't help comment, "evidenced should not be used as a verb". Julie proofread the beginning chapters and arranged a haven for our "comp" study group. Janine's Kyle was the original stimulus for my research about expressive language delayed children so they served as field study subjects. The girls' husbands, Dick, Mark, and Russ, were encouraging even though I'm sure they wondered "Why is she doing this? Is it hereditary?"

The assistance of those already mentioned was significant, but secondary to the support I received from my husband Bob, who also answers to Pastor, Rev. Mickey, and now Captain Bob (Thanks to Sheldon). Not only did he say, "Go back to school if you want to", but he took over many of my home and church chores when the studies became difficult. Although he didn't share my enthusiasm for a new vocation, he supported my efforts in multiple ways--from driving to Lincoln on icy nights, making promised pecan pies, serving as a human thesaurus/grammian in the car, and holding me and letting me cry when I was ready to quit.

During the final two months he has shared his vast mechanical knowledge and computer skills with me, not by doing the work, but by teaching me how to do my own spread sheets, tables and graphs. It was a case of the speech-pathologist coach becoming the learner. Bob, for all your support and love over the past 38 years, I dedicate this thesis to you.

[Signature]

Jeanne
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Chapter I

INTRODUCTION

Language acquisition is one of the great accomplishments of infancy and early childhood. Although researchers still are seeking to understand and describe the process involved in this acquisition, they recognize that communicative competence is learned within the course of everyday transactions. Learning to talk requires not only a child in a state of readiness, but also an older child or adult to engage in communicative interchanges with the child (Berko Gleason, 1977; Brunner, 1975; Lahey, 1988; Snow, 1977). A child comes into the world naturally equipped to develop conversational competence (Dore, 1986; McCormick & Schiefelbusch, 1990; Sachs, 1989). Although the newborn infant does not "speak" at birth, a child's first two years are exceedingly important ones for language acquisition.

INFANT DIFFERENTIATION

By eight weeks of age infants can differentiate American English from another language by its prosody (Leonard, 1991), by 18 weeks of age they are able to associate an auditorially presented vowel with its corresponding oral facial posture (Kuhl & Meltzoff, 1988), at seven months of age most can detect the major syntactic boundaries of clauses and phrases, and they show comprehension of verbs at 13 months (Leonard, 1991). Before speaking their first words at between 9-15 months of age, infants are actively sorting out and grouping the words and phonemes of the language to which they are exposed (Meltzoff & Kuhl, 1989; Sachs, 1989).

DEVELOPMENTAL PROBLEMS

Eric Lenneberg believed that the onset of speech was not affected by culture nor by the language learned, nor was it suppressible, (cited in McCormick & Schiefelbusch, 1990). However, not all children acquire language at the same rate. Often speech and language problems are concomitant with mental retardation, sensory or neurological impairments, emotional disturbances, or physical
handicaps (Klein & Campbell, 1990; Miller, 1983). Because of technological advances, more low birth-weight babies are surviving, and evidence biological, environmental, and psychological risks (Clark, 1989). Among the more common pre- and postnatal environmental risks are poor maternal nutrition, exposure to alcohol and other toxic substances, in utero infections, extreme poverty, and teenage mothers (Clark, 1989; Goldberg, 1991; Rossetti, 1991). Snow emphasized the urgency for frequent communication experiences with handicapped children when she said,

• the child who is, for whatever reason, at risk for language delay or disability cannot develop normally without optimum access to the crucial features of social interaction. •••• when a child is at risk for language delay or disability because of some deficit in language processing ability, or because of mental retardation, sensory impairment, or psychodynamic disorder, he has lost his buffering. He may be able to develop language normally only in an optimum social environment, one with constant access to adult caretakers who are always able and willing to engage in contingent social interaction. ••••

clinicians should attempt to: 1) identify those children who need extra social buffering because their biological buffering has failed them, putting them at risk for language disorders; and 2) train parents to provide social buffering so that normal development can occur, rather than waiting for the risk to actualize itself as a full-blown language problem. (Snow, 1984, p. 100)

Traditional Therapy Limitations
For years speech-language pathologists (clinicians) have taught language delayed children using traditional drill-type treatment methods without extensive planned social interaction. The clinicians expected the treatment procedures to generalize to everyday situations (Spinelli & Terrell, 1984), but that did not always happen. MacDonald (1985) found that the language disabled children who could generalize their clinic training were the ones who had a basic conversational system with significant others, parents, teachers, or other adults who played major roles in the children's day-to-day lives. Children who lacked regular reciprocal turn-taking relationships had fewer generalization opportunities and got less practice (MacDonald, 1985). Yet, this culturalization is also a two-way process--parents are known to socialize the baby, "but--to some extent--the baby 'socializes'" the parent (Hodapp, 1988, p. 33) by crying, smiling, and demanding care.

Antecedent Experiences

Schiefelbusch (1983) added emphasis to the early intervention argument when he proposed: "One compelling reason for early intervention is that many of the features of language, both structural and functional, are based upon antecedent experiences. Many handicapped children may not work their way through these experimental antecedents by the time they are expected to use formal language" (p. 19). To him the purpose of early intervention was to teach communication skills and concepts, not mere words and linguistic features.

The advantages of early intervention which can reduce later educational costs and emotional stress, the reality of increased generalization when intervention is offered in a natural setting, and the importance of empowering and raising the self-esteem of the significant caregiver of a language delayed child are germane topics. These will be discussed in Chapter II which contains
empirical literature on sociolinguistic theory, the circularity of parent-child interactions, characteristics of an expressive language delayed child, proven strategies which impact child language development, the current supply and demand for certified speech-language pathologists, and the proposed consultative coaching model.
Chapter II

LITERATURE REVIEW

SOCIOLINGUISTIC THEORY

It is the premise of this paper, that (1) language is a shared social tool, (2) the acquisition of language in young children is a result of adult-child dyadic interactions, (3) early intervention with children who evidence language delay is emotionally positive for the child and educationally cost effective, (4) maximum language facilitation can be secured by utilizing caregivers who spend the most time communicating with the child, (5) caregivers of language delayed children can develop skills to enhance their child language facilitating abilities, and (6) consultation using a "coaching" paradigm between caregivers and speech-language pathologists can be an effective vehicle to assist parents in developing language facilitating skills. The above principles reflect the sociolinguistic theory of language acquisition, which claims that the primary context for language learning is the caregiver-child dyad (Owens, 1991; Rieke & Lewis, 1984; Tiegerman, 1989; Wetherby & Rodriguez, 1992).

Literature describing parent-child interactions has been interpreted to mean mothers actively maintain the participation of their children even before those children understand linguistic and social conventions (Bruner & Bornstein, 1989; Dore, 1986; Owens, 1991; Snow, 1989). They do so by modifying their speech to encourage children to take a turn and continue a topic (Lahey, 1988; Newport, Gleitman, & Gleitman, 1977; Scherer & Olswang, 1984; Snow, 1977). Thus the emphasis is on functional communicating interactions (Lyngaaas, Nyberg, Hoekenga, & Gruenewald, 1983; Owens, 1991). Functional language is what a child uses as an active participant in the everyday environment. Parents adapt their verbal behavior(s) to the assumed knowledge level of their child, and the child, in turn,
provides feedback that is used by the parents to structure conversation (Berko Gleason, 1989; Owens, 1991, Paul & Elwood, 1991).

Owens claimed children need to experience successful communicative interactions, which are validated by significant others, before they will adopt those interactive skills over time. He said, "Only when the utterance works does it generalize to the child's use repertoire. . . . a wealth of data indicates that programs that involve the child's communication partners, especially parents, produce greater gains" for these children than programs that do not (Owens, 1991, pp. 14, 17). McDade and Varnedoe (1987) found programs that involve parents produce greater gains than those that do not. They proposed, "Given the deviant interactive patterns between parents and their language-impaired children, and evidence that children whose parents receive specialized training make greater progress in therapy than those whose parents do not, the question is no longer 'Should parents become involved in the intervention process?' but rather, 'How should parents become involved . . . ?'" (McDade & Varnedoe, 1987, p. 21).

CIRCULAR INTERACTIONS

Parents, teachers, or primary caregivers of handicapped children, often show communicative styles that are not optimal for child language development (Bondurant, Romeo, & Kretschmer, 1983; Cross, 1984; Duchan & Weitzner-Lin, 1987; Fey & Leonard, 1983; Lund, 1986; Yoder & Kaiser, 1989). Lund (1986) reported that environments provided by the mothers of speech-language impaired children were markedly less conducive to mutual involvement with their children than were those provided by the mothers of same-age normal language children. However, other investigators noted that the language impaired children, most of whom had expressive and receptive delays of at least one year, generally were unresponsive to their mothers
and tended to discourage interactive efforts (Fey & Leonard, 1983). Other investigators reported similar results. A 1981 study by Cunningham, Reuler, Blackwell and Deck, which compared interactions of mentally retarded and normal children, found mentally retarded children initiated fewer social interactions, were less responsive, and engaged in more solitary play than normal children. Mothers of children who were slower to develop language were more directive during play and task settings, used fewer semantically contingent replies, initiated more topics, and communicated rhetorically without waiting for a response (Conti-Ramaden & Friel-Patti, 1984; MacDonald, 1985; Wetherby & Rodriguez, 1992; Wulbert, Inglis, Kriegsman, & Mills, 1975; Yoder & Kaiser, 1989). Cunningham et al. (1981) said those mothers were also less likely to respond positively to their child's compliant task-orientated efforts.

CONSTRAINED MATERNAL LANGUAGE

Bondurant, Romeo, and Kretschmer, (1983) investigating the differences between the language behaviors of mothers of two randomly selected groups of preschool children matched by age, but differing in expressive language abilities, found significant differences in the mean length of utterances (p < .01), the number of acceptance and rejection utterances (p < .05), and the number of questions and directions (p < .05), given by the mothers to children in unstructured play situations. Specifically, the mothers of the language delayed children provided shorter utterances, "used twice as many rejection utterances", fewer acceptance utterances, fewer questions, and were "extremely directive" (Bondurant et al., 1983, pp. 241, 239). The difference between the amount of acceptance and rejection provided by the mothers was considered pivotal by the authors because they believed mothers who are highly directive interfere with the process of vocabulary building by restricting the child's concept formulation. The authors speculated on possible
reasons for this behavior: "The mother may believe that she must 'teach' the child the right words. The child's language proposals may not match the mother's concepts or his/her words may be difficult to understand, and the mother may not be tuned in to his/her speech system" (Bondurant et al., 1983, p. 241).

**PARENTAL LANGUAGE OVERVIEW**

In 1984 Cross prepared an overview of 12 studies that contrasted parental language addressed to specific language impaired children with parental language addressed to normal language children. Cross divided the language impaired/normal studies into three rough categories—four studies matched two groups of children on chronological ages; six matched two groups of children by language ability; and two failed to match the children in any manner. Then she compared the 12 language impaired/normal studies to ten additional studies involving normal child language development. Each "normal child" language study investigated the correlation between one or more parental discourse features and measures of child language. The 12 impaired/normal studies "reported differences in three main categories of language features: discourse contingencies, sentence types and functions, and input parameters" (italics authors's, Cross, 1984, p. 5). These categories were exactly the same ones associated with language development in the ten normal child language studies she examined.

Other highlights from Cross' overview are that (1) parents of language impaired students used fewer semantically or reverentially contingent utterances than did parents of normal students; (2) parental semantic contingency was positively associated with progress in child language, particularly at the early multiword stage; (3) parents of specific language impaired children were less positive and accepting of their children's utterances than parents of normally developing children; and, (4) all but one of the
language impaired/normal studies showed parents of language-impaired children were more directive and controlling than parents of normal language children (Cross, 1984).

SIMPLIFIED STYLE

The effect of the last point is reflected in two longitudinal studies of normal development by Newport et al. (1977) and Furrow, Nelson & Benedict, (1979). Both studies found the frequency of maternal imperatives was negatively associated with children's gains in syntactic development. Investigators have established that mothers of language delayed children use a highly simplified, controlling style of expressive language when relating to language-delayed children (Garrard, 1986, 1989; Hanrahan & Langlois, 1988). When mothers dominated or controlled the communicative interactions with their children by talking or interrupting too much, initiating most of the conversation, or asking constraining questions, the reciprocity between mother and child decreased. The resultant language learning environment tended to become less effective for stimulating verbal child language (Berko Gleason, 1989; Bondurant et al., 1983; Hubbell, 1981).

QUESTION STRATEGIES

When talking to children, adults mainly use two basic question strategies--true questions and limiting questions (Garrard, 1986). True questions, also called real questions, are not controlling. The listener may answer with required information (the zoo's closed), provide details (it's too cold for the animals), or turn the question back to its originator (yes, you're right). Limiting questions are ones with specific answers (yes, no), tag questions (that's a horse, right?), or leading questions (what's that, a camel?). Such queries place boundaries on a partner's responses (Garrard, 1986; McDonald & Pien, 1982). Examples of limiting questions with answers are "What's that, a pig?" "What does a pig
say, 'oink'?" or "How old are you . . . two?", so all the child has
to do is nod his/her head. Tag questions--"That's a horse, right?"
"Do you have a kitty?" serve to maintain conversation and listener
interest but they are constraining because they encourage the
listener only to give either an affirmative or negative answer. When
using a leading question, a speaker does not always provide the
answer immediately, but does predict how a listener will respond
"This is a . . . horse?" "What's this?" "Is that a dog?". Garrard
found mothers significantly decreased (p > .01) their limiting
questions as nondelayed children advanced in age, but increased (p =
.01) the use of limiting questions as the language-delayed children
advanced in age (Garrard, 1986). "Mothers use limiting questions
with children to facilitate conversational exchanges. When
interacting with preverbal children, the mother plays both roles,
asking a question and supplying the requested information" (Garrard,
1986, p. 102).

In a subsequent analysis, Garrard (1989) plotted the mothers'
directive scores to nondelayed two-year-olds and delayed four-year-
olds according to the children's comparable mean length of
utterance. She found mothers' directives for the delayed four-year-
olds exceeded those for the nondelayed two-year-olds with only a few
exceptions. This conclusion, coupled with earlier literature that
showed that normal children in Brown's (1973) first two stages
respond more frequently to appropriate level questions than
comments, shows the necessity of using appropriate questioning
strategies. Yoder, et al., concluded that using the two facilitative
strategies concurrently may be even more pertinent when they said,
"Questions that continue the child's topic may be particularly
powerful elicitors" (1992, p. 257).

CAREGIVER PERCEPTIONS VITAL

Normal children's environments usually stimulate the
acquisition of communication skills. "In contrast, any impairment (disorder or delay) of a child's communication system often has an effect on how the child is perceived and responded to by the family. More specifically, parents of language impaired children may unwittingly develop patterns of interaction that are not conducive to language development" (Hanrahan & Langlois, 1988, p. 242) by not expecting their children to be full communicative partners. Cheseldine and McConkey, (1979) speculated that it could be harder for parents of disabled children to realize the skills their children have gained. Hanrahan and Langlois (1988) outlined six reactive language techniques which parents could be taught to use: mirroring, self-talk, parallel talk, reflecting, expansion, and expatiation. They advocated intervention, which actively included the parents as "primary or equal therapeutic agents" (Hanrahan & Langlois, 1988, p. 245). However, Warren & Rogers-Warren cautioned:

Training parents and teachers will consist not only of teaching them specific prompting techniques, but also of supporting their efforts with children who may have a history of not responding to such teaching efforts. . . . Including parents as therapists, when there are effective training strategies, clear targets for intervention, and a support system to encourage the parents, is appropriate and can make a tremendous difference in the child's language learning. (Warren & Rogers-Warren (1985, pp. 7, 10).

This statement appears to recommend an expanded counseling role for speech-language pathologists. Parents who can work with their children need adequate support from the clinician who is responsible for teaching techniques, monitoring progress, and conducting assessments.
CONTINGENCY DEVICES

Paul and Elwood (1991) looked at maternal linguistic input given to 28 toddlers who presented slow expressive language development. The authors examined the mothers' speech with regard to sentence types, lexical contingency, pragmatic functions, and topic management. The results showed the language of mothers to delayed toddlers only differed in the frequency use of lexical contingency devices, (i.e., expansion and extension). However the proportion of expansions and extensions compared to the number of child utterances showed that when the late talkers gave their mothers something to expand, the mothers did so (Paul & Elwood, 1991). Similar conclusions of child language influencing parental speech were reported by Whitehurst, Fischel, Lonigan, Valdez-Menchaca, DeBaryshe, & Caulfield (1988) who hypothesized, that 1) the child's delay caused the parents to speak differently, and 2) verbal interactions in the families were driven by the child's expressive deficiencies.

SUMMARY

The selected sources reviewed above (Cross, 1984; Garrard, 1986; Lahey, 1988; Lyngaas, et al., 1983; MacDonald, 1985; Owens, 1991; Warren & Rogers-Warren, 1985) agreed: (1) language needs to be functional, (2) language facilitation should be conducted by those who spend the most time communicating with the child, and (3) parents and teachers are ideal language trainers because of their relationships and time spent with the child. The question that emerged was how these three issues could be integrated into a language-delayed child's life.

SUPPLY AND DEMAND

The increasing numbers of young children needing speech-language intervention, the quantity of trained speech-language personnel, and the finances available to provide that intervention
(Frassinelli, Superior & Meyers, 1983) are not in concert. Prevalence figures on the numbers of children receiving treatment for speech and language disorders vary from five to ten percent of the United States child population (Hallahan & Kauffman, 1988, Lahey, 1988), but S. A. Jones and W. C. Healey (1973) reported that only 52 percent of children with speech problems received services (cited in Frassinelli, et al. 1983). Using 1991 figures on the United States child population (0-15 years of age) from the Statistics Abstracts of the United States, (1991 Edition); and the minimum prevalence noted above (five percent), 2,756,500 children would have needed speech-language services during 1991. Only 1,433,380 would have been served if Jones and Healey's 52 percent service figure is used.

**PREVALENCE**

Most studies done on the prevalence of speech disorders do not make a distinction between a speech and a language disorder. Studies categorizing distinct language problems are even more rare. In an extensive review of prevalence literature done by the Canadian group of Beitchman, Nair, Clegg, and Patel (1986), two studies were noted which examined prevalence of preschool language delayed children. The first, by J. Stevenson and N. Richman (1976), assessed a one-in-four sample of 3-year-old children in an outer London borough and found the prevalence of expressive language delay (child scored at least six months below chronological age norm) to be 3.12 percent. The prevalence of severe expressive language delay (expressive language age ≤ to .66 of C.A) was 2.27 percent (cited in Beitchman et al., 1986). The second study, by Silva (1980) sampled 3-year-old children in Dunedin, New Zealand. Three percent of Silva's subjects were delayed only in verbal comprehension, 2.5 percent were delayed only in verbal expression, and 3 percent were delayed in both, for a total prevalence figure of 8.4 percent.

Beitchman et al. (1986) used a one-in-three sample of all
five-year-old children from the Ottawa-Carleton region for their own three-stage study. The results of the first two stages found the total prevalence of speech and language disorders to be 19.0 percent (± 2.8 percent at a 95 percent confidence level). They estimated that 6.4 percent of the children sampled showed speech impairment without concomitant language problems. Language disorders or delays without speech impairment were found in 8.04 percent, while 4.56 percent of the children evidenced difficulty in both areas.

HEAD START

The 1987 Special Education Yearbook, edited by Jordan & Zantal-Wiener, provided data in relation to one population of United States' children receiving special services. The report estimated that there were 255,300 handicapped children of preschool age (3 to 5) eligible for Head Start in the United States. The number of handicapped children enrolled in Head Start has increased since the data was first reported in 1973. In November-December, 1973, Head Start programs were serving 22,807 handicapped children, roughly ten percent of their enrollment. Twelve years later, June 1985, Head Start programs reported a little over 12 percent, or 61,898 handicapped children, were served:

Of the handicapped children enrolled in Head Start, 61.9% [38,329] have been diagnosed as speech impaired. This is by far the largest category of handicapped children served in Head Start programs. The size of this category has been of concern. The State Education Agencies report an even higher proportion of speech impaired children in the preschool age range which they are serving under P. L. 94-142. . . . In addition, Head Start requires that all children be professionally diagnosed, and a previously completed study on the speech impaired has determined that most
of the children categorized as speech impaired in Head Start had been appropriately diagnosed. Thus, the proportion of speech impaired children served by Head Start is consistent with the proportion of preschool children in the larger population served under P. L. 94-142 by the public schools (Jordan & Zantal-Wiener, 1988, p. 46).

The Head Start data above reflects the national picture. Nebraska estimates are that only 25-35 percent of the children eligible for the Head Start program in the state are being served (Bernthal, 1993).

NEBRASKA VERIFICATION

In Nebraska, for the last two years that data has been published (1992-93), 29 percent of the 37,199 special education children have been classified as speech-language impaired (Nebraska Special Education statistical Report, 1994). As of December 1, 1993, 10,735 children had speech-language impairment (SLI) listed as their primary handicapping condition. These children ranged in age from 0 to 21, with 2,269 (21 percent) aged five and under, and 1,391 (13 percent) aged four and under. Note that in the December, 1991 statistics, 5.6 percent of the SLI children were five and under and 3.3 percent were four and under.

The numbers of children verified in Nebraska as speech-language impaired has risen from 9,698 in 1991, to 10,255 in 1992, and 10,735 in 1993. Preschool totals for the two most recent years follow. As of December 1, 1992, there were 1,391 children being served from birth to age 4 and 2,124 served from birth to age 5. As of December 1, 1993, there were 1,262 in the 0-4 age group and 2,169 in the 0-5 age group. However, two categories of children with disabilities (autism and traumatic brain injury) have been separated
out in the most recent year's figures. (Nebraska Department of Education SESIS Information). It is estimated much of the growth in the numbers of SLI verified children has been in the preschool ages because of Nebraska's developing awareness and programming for early intervention.

**NOT ALL VERIFIED AND SERVED**

Considering the national and state Head Start figures noted above, it is obvious that not all preschool children needing speech-language services are being verified or served. Norris and Hoffman observed, "Children discover the properties of language through immersion in the communicative process" (1990, p. 28). With the growth in numbers of children needing speech-language services, professionals who see a child for twenty minutes twice a week cannot "immerse" the child in the communicative process. Especially in a state like Nebraska, which has areas of sparse population, certified speech-language professionals are not always available. The most obvious source for assistance in many instances is the primary caregiver who already has a strong, reciprocal relationship with a child (Warren & Kaiser, 1986). If the parents of a language delayed child received short-term, family-based training while the child was still at an opportune developmental age, that child might not need long-term special services later.

The efficacy of early intervention, even when it is of a preventative nature, has been well-established and seems to be the most prudent course of action (Barnett & Escobar, 1990; Schweinhart & Weikart, 1988). However, the issue of resources, money and personnel, often relegates preventative measures to a wait-and-see status. Children presenting language delays or disorders do not suddenly disappear. It is the obligation of trained professionals to fulfill their responsibilities by providing requisite treatment to children and their families. The earlier treatment can be initiated,
the more favorable the expected prognosis (Goldberg, 1991; Leonard, 1991; Schiefelbusch, 1983; Snow, 1984).

CONSULTATION

In contrast to traditional pull-out speech-language treatment, many clinicians utilize consultation with teachers and other professionals. Consultation is a three-person chain of service in which a consultant interacts with a caregiver to benefit the child for whom the caregiver is responsible (Frassinelli, et al., 1983). Collaborative consultation is defined as "an interactive process that enables people with diverse expertise to generate creative solutions to mutually defined problems" (Idol, Paulocci-Whitcomb & Nevin, 1986, p. 1).

POSSIBLE RELIEF

Marvin (1991) reported that the use of carefully developed consultation services provided some relief to the personnel shortage issue in speech-language pathology, particularly in view of the need to serve a wider range of clients. She reported that collaborative consultation merged social-interactionist language theory with the move to facilitate language acquisition in naturalistic situations. Furthermore, it enabled professional speech-language pathologists to use their time more productively, which resulted in a more efficient monetary investment for school districts. Cost effective long-term benefits appear promising if a consultative coaching model were to be used with parents/primary caregivers of preschool children. A primary caregiver would be able to extend the principles of communication training to other children (Damico, 1987; Huefner, 1988).

PARENT INVOLVEMENT

Kaiser posited two arguments for parent-implemented language intervention: (1) "Parents are typically the first teachers of early language skills", and (2) "Parent involvement in language
remediation may be a means of obtaining generalized outcomes of training that are not realized through more traditional forms of intervention" (1993, p. 63). Parents can contribute much insight and experience regarding their child's language difficulties; and, that insight and advice should be exploited to benefit the child.

Studies which have used a model including the consultative component of a SLP working with a parent in the home for even a brief period of time have been successful (Gallagher, 1990; Girolametto, 1988a; Parsons & Johnston, 1992). These programs have documented that parents can be taught language facilitating procedures, which often generalize to non-training situations. Some experimental and long-term programs have combined speech-language pathologist services and parent intervention (Alpert & Kaiser, 1992; Andrews & Andrews, 1986; Broen & Westman, 1990; Girolametto, 1988a; MacDonald, Blott, Gordon, Spiegel & Hartmann, 1974; MacDonald, 1989).

MacDonald's (1974) colleagues trained and carried out treatment procedures for two months with mothers of Down's Syndrome preschoolers. The mothers then continued as the sole language trainers of their children in their respective homes for three more months. The mothers reported the informal language training became a natural and important part of their family's life style. In addition their successes gave them confidence in their ability to "'teach' as well as to 'raise' their children" (MacDonald, et al., 1974, p. 411).

PROJECT PARENT

Broen & Westman (1990) reported on Project Parent, a preschool speech program implemented through parents. The authors assessed the effectiveness of parents as teachers of speech skills by comparing changes in these skills, which the children acquired during one period of no intervention and one with intervention. The
The research literature yielded on several studies in which parents were productively trained to interact in a didactic and caring manner with their language-delayed child (Broen & Westman, 1990; MacDonald et al., 1974; MacDonald, 1985; Scherer & Olswang, 1984). However, MacDonald (1985) found it was difficult to teach the use of incidental facilitating strategies teaching, like scaffolding and semantically contingent feedback, in a didactic academic setting. Interestingly, demonstration teaching programs using role-playing, demonstrations with children, or videotaped adult-child play sessions have proven effective. (Hart, 1985; Jelinek & Kasper, 1976). Literature shows a positive result when parents are involved in improving their child's language acquisition (Warren & Kaiser, 1986). One method to accomplish that objective would be the coaching

COACHING

According to Showers (1983) coaching occurs when a trainee (the PCG) attempts to implement a new strategy for accomplishing a specific goal. As originally proposed, coaches were peers, supervisors, principals, college instructors, or specialists who themselves were competent in the utilization of the target intervention (Showers, 1983). The five basic steps to follow in the coaching model are (1) present the rationale and theory behind the strategy; (2) demonstrate how to implement the strategy; (3) provide for practice by the trainee followed by feedback from the coach; (4) repeat the first three steps emphasizing demonstration, practice, and feedback; (5) cooperatively design a coaching plan to help the learner decide when and how to incorporate the strategy into the family's daily schedule. Coaching combines the provision of companionship, the teaching and demonstration of a new strategy; the giving of technical and practical feedback; and the analysis of possible application/s. It is an instructive yet supportive process.

SUMMARY

In summary, the disparity between the amount of time a speech-language pathologist can spend with a child as compared to the amount of time the child spends with a primary caregiver; the effort to match supply and demand for speech-language services to children in a cost effective manner; the movement toward functional speech-language treatment in a naturalistic environment; and the interest in whole family intervention and empowerment (Gargiulo, 1985) are factors giving support to increased use of consultation. Interpretation of available relevant literature has cited the importance of assisting parents through a consultative coaching model to aid them in learning new strategies for becoming better communicative partners with their children.
FACILITATION STRATEGIES

There are many proven strategies that can be used to facilitate child language growth. Fey (1986) listed the following fundamental child-orientated steps that adults should use: waiting for the child to initiate some behavior, interpreting that behavior as meaningful and communicative, and responding in a manner that is assumed to facilitate language development. Research has described the empirical value of a variety of adult-to-child intervention strategies. Some strategies and their advocates are comments (Barnes, Gutfrend, Satterly & Wells, 1983; Cross, 1984; McDade & Varnedoe, 1987); expansions and expatiations (Hanrahan & Langlois, 1988; Norris & Hoffman, 1990; Scherer & Olswang, 1984); parallel talk (Fey, 1986; Hanrahan & Langlois, 1988; Weiss, 1981); balanced turn-taking ratio, (Duchan-Weitzner-Lin, 1987; Girolametto, 1988a, 1988b); appropriate level questioning (Garrard, 1986, 1989; McDonald & Pien, 1982; Olsen-Fulero, 1982; Yoder & Davis, 1990; Yoder & Kaiser, 1989); mirroring (Hanrahan & Langlois, 1988, Weiss, 1981); contingent response behaviors (Cross, 1984; Cunningham, et al., 1981; Coggins, 1991; Duchan & Welzler-Lin, 1987; Fey, 1983, 1986; Paul & Elwood, 1991; Schiefelbusch, 1984; Yoder & Davies, 1990; Yoder & Kaiser, 1989; Yoder & Warren, 1993).

For the purposes of this study, literature giving the rationale and theory behind four main strategies will be presented. Those intervention strategies are (1) the adult following the child’s lead by the use of contingent responses to current child behaviors and/or utterances, (2) the use of self talk and parallel talk, (3) the types of questions used, and (4) the use of expansions and extensions. Each of these strategies is explained below with a theoretical rationale and operational definition.

FOLLOWING THE CHILD’S LEAD WITH CONTINGENT RESPONSES

Language-delayed children benefit from the same facilitative
interactions as children who learned language normally. However, language delayed children often require an optimal rather than just facilitative, social environment, because their capacity to benefit from interactions may be reduced (Schiefelbusch, 1983; Schiefelbusch, & Pickar, 1984). Normally developing children naturally search for contingencies at the same time their caretakers search for communicative intentions (Snow, 1984), but these contingencies need to be augmented for language delayed children. Semantic contingency is the "relationship of adult speech (in semantic context) to the immediately preceding child speech" (Snow, 1984, p. 85). It can be defined as an adult responding to a child's nonverbal indicators (e.g., gestures, gaze) as well as to verbal utterances. The adult responds to what the child has said, is attending to, or presumably has in mind at the time. In other words, the child controls the topic. Semantic contingency has been positively associated with early development of multiword utterances (Cross, 1984; McDonald & Pien, 1982; Nelson, et al., 1973; Newport et al, 1977; Yoder & Warren, 1993). Its use intensified the child's communicative efficacy and encouraged his/her belief that one's own communicative act can have an effect.

COMMENTS ALLEVIATE PRESSURE

Comments, also called descriptions, models, or expatiations, are adult utterances that provide new semantic information regarding a child utterance (McDade & Varndoe, 1987). They can also be utterances used by an adult to guide the child through an interchange of ideas (Blank, Rose & Berlin, 1978). Comments on topics within joint action routines between an adult and child are particularly useful because they alleviate the pressure for children to respond verbally (Marvin, 1993). This contrasts to questioning where a response is expected.

Two ways to promote contingency are following the child's
conversational lead, and fostering an appropriate turn-taking ratio. To accomplish the former, the adult learns how to focus on the child's topic of interest and establish joint attention (MacDonald, 1989; Jones & Warren, 1991). Girolametto (1988b) used turn-taking time as a frequency measure and as a measure of the length of turns taken by members of the dyad. He figured a ratio based on the percentage of turns for each dyadic member in a ten-minute time segment. Transcripts were divided into two categories: turn or missed turn opportunities (Girolametto, 1988b). He defined turn as "one or more communicative acts (and accompanying nonverbal behaviors) emitted by one partner that were not separated by a communicative act of the other partner or by a pause of more than 1 s" (1 s = 1 second of time), while a missed turn opportunity was "a period of 1 s or more during which a turn might have occurred but did not" (Girolametto, 1988b, p. 159).

**SELF TALK AND PARALLEL TALK**

Self talk and parallel talk are additional devices which can be used to nurture contingency and conversational cohesion. With self talk the adult talks about the objects or actions from his/her own perspective (Norris and Hoffman, 1990) during a joint activity with the child (Hanrahan and Langlois, 1988). While setting up a Duplo farm, the parent could say, "I am putting the pigs in the field... I want to put the cow in the barn. Then she can eat". In parallel talk the adult descriptively talks out the child's actions, usually during a joint or shared activity. The adult speaks in active terms from the child's perspective (Norris & Hoffman, 1990). An example might be, "Oh, you have Duplo blocks. You are using red, blue, and yellow ones to build... Now you have built a long road for the car."

**TYPES OF QUESTIONS USED**

Questions, like comments, can be used to focus on a child's
interests. In children who are developing language normally, questions are highly correlated to the growth rate for using verbal auxiliaries and verb phrases, two important elements of communicative competence (Cross, 1984). Questions also elicit talk because of the implied social obligation to respond, and often are used to allocate speaker turn in conversation with young children (Olsen-Fulero & Conforti, 1983; Yoder, et al., 1992). Children who are at least three years of age are more likely to take a conversational turn successfully in response to a question than they are in response to a declarative sentence (Olsen-Fulero & Conforti, 1983).

Although the use of questions can facilitate growth in child language, some types of questions hinder that growth. An explanation by Garrard (1986) clarified this point. Limiting, or closed, questions are those which (1) require a specific answer, (2) tag questions that serve to maintain conversation and listener interest but are constraining, and/or (3) leading questions which control replies by predicting how a listener may respond.

True questions, sometimes termed "real" questions (McDonald & Pien, 1982; Olsen-Fulero, 1982) are not considered controlling. A listener is free to supply requested information, provide more details, or reciprocally request information from a speaker. True questions seek information. They may be wh- questions or possibly forms answered with a "yes" or "no" if the response gives previously unknown information. Examples are: "Did you have hot dogs for lunch at pre-school?" (asked by a mother who does not want to fix the same item for supper); "Did you see my new fishing hat?" (asked by the dad who has misplaced it).

EXPANSIONS AND EXTENSIONS

In an expansion a child's utterance is repeated using a higher language level (Norris & Hoffman, 1990; Yoder, Davies, & Bishop, 1992). The adult listens to a child's incomplete or reduced
utterance and expands it by adding relevant grammatical, semantic, and/or phonological details (Hanrahan & Langlois, 1988). McDade & Varnedoe (1987, p. 25) provided these examples. Child, "Daddy shoe." A mother's response, including an acknowledgement, was, "Yes, that's daddy's shoe." A mother's added comment would be, "It's a big shoe." Young children learning language are more likely to spontaneously imitate expanded utterances than any other form of adult verbalization (Scherer & Olswang, 1984). Of all adult interactive behaviors, comments and expansions have been reported to be most closely linked to child language growth (Barnes, et al., 1983).

Extensions add new ideas within the same topic so that the play is extended to include new actions and/or events (Norris & Hoffman, 1990). If a child says, "Kitty big," the mother might add, "The big kitty wants a bowl of milk." The use of expansions and extensions is closely related to linguistic mapping and scaffolded modeling. "Linguistic mapping is using slightly more mature ways to communicate the child's immediately preceding communicative message...scaffolded modeling is giving the child an explicit prompt to imitate, a model of a more mature way to communicate his or her immediately preceding communicative message" (Yoder and Warren, 1993, p. 45).

CHARACTERISTICS OF A LANGUAGE DELAYED CHILD

It has been reported that some children present recognizable expressive language delay in the presence of presumably normal development in other areas (Whitehurst, Fischel, Caufield, DeBaryshe, & Valdez-Menchaca, 1989; Whitehurst, Fischel, Arnold, & Lonigan, 1992). Children with expressive language delay (ELD) evidence weakness in three major areas. First, these children appear to have better comprehension than expressive language (MacDonald & Carroll, 1992). Nonverbal tasks like building blocks to conform to a pattern, working puzzles, and "playing" cars with an obvious
meaningful intent often are high performance areas. While this type of child does not seem to have a notable cognitive delay and appears to understand many events in the environment, he/she frequently is a group observer instead of a participant (MacDonald, 1985, 1989).

PASSIVITY

Second, ELD children generally do not initiate or take part in communicative experiences. Some are passive and seldom initiate interactions (Fey, 1986), while others use nonverbal gestures, pointing, pulling, or tugging, to make their wants and needs known (MacDonald, 1985; MacDonald & Carroll, 1992; Wetherby, Yonclas, & Bryan, 1989). Socialization is a third notable component. Peers often ignore the nonverbal child, who then is left on the periphery of group interactions. The language delayed child, unsure of his/her niche in a group, generally is slow to initiate play with others, although, at times, will follow another's lead (MacDonald, 1989). The socialization component is often expressed as an educational and/or behavior problem, concomitant with expressive language delay.

AT-RISK ISSUES

Children with ELD seem to be at risk for later difficulties in four areas: basic skills (communication and reading), educational achievement, cognitive or intellectual development, and psychiatric disturbances (Whitehurst, et al., 1989). The child who uses nonverbal means for responding and gaining attention sometimes becomes aggressive and difficult to manage when unable to communicate needs and desires (Whitehurst, Fischel, Lonigan, Valdez-Menchaca, DeBaryshe, & Caulfield, 1988). Whitehurst and colleagues reaffirmed in a subsequent publication the link between conduct problems and expressive language delays when they stated, "We view conduct problems and expressive language delay as comorbidities" (Whitehurst, et al., 1992, p. 280). Therefore, a child who is in therapy which targets expressive language will often show
improvement in interactive social skills as well as language.

**EXPRESSIVE LANGUAGE DELAY**

Expressive language delay (ELD) can be defined in terms of the gap between (1) spoken language compared with (2) receptive language and nonverbal intelligence (Whitehurst, Fischel, Arnold, & Lonigan, 1992). "The child is badly behind in expressive development and normal in other areas, or much further behind in expressive development than in other areas" (Whitehurst, et al., 1992, p. 278). Expressive language delay usually is first evident in vocabulary and later in articulation difficulties. A diagnosis of ELD must rule out severe hearing loss or a pervasive developmental disorder, but such children are prone to experience oro-motor problems or have a history of transient otitis media (Whitehurst, et al., 1988). Birth complications, genetic factors, and laterality do not appear to be causally related; however, the literature reports up to two-thirds of ELD three-year-olds are male (Silva, 1980). Whitehurst et al., (1989) found a higher gender dominance figure. Eighty-four percent of their ELD children were male. The aim of the present investigation is to work consultatively with the primary caregivers of children who show an expressive language delayed profile.

**PURPOSE OF THE STUDY**

This study considered the efficacy of using a consultative coaching model with the Parents/Primary Caregivers of selected preschool children who have been identified as language-impaired by their respective school districts, or who scored at least 1.5 to 2 standard deviation points below the mean in expressive language on the Preschool Language Scale-3 (1992) or the Expressive One-Word Picture Vocabulary Test-R, (1990). The Primary Caregiver (PCG) for each child was the focus of the study. The premise was that a speech-language pathologist can indirectly enhance parent-child communicative interactions to the extent that there is demonstrable
growth in selected aspects of a child's language system. Each PCG was the active intervention agent for increasing communicative competence on the part of his or her child during the study, with the researcher serving as coach (direct supporting agent). Chapter III explains subject selection, type and method of data collection, consultation procedures, and data analysis. The University of Nebraska-Lincoln Institutional Review Board's and Lincoln Public Schools' approval was obtained prior to initiating the study.

RESEARCH QUESTIONS

Research questions to be answered are (1) Does the use of a consultative coaching model with a primary caregiver (PCG) of a language delayed preschool child result in measurable change to selected aspects of the PCG's communicative behaviors when interacting with the child? (2) Do the expected and improved communicative abilities of a PCG result in measurable changes in the child's communicative competence during the period of the study? (3) Are the improved reciprocal interactions stabilized and maintained after the consultative coaching has been completed?
Chapter III

METHODS

SUBJECTS

Subjects for this study were two dyads, each consisting of a primary caregiver (PCG) and a language-delayed preschool child. The children were identified as having an expressive language delay by their school district and/or by the researcher using the Preschool Language Scale-3 (PLS-3) (Zimmerman, Stiner, & Rond, 1992) which measures both receptive and expressive language, the Peabody Picture Vocabulary Test-Revised (PPVT-R) (1981) which measures receptive language, and the Expressive One Word Picture Vocabulary Test-R (EOWPVT-R) (Gardner, 1990).

The PCG-child dyads were chosen from recommendations provided by Lincoln, NE, Head Start programs, selected area-pediatricians and speech-language pathologists. All were furnished with a description of the study, and a one-page guide for identification of potential subjects (Appendix A). Criteria for recommending a child included chronological age between 28 and 54 months, residence in a monolingual American Standard English home, and evidence of a probable expressive language delay with a reported limited vocabulary of intelligible monosyllable words. Each child was screened for hearing sensitivity at 25 Db SPL pure-tone for 500, 1000, 2000, and 4000 Hz using a portable Beltone 10D audiometer, calibrated within the last year according to 1969 ANSI standards (revised 1989). Additionally, a child needed to appear to have normal cognitive abilities, and to have no known severe neurological, sensory, or emotional impairments.

STUDY CRITERIA

Referral agents were asked to give a written explanation of the study to the primary caregivers of children whom they believed
might qualify. Parents (primary caregivers) who responded favorably were contacted for an initial videotaping (first baseline session) to determine if the dyad appeared to meet the study criteria. The primary researcher arranged this meeting with the family to further explain the study and, if necessary, secure informed consent forms for both members of the dyad. Lincoln Public School personnel secured the informed consent forms for the dyads they recommended before the names were released to the researcher.

After the primary caregiver's questions were addressed during the initial meeting, the dyad was videotaped during a 20-minute free-play situation in their home. Pre-selected stimuli (e.g., appropriate toys, books) were provided by the researcher, but the parent and child could also use familiar items from the home. During all language sampling situations the parent (PCG) was instructed to play normally with the child.

**SALT Analysis**

The video equipment was a Canon E350 8mm video camcorder and Sony Metal MP P6-30 8mm cassettes. The tapes were copied onto Scotch PHG/T-120 videocassettes within 24 hours for easier viewing. All language samples were transcribed within ten days of the taping; however, the majority of the tapes were transcribed within 48 hours. The full 20 minutes were transcribed and coded for use with The Systematic Analysis of Language Transcripts (SALT) (Miller & Chapman, 1990) and used to figure mean length of utterance (MLU), type token ratio (TTR), total number of words (TNW), and number of different word roots (NDW). Using procedures adapted from Girolametto (1988b), the turn-taking ratio between the PCG and the child was determined. The full 20-minute tape was also coded to obtain frequency counts of the PCG's use of the four targeted intervention strategies and the child's verbal/nonverbal ratio.

If the dyad appeared to meet initial study criteria, times for
a formal child assessment and two more baseline videotapings were arranged. The three baseline videotapings, two in the dyadic home and one at the Barkley Memorial Center, were used to ensure that the dyad qualified for the study. The following guidelines for final inclusion were used: (1) If more than two recommended dyads met both PCG and child criteria, the choice of which two dyads would complete the study depended on (a) the child's and/or the caregiver's need for the type of service offered by the study, and (b) the probability of scheduling conflicts between the dyad and the primary researcher; (2) if none of these factors emerged, the dyads were to be assigned a number to be used for random selection purposes.

INCLUSION CRITERIA

The three standardized tests mentioned on the previous pages and the taped PCG/child interactive language samples taken in baseline sessions were used to prepare a profile of each child's language abilities. Subjects between 28 and 35 months of age needed to score at least 6 months below their chronological age norms in Expressive Communication on the PLS-3, or show a 20 point difference between Auditory Comprehension and Expressive Communication standard scores on the PLS-3. The PPVT-R was used as an additional index of receptive vocabulary ability and the EOWPVT-R was used as the second expressive measure. For inclusion in the study, subjects between 36 and 48 months of age needed to score at least 12 months lower than age norms in Expressive Communication on the PLS-3, or show a 20 point difference between Auditory Comprehension and Expressive Communication on the PLS-3.

PRIMARY CAREGIVERS

An expressive language delayed child was accepted for this study only if his/her Primary Caregiver (PCG) evidenced a need for training in communication strategies and agreed to take the time to work with the researcher. However, a PCG who had been trained in the
use of facilitative child language techniques was excluded. The PCG also had to use American Standard English as his/her primary language. During baseline taping the frequency of the PCG's use of each of four strategies—(1) following the child's lead with contingent responses and comments, (2) use of self talk and parallel talk, (3) use of open-ended questions, and (4) use of expansions and extensions—was tallied. The number of times (e.g., n = 4) each strategy was employed was tabulated during the 20-minute samples. During baseline videotaping the PCG needed to show either five percent or less usage of two of the four target intervention strategies or ten percent or less instances for all four intervention strategies. The PCG was also given a binaural puretone hearing screening at 25 dB SPL for the frequencies of 500, 1000, 2000, and 4000 Hz.

PARENT PRE-TEST AND KNOWLEDGE BASE

Two researcher-developed instruments for gathering pre- and post-study data about the PCG's knowledge of child language development were administered during the baseline phase. The Parent Pre-Test (Appendix B) was prepared to determine a caregiver's initial awareness of normal child language development. The 15-item instrument was limited to the emergent language of a preschool child. Items on this instrument were chosen for their universal application, high interest, and later application as discussion starters during consultative coaching sessions.

The second researcher-developed instrument, a 15-item Knowledge Base (Appendix C), contained statements generally considered true by child language experts (Berko-Gleason, 1989; McCormick & Schiefelbusch, 1990; Owens, 1992). All items in the Knowledge Base were relevant and appropriate for parent/SLP discussion. They were included to prompt caregiver input into the consultative coaching process and to serve as a basis for later
coaching.

FIELD TESTING

The Pre-Test and Knowledge Base were field tested to ensure that the material covered was relevant and that the presentation was understandable. The field testing was done with eight mothers of preschool children (return rate 100%) and later with six graduate students majoring in speech-language pathology. All were white, middle-class adults. Four of the eight mothers were college-educated. Three were certified teachers—one elementary and two secondary; none were teaching at that time. The other four mothers were high school graduates. All mothers had been out of school five to ten years. One high-school-educated mother had two children receiving speech therapy. A second high-school-educated mother had a language delayed four-year-old who had received speech therapy for over a year. Subsequent to the field testing, the three-year-old son of one of the college educated mothers qualified for speech services. Additional information on child/caregiver field testing is contained in Appendix E.

Feedback on the content and wording of the Pre-Test and Knowledge Base also was obtained from six currently active professional speech-language pathologists. They addressed the content validity and the practicality of the two instruments and provided useful suggestions on wording and format. After the field testing, minor adjustments were made to the two instruments, which were then used with the PCGs.

SETTINGS

Child/caregiver interactive videotaping was done in each dyad's home and at the Barkley Memorial Speech-Language and Hearing Clinic. Interactive videotaping from the two different settings was used to make the information secured representative. Consultative coaching between the researcher and a PCG occurred both in the home
and at Barkley Memorial Center, with the majority of the sessions being held at the dyadic home. In the original procedural time line intervention phase (Table 3-2, page 50) sessions 1, 7, 9, 12, 14 and 16 were to be held at Barkley, with the remainder being in the dyadic home. It was not possible to adhere to this schedule with either dyad due to caregiver or child illness, caregiver employment schedules, and transportation difficulties. The times and places for taping and intervention sessions were set in a flexible manner to fit each family's schedule. Dyad A came to Barkley for three intervention phase sessions while Dyad B came twice. The third baseline session (Data Point 3) and the follow-up session (Data Point 18) were also held at Barkley for both dyads. All formal child testing, both pre- and post-intervention, was done in the clinic setting.

RESEARCH DESIGN

This study used two separate single subjects (dyads) in a multiple-baseline design. Each dyad served as its own control going through a no-treatment and a treatment period. The second dyad was supposed to serve as a control for the first dyad in a multiple-baseline across-subject design (McReynolds & Kearns, 1983), but the difficulty of finding a second dyad that qualified in a timely manner made this step impossible. Three advantages to a multiple-baseline design are (1) the ability to use a small number of subjects selected directly from a population to which the treatment applies, (2) the ability to do an in-depth analysis of behavioral changes during treatment, and (3) each subject is his/her own control, eliminating the need for a nontreatment control group (Harris, 1988).

In multiple-baseline designs, treatment effects are demonstrated by introducing intervention to different behaviors at different points in time. If one baseline behavior changes when the
treatment begins and the other stays constant, the effects can be attributed to the intervention addressed to the first behavior. Once intervention has begun it need not be withdrawn, consequently multiple-baseline designs "do not share the practical, clinical, or ethical concerns raised in ABAB designs by temporarily withdrawing the intervention" (Kazdin, 1982, p. 126). This study used a multiple-baseline design to observe the behavior of the PCG and child in each dyad when specific intervention strategies were taught to the adult.

DATA COLLECTION

The study was planned in three phases: baseline, intervention, and follow-up over a four-month period. The same sequence and format was followed for both dyads; however, since each dyad was considered a single subject in the design, changes in the length of time spent on a specific strategy were permissible between dyads. The order of presentation remained constant.

FREQUENCY TALLIED

The frequency with which parents (PCGs) used each of four strategies in a session was tallied from the videotape for the entire 20 minutes, and a frequency count was charted. A percentage of use for the specific strategy, based on the total adult turns during the tape analyzed, was then figured. The original study methods included the following rule to move from baseline to intervention: "If the baseline fluctuates incrementally, an average of the three baseline data points will be figured for each strategy. If the baseline fluctuates decrementally, the average will be figured, but the downward movement will make a fourth baseline data point necessary. Regardless of the direction of the baseline, the researcher will start intervention after four baseline data points."

Unfortunately, there were problems with script coding for Dyad A. The transcribed scripts were not coded promptly (e.g., Data Point
I went to Coder A on 10-18-93 and to Coder C on 10-26-93; Coder A finished the script on 11-11-93, but the two did not reach consensus until the middle of December. Because of the unforeseen delay in obtaining the coded data, the researcher and Coder C informally reviewed the videotapes to ascertain if the four strategies were being implemented and intervention could begin. Based on their consensus of agreement, it appeared the PCG was following the child's lead, but did not use self and parallel talk nor expansions and extensions at even a chance level. In addition, the PCG's inquiry strategy included a large majority of closed questions which were offered at a constant and fast rate. Since the literature reviewed (Fey & Leonard, 1983; Garrard, 1986; Lund, 1986) considers closed questions as negative to child language development, this was an area of concern.

The researcher realized another coder would have to be utilized, as delays in coding with Dyad A's scripts continued. It took considerable time to secure and train another coder for Dyad B's tapes, so the same informal analysis was done on the first three tapes for the second dyad. Even though the design had been changed from a multiple-baseline-across-subjects to a multiple-baseline design with two single subjects, similar methodologies were used with both dyads.

**VARIABLES**

Independent variables controlled by the researcher were the intervention strategy topics discussed with each PCG, the five step consultative coaching model followed, and the subject selection. Dependent variables were changes in a child's communicative performance and a PCG's use of selected communicative strategies. Selected measures of a child's expressive verbal behaviors were noted throughout the study as evidence of strategy effectiveness. However, behavioral observations of the child were a secondary
consideration in the study. The primary focus of the study was to track the PCG conversational variables: (1) frequency of following the child's lead with contingent responses/comments, (2) frequency of self talk and parallel talk, (3) a ratio of open-ended to closed questions, and (4) frequency of expansion and extension usage. Dependent measures for both children and adults were (1) mean length of utterance in morphemes (MLU); (2) total number of words in a 20-minute segment (TNW); (3) total number of different words roots (NDW); and (4) a turn-taking ratio (Table 1, p. 43).

Table 3-1 Primary Caregiver and Child Variables

<--------Primary Caregiver Variables-------->

<table>
<thead>
<tr>
<th>FCL</th>
<th>S&amp;PT</th>
<th>O/CQ</th>
<th>E&amp;ET</th>
<th>MLU</th>
<th>TNW</th>
<th>NDW</th>
<th>TuTa</th>
<th>V/NV</th>
<th>TTR</th>
</tr>
</thead>
</table>

<--------Child Variables-------->

Table 1 key:

FCL = Use of following the child's lead with contingent responses
S&PT = Use of self talk and parallel talk
O/CQ = Ratio of open to closed questions
E&ET = Use of expansions and extensions
MLU = Mean length of utterance in morphemes
TNW = Total number of words in 20-minute segment
NDW = Number of different word roots
TuTa = Turn-taking ratio between the child and the PCG
V/NV = Verbal to nonverbal ratio for the child
TTR = Type-token ratio for the child

The variables of MLU, TNW, and NDW, used by Miller (1990) for 3 to 13-year-old children in the SALT Reference Database, were taken from the PCG's discourse to judge the existence and extent of communicative match (or mismatch) and conversational control (MacDonald, 1989). Mean length of utterance in morphemes was the
average morpheme length of a speaker's utterances. To obtain MLU the total number of morphemes was divided by the number of utterances in the sample (Miller & Chapman, 1990; Owens, 1991). Bondurant et al., (1983) found mothers' MLU to be a relevant variable when studying their discourse directed to normally developing and language-delayed preschool children.

The principal adult variables: following the child's lead with contingent responses and comments, types of questions used, frequency measures of self talk and parallel talk, and expansions and extensions, were figured in relation to the total number of adult utterances. The ratio of turn-taking was the percentage of turns used by each member of the dyad in the total 20 minutes (a variation of Girolametto, 1988b).

CHILD VARIABLES

Additional child communicative variables included a type-token ratio (TTR) and a ratio of verbal to nonverbal initiations and responses. The type-token ratio was used to show lexical variety, while the ratio of verbal to nonverbal initiations and responses was designed to reveal change if a child began to increase his/her speech output. The type-token ratio (TTR) was the number of different word roots compared to the total number of words from the first 50 complete and intelligible utterances (Miller & Chapman, 1990). If 50 words were not available, the total words were used for calculation. "Word" was defined by the presence of a blank space between valid alphanumeric entries. Numeric characters, i.e., 345, 232, etc., were counted as words.

TURN-TAKING RATIO

The PCG/child turn-taking ratio was the percentage of turns used by each member of the dyad in the sampling (a variation of Girolametto, 1988b). The ratio of verbal to nonverbal communication acts was determined by taking a frequency count of the number of
child verbal utterances and comparing it to the number of child vocalizations, gazes, facial expressions, hand/body postures, and other similar nonverbal gestures and/or behaviors used for communication (Norris & Hoffman, 1990).

Wetherby and Prizant (1993), in the *Communication and Symbolic Behavior Scales* examiner's manual, defined a communicative act as "An interactive behavior that consists of a gesture, vocalization, or verbalization that is directed toward the adult and that serves a communicative function." In this study verbalizations, regardless of intelligibility, were considered verbal utterances, whereas vocalizations were considered nonverbal. The following definitions, taken from the examiner's manual of *The Rossetti Infant-Toddler Language Scale*, (Rossetti, 1990), were used to differentiate the two: "Verbalization includes the child's expression of true words or word approximations. Vocalization includes the child's production of sounds and sound combinations that are not true word attempts" (Rossetti, 1990, p 11).

**CONSULTATIVE COACHING**

A consultative coaching model, adapted from work by Brown, Donohue, & Murphy (1988) and Showers (1983), was used for intervention. As noted in Chapter II, there are five basic steps to follow in the coaching model: presenting the rationale and theory behind the strategy, demonstrating how to implement the strategy, setting up practice opportunities for the trainee with feedback from the coach, repeating the first three steps as necessary, and jointly designing a coaching plan to incorporate the intervention strategy into the family's daily schedule.

The four intervention strategies were explained to the family by the researcher after all baseline taping and the initial child assessment were completed. The strategies were presented at the same interpretation session in which the child's assessment profile was
discussed. One strategy was cooperatively selected by the primary researcher and the PCG of the first dyad as the initial target intervention. As the study progressed the other three strategies were introduced.

Portions of almost every consulting session were audiotaped with the researcher wearing a lapel microphone, or videotaped with the equipment used for securing the dyadic interactions. Due to technical difficulties (e.g. lack of proper cord attachment, Child B grabbing and breaking the tape recorder), three of the twenty-eight intervention sessions were not recorded. Of the remaining sessions approximately three more tapes were of poor quality and the researcher labeled them as such.

The same order of intervention strategies was followed with the second dyad to obtain operational replication (Borg & Gall, 1989). The SLP/coach helped the PCG learn to implement the use of (1) following the child's lead with contingent responses and comments, (2) self talk and parallel talk, (3) open questions, and (4) expansions and extensions. Each of these strategies has been discussed in the literature review, but a brief summary is presented below.

FOLLOWING THE CHILD'S LEAD WITH CONTINGENT RESPONSES

A contingent response was defined as an adult responding to a child's nonverbal indicators (e.g., gestures, gaze) as well as to verbal utterances. The adult could respond verbally or nonverbally to what the child had said or was attending to at the time, but the focus needed to be on the child's topic of interest. The definition of comments--also called descriptions, models, or expatiations--was adult utterances that provide new semantic information regarding a child utterance.

SELF TALK AND PARALLEL TALK

Self talk was the adult talking about his/her own
participation during a joint activity with the child. In parallel talk the adult descriptively talked out the child's actions, usually during a joint or shared activity. Parallel talk differed from comments by its focus on what the child was attending to or doing at the time.

**TYPES OF QUESTIONS USED**

From previous literature it was learned that questions can facilitate or hinder child language growth and can be dichotomously divided into limiting and true questions. Limiting questions included questions rendered with an answer, tag questions, and leading questions that were controlling because they placed boundaries on a partner's response. True questions sought information and were not considered controlling. With a true question the listener was free to supply requested information, provide more details, or reciprocally request information from a speaker.

**EXPANSIONS AND EXTENSIONS**

In an expansion a child's utterance was repeated using a higher language level. The adult listened to a child's incomplete or reduced utterance and expanded it by adding relevant grammatical, semantic, and/or phonological details. Extensions added new ideas within the same topic so that the utterance included new actions and/or events.

**INTERVENTION PHASE**

The researcher wore a microphone to record evidence that the consultative coaching paradigm was followed during the intervention phase. The frequency with which the PCG used each targeted strategy was tallied after the tapes were transcribed and coded for the intervention behaviors under study.

During the intervention phase with Dyad A the trend line for a specific strategy was plotted and considered for deciding when to
begin intervention with Dyad B. Justification for starting the second dyad and/or moving to another strategy had been established as two consecutive incremental data points or three consecutive flat data points above the baseline. Treatment was to be initiated with the second dyad when a noticeable change was evident in the first PCG's use of the initial intervention strategy, but not later than after the sixth intervention session (three weeks) with the first dyad.

In actuality, because the second child recommended for the study did not qualify and it took several weeks to find a dyad which did meet the study criteria, the intervention phases of the two dyads did not overlap. Baseline data for Dyad B was being taken during the final intervention data points for Dyad A.

PROCEDURAL TIME LINE

BASELINE SESSIONS 2 AND 3

During session two the researcher met with the child and caregiver in their home. The first activity was to secure the second baseline videotape following the same conditions used during the initial taping. Time was allowed to answer questions the primary caregiver had about the study and to clarify dates and times for succeeding sessions. It had been planned that a structured schedule would be followed to secure data and teach the PCG intervention strategies (See Table 2, page 50, for the original Procedural Time Line). The researcher found that family illness, caregiver employment, the desire of secondary caregivers to be involved in the study, and other unplanned responsibilities made it impossible to follow the planned format.

CHILD ASSESSMENT

In session three the dyad came to the Barkley Memorial Center Speech-Language & Hearing Clinic, where the child was tested (PLS-3, PPVT-R, EOWPVT-R) by graduate students who were majoring in speech-
language pathology. These graduate students were used to ensure that there would be no examiner bias from the primary researcher in securing the child assessment data. The baseline data collection

<table>
<thead>
<tr>
<th>Pre-Study - Baseline Videotaping Session 1 at Dyadic Home - DP 1</th>
<th>DP = Data Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline Sessions 2-3</td>
<td>Intervention Session 1</td>
</tr>
<tr>
<td>Dyadic Home - Data Point (DP) 2</td>
<td>Barkley Memorial Center</td>
</tr>
<tr>
<td>Barkley Memorial Center - DP 3</td>
<td>Interpretation Session</td>
</tr>
<tr>
<td>Intervention Sessions 2-3</td>
<td>Intervention Sessions 4-5</td>
</tr>
<tr>
<td>Dyadic Home - DPs 4 and 5</td>
<td>Dyadic Home - DP 6</td>
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<tr>
<td></td>
<td>Barkley Memorial Center - DP 7</td>
</tr>
<tr>
<td>Intervention Sessions 6-7</td>
<td>Intervention Session 8</td>
</tr>
<tr>
<td>Dyadic Home - DP 8</td>
<td>Dyadic Home - DP 10</td>
</tr>
<tr>
<td>Barkley Memorial Center - DP 9</td>
<td></td>
</tr>
<tr>
<td>Intervention Sessions 9-10</td>
<td>Intervention Session 11</td>
</tr>
<tr>
<td>Dyadic Home - DP 11</td>
<td>Dyadic Home - DP 13</td>
</tr>
<tr>
<td>Barkley Memorial Center - DP 12</td>
<td></td>
</tr>
<tr>
<td>Intervention Sessions 12-13</td>
<td>Intervention Session 14</td>
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<td>Barkley Memorial Center - DP 14</td>
<td>Barkley Memorial Center - DP 16</td>
</tr>
<tr>
<td>Dyadic Home - DP 15</td>
<td></td>
</tr>
<tr>
<td>Intervention Session 15</td>
<td>Intervention Session 16</td>
</tr>
<tr>
<td>Dyadic Home - DP 17</td>
<td>Dyadic Home - DP 18</td>
</tr>
</tbody>
</table>

Follow-up two weeks after Data Point 19 - Final Date Point

Barkley Memorial Center
procedures were videotaped for later review to ensure that testing protocols were followed. The third baseline videotape was made in the middle of child testing to allow the child a play break between tests. This was a change from the original plans. The hearing screenings were postponed due to a lack of time and completed later at the home of the dyad. Both dyads passed the hearing screening measure. These changes were then followed with Dyad B.

The PCGs completed the Parent Pre-Test and Knowledge Base (Appendices B and C) during and after session three. Time also was allowed for acquiring additional relevant case history information and for responding to inquiries from the PCG. After all tests were scored and the first three language samples were reviewed, the researcher met with the family to present a profile of the child's present communication skills, jointly study baseline videotapes, examine the child's baseline testing, and clarify components of the four main adult intervention strategies. With Dyad A, the group cooperatively decided to use self-talk and parallel talk first. Then the rationale behind the chosen strategy, and a brief demonstration of its use, were presented in the session. No data was taken during this meeting.

INTERVENTION VIDEOTAPING

Starting with the first intervention session, the first 20 minutes of every coaching session was to be devoted to securing data by videotaping. However, because Child A was asleep when the researcher arrived for the first intervention videotaping (Data Point 4), the researcher and PCG watched part of a commercial video on adult/child interactions before filming the data point. This change was followed with Dyad B by using the video at the end of the interpretation session. In intervention sessions two and three, the researcher met with the dyad in the home for taping and coaching. The researcher reviewed the rationale behind the first strategy,
role-played with the parent, and demonstrated its application during play with the child during the second session. The PCG then practiced using the strategy and received constructive feedback. The same coaching steps were reviewed during session three with emphasis on using the strategy during everyday situations.

During the fourth session, the researcher took an anecdotal probe of the intervention strategy usage, and made notations about the apparent communicative competencies of the child and PCG. These notes were to allow the researcher/coach to incorporate communicative examples from the day’s playtime immediately into feedback, to engage in a sharing of ideas, and to use probe data to determine if additional coaching was needed on that strategy. The probe procedure was then followed with each strategy to ascertain if a move to the next strategy was warranted. Probes were always done as frequency counts of the targeted behavior over a five to ten-minute period of time.

In session five the principles behind the first intervention strategy were reviewed, the previous week's videotape was studied, and handwritten notes from DP 5 were discussed by the coach and PCG. The researcher/coach and PCG jointly decided whether enough progress had been made to warrant moving to the second strategy, or if additional coaching and practice on the initial strategy was needed. The general magnitude criteria discussed previously--two consecutive data points that are increasing or three consecutive flat data points--were generally used to determine movement to a new strategy. However, other factors (e.g., PCG motivation and perceived ability to change) also influenced the decision-making process.

GOALS ADDED, BUT NEVER DELETED

Whenever a new intervention strategy was introduced, the PCG was instructed to continue working on a former goal even though it no longer was the primary focus for consultative coaching sessions.
The PCG always was able to ask questions and receive feedback regarding former intervention strategies. Review of previously introduced strategies and practical advice on how to use more than one indirect language technique at a time was incorporated into the sessions as the PCG's skill increased. The PCG and researcher/coach followed the established coaching model while implementing the remaining strategies throughout intervention phase data points. Information on the four strategies was introduced with both dyads. Details are provided in Chapters IV and V.

The researcher/coach met with the members of the dyad on a regular basis throughout the intervention phase. Data points and coaching sessions were scheduled twice a week when possible. At times, due to schedule conflicts or illness, the times between sessions were longer. Baseline taping for Dyad A began on October 8, 1993, and was completed by October 19. After a Saturday parent interpretation session, intervention started with Dyad A on October 26 and lasted until December 29, 1993. The follow-up testing and videotaping were done on January 15, 1994. Baseline taping for Dyad B began on December 4, 1993, and was completed on December 9. The interpretation session and initial coaching were held at the dyad's home on December 28. Intervention phase videotaping and coaching started on January 8, 1994, and continued until April 5, 1994. The follow-up session was April 22.

FOLLOW-UP AND POST-TESTING

Follow-up

Post-testing was done at the Barkley Memorial Center approximately two weeks after each concluding intervention session. The final interactive language sample was taken and the child was post-tested with the three pre-study tests (the PLS-3, the EOWPVT-R, and the PPVT-R). The PCG completed the Post-Test (Appendix B, same as the Pre-Test) the study's Consultation Evaluation Form (Appendix
D), and was given the opportunity to verbally express an opinion about the apparent efficacy of the program. All treatment and post-testing data were entered and analyzed using the procedures, time segments, and equipment reported previously.

DATA ANALYSIS

Baseline, treatment, and post-treatment data on the dyads were subject to descriptive and SALT computer analyses. All conversation was transcribed in English orthography unless no English gloss could be provided. English glosses of utterances were used because detailed phonetic and prosodic analyses were not considered necessary for the present study. The material prepared for SALT was coded as idiosyncratic lexicon, complete and intelligible, unintelligible, or incomplete words according to SALT1 conventions for preset programs (Miller & Chapman, 1990). The coded transcript was used to quantify the following PCG behaviors: following the child's lead with contingent responses and comments, use of self talk and parallel talk, a ratio of open to closed questions, use of expansions and extensions. Codes were also inserted to track adult and child turns and the child's verbal-nonverbal turns for each script.

The child's and caregiver's mean length of utterance (MLU) in morphemes, total number of words (TNW), and total number of different word roots (NDW), and the child's type-token ratio were taken from the SALT1 analysis of the scripts. The SALT Reference Data Base (Miller, 1990) provides age-level means for mean length of utterance (MLU), total number of words in a 12-minute sample (TNW), and total number of different word roots (NDW). These same variables were used to allow a rough comparison between the Reference Data Base age-means and the children in the present study. Ratio and frequency data points were determined and graphed for each dyad. Notable changes are reported in later chapters.
RELIABILITY

The original transcripts from each dyad were prepared by Transcriber A (SJG), the primary researcher. Intra-rater reliability spot checks were done on every fourth videotape transcription. Inter-rater reliability was done by Transcriber B (GLP)—a certified speech-language pathologist with 17 years of professional experience—during at least one video taping per dyad for each phase of the study. Differences in the transcripts were resolved by reviewing the tape until consensus was reached. Coder C (SLS) was prepared to resolve potential transcription differences; however, none occurred. Transcribers A and B and Coder C first worked through practice tapes to clarify definitions.

PRE-STUDY TRAINING

Prior to undertaking this investigation, Transcriber B met with the primary researcher four times to compare transcriptions and establish inter-rater reliability using field study videotapes. Inter-rater reliability for the first 20-minute transcription was 84 percent on a point-by-point comparison. The major areas of disagreement were due to the low intensity of the child's voice and consensus was easily reached for the final script. Because at least 90 percent transcription reliability was a goal of the study, a second practice tape was done. Inter-rater reliability for that tape was 98 percent. During the actual study, transcript inter-rater reliability ranged from 93 to 99.5% with a mean of 98.16% for six scripts. Decision-making criteria for transcripts are found in Appendix F.

Coders A and C met for training with the primary researcher four times. Coder A was a graduate student just beginning her speech-language pathology studies. Coder C was an active speech-language pathologist with 27 years experience. Pre-study inter-rater reliability for Coders A and C on pertinent variables ranged from 85
to 96 percent with a 90 percent average. Coder A's task was to code and enumerate the variable data from all videotapes using the researcher's definitions. Coder A completed all of Dyad A's videotapes, but, because of her personal time constraints, a new research assistant, Coder B, was trained to code the second dyad's tapes. Coder B, a senior undergraduate majoring in speech-language pathology, was trained by the primary researcher and quickly established 99% inter-rater reliability with Coder C.

INTER-RATER RELIABILITY

Both Coders A and B's work was subject to inter-rater reliability checks with Coder C for one session per phase of the study (Data Points 1, 14, 18). In all cases, their results were compared and consensus reached. Each variable studied was subject to point by point inter-rater comparison. The raters replayed segments to resolve any differences and ensure inter-rater reliability and consensus. The primary researcher was available if consensus could not be reached.

Inter-rater reliability, calculated from the coded scripts before the consensus discussion, ranged from 92 to 98 between Coders A and C with a mean of 95.66%. One problem area that emerged during the coding of the first three data points involved the child's verbal and nonverbal utterances. The coders consulted with the primary researcher and the rule was solidified. It was decided that the child's utterances had to be classified either as verbal or nonverbal. Any utterance with a verbalization would be a child verbal turn even if it had nonverbal components within the utterance. Nonverbal gestures and vocalizations would be considered nonverbal child turns. Verbalizations could be intelligible enough to transcribe or gloss, or be unintelligible and transcribed with "XXX". Inter-rater reliability for Dyad B between Coders B and C ranged from 97% to 99% with a mean of 98%.
CHECXS ASSURE COACHING METHOD FOLLOWED

During the intervention phase, the researcher/coach logged each session by noting which of the coaching steps had been addressed. In addition portions of each consulting session were audiotaped with the primary researcher wearing a lapel microphone or by continuing to use the videotaping equipment. Coder C (SLS) listened to one entire consultative coaching session per dyad and parts of four others to verify the presence of the coach's behaviors with regard to the five coaching steps. Results from the checks are presented in Chapter VI.

The quality of these tapes varied greatly because of the difficulty of listening to two to three adults and one to two children. Very often the secondary caregiver wanted to be present for coaching and discussion. This meant that a sibling also was present. There was also a noise factor when the adults were reviewing and discussing a previously taped session during the coaching. With the second dyad an added problem emerged. Child B was fascinated with mechanical items and tried to play with the recorder often, finally breaking one.
CHAPTER IV

Results/Discussion Dyad A

RESEARCH QUESTIONS REVISITED

Three questions were posited at the beginning of this study: (1) Does the use of a consultative coaching model with a primary caregiver (PCG) of a language delayed preschool child result in measurable change to selected aspects of the PCG's communicative behaviors when interacting with the child? (2) Do the expected and improved communicative abilities of a PCG result in measurable changes in the child's communicative competence during the period of the study? (3) Are the improved reciprocal interactions stabilized and maintained after the consultative coaching has been completed?

FORMAT FOR REPORTING DATA

In both dyads, the primary caregiver was female and the child male. For this reason, in the final three chapters, feminine pronouns will be used at appropriate times to refer to the PCG and male pronouns to the child. In answering the above questions, each dyad will be discussed separately. Chapter IV considers the results and discussion for Dyad A, while Chapter V will cover similar material pertaining to Dyad B. In each case, the results relating to the various study variables will be presented first, then followed by a discussion. This format will enable the reader to have immediate reference to the relevant figures and tables.

The results will be preceded in each chapter by dyadic background information and by two sets of graphs showing the change in the principal study variables. Note that Figures 4-1 and 4-3 are duplicates, presented twice for comparison to different child variables. The vertical lines in each figure represent the point at which a strategy was first introduced. The abbreviated name of the strategy is indicated at the top of the figure and over the sessions when it was the primary target.
Figures 4-1 and 4-2  DYAD A GRAPHS OF PRINCIPAL RESULTS

Change in Targeted Strategies for PCG A

Graphed Over Time

Data Points

Change in THW and NDW for Child A

Graphed Over Time

Data Points
Figures 4-3 and 4-4

Change in Targeted Strategies for PCG A

Mean Length of Utterance for Child A
INTRODUCTION TO DYAD A

The dyad for the first single subject study was made up of a 41-month old male, Child A, and his maternal grandmother, PCG A. The dyad was recommended for inclusion in the study by administrators of the Lincoln Public Schools Head Start program. Child A's recommendation came following his failure on a language screening at the beginning of the 1993-94 school year. As a three-year-old in Lincoln's Head Start program, he was being served by a visiting teacher who came to his grandmother's home once a week.

The grandmother cared for Child A and his 59-month old brother during the week, usually keeping them all day, evenings and through the night. The mother worked and attended a local community college four nights a week. Child A's brother was receiving speech therapy while attending an Early Childhood Special Education/Head Start program.

The mother, a single parent, had the boys on week-ends and also spent time with them between work and classes. Some testing, interpretation, and coaching sessions with Dyad A were held on Saturdays, at the family's request, to enable the mother to participate. PCG A was an experienced child care provider. She had raised her own three children and several foster children as well as providing baby sitting for others.

DYAD A

Results

Baseline videotaping with Dyad A started on October 8, 1993 at the dyadic home and was completed on October 14th at the Barkley Memorial Center. The initial baseline taping was unusual because of the child's high production figures. He used 52.49% of the total turns compared to 47.51% for the grandmother during the first interactive play session (Table 4-1). It was the only data point where the child's percent of turns was higher than the PCG's. Table
shows turn-taking frequency and percentages. For the 18 data points adult turns (AT) and child turns (CT) were added to get total turns (TT); then AT and CT were divided, in turn, by TT to secure the percentages.

Table 4-1: DYAD A - TURN FREQUENCY AND PERCENTAGE

<table>
<thead>
<tr>
<th>DP</th>
<th>AT</th>
<th>CT</th>
<th>TT</th>
<th>A% TT</th>
<th>C% TT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>162</td>
<td>179</td>
<td>341</td>
<td>47.51%</td>
<td>52.49%</td>
</tr>
<tr>
<td>2</td>
<td>183</td>
<td>143</td>
<td>326</td>
<td>56.13%</td>
<td>43.87%</td>
</tr>
<tr>
<td>3</td>
<td>235</td>
<td>179</td>
<td>414</td>
<td>56.76%</td>
<td>43.24%</td>
</tr>
<tr>
<td>4</td>
<td>198</td>
<td>122</td>
<td>320</td>
<td>61.88%</td>
<td>38.12%</td>
</tr>
<tr>
<td>5</td>
<td>208</td>
<td>177</td>
<td>415</td>
<td>57.35%</td>
<td>42.65%</td>
</tr>
<tr>
<td>6</td>
<td>294</td>
<td>135</td>
<td>429</td>
<td>68.53%</td>
<td>31.47%</td>
</tr>
<tr>
<td>7</td>
<td>203</td>
<td>157</td>
<td>360</td>
<td>56.39%</td>
<td>43.61%</td>
</tr>
<tr>
<td>8</td>
<td>221</td>
<td>155</td>
<td>376</td>
<td>58.78%</td>
<td>41.22%</td>
</tr>
<tr>
<td>9</td>
<td>200</td>
<td>171</td>
<td>371</td>
<td>53.91%</td>
<td>46.09%</td>
</tr>
<tr>
<td>10</td>
<td>301</td>
<td>263</td>
<td>564</td>
<td>53.37%</td>
<td>46.63%</td>
</tr>
<tr>
<td>11</td>
<td>209</td>
<td>181</td>
<td>390</td>
<td>53.59%</td>
<td>46.41%</td>
</tr>
<tr>
<td>12</td>
<td>209</td>
<td>184</td>
<td>393</td>
<td>53.18%</td>
<td>46.82%</td>
</tr>
<tr>
<td>13</td>
<td>182</td>
<td>171</td>
<td>353</td>
<td>51.56%</td>
<td>48.44%</td>
</tr>
<tr>
<td>14</td>
<td>179</td>
<td>178</td>
<td>357</td>
<td>50.14%</td>
<td>49.86%</td>
</tr>
<tr>
<td>15</td>
<td>198</td>
<td>175</td>
<td>373</td>
<td>53.08%</td>
<td>46.92%</td>
</tr>
<tr>
<td>16</td>
<td>191</td>
<td>166</td>
<td>357</td>
<td>53.50%</td>
<td>46.50%</td>
</tr>
<tr>
<td>17</td>
<td>217</td>
<td>181</td>
<td>398</td>
<td>54.52%</td>
<td>45.48%</td>
</tr>
<tr>
<td>18</td>
<td>233</td>
<td>211</td>
<td>444</td>
<td>52.48%</td>
<td>47.52%</td>
</tr>
</tbody>
</table>

Legend: data points (DP); adult turns (AT); child turns (CT); adult percent of total turns (A% TT); and child percent of total turns (C% TT).

In the first data point (DP) the child took 179 turns, and the grandmother had 162, her lowest number during any session. The highest number of total turns, 564, was taken in DP 10 with 301 ATs for PCG A and 263 CTs for the child. Child A's lowest turn frequency came during DP 4 when he took 122 turns. PCG A maintained dominance in all sessions after the initial data point although the dyad split
almost evenly in DP 14, when the child had 49.86% and the caregiver 50.14%. DPs 4 (61.88%) and 6 (68.53%) contained the largest percentage of adult turns.

Even though Child A took more turns in DP 1, PCG A used slightly more words. Her total number of words (TNW) was 800 compared to 761 for the child (Table 4-2, page 66). There was also a close relationship in the number of different word roots (NDW) for the dyad with 204 for the PCG and 168 for the child. The tendency toward balanced interaction during DP 1 was also evident in mean length of utterance (MLU). For the PCG, MLU was 5.05, Brown's Post V Stage, while the child's was 3.97, Brown's Late IV/Early V Stage (Brown, 1973). However, the balanced turn-taking interaction of the first session did not continue during the next two baseline data points. As shown in the Table 4-1, the PCG took 183 (56.13%) and 235 (56.76%) turns respectively in DPs 2 and 3.

Discussion

The dyad had been playing with Play Doh when the researcher arrived for the first data point. Because the permission slips had been signed previously and the dyad seemed to be enjoying playing together, the researcher verbally asked permission to immediately start taping. Most of the conversation dealt with the joint play activity and the three family cats. The PCG appeared to attend to the child's conversation and used some natural interactive behaviors during the session.

A note in the researcher's journal after the first session was, "This is quite a grandmother!" The implication was that the PCG seemed attentive to the child and cognizant of how to interact verbally in order to elicit maximally appropriate responses. In fact, immediately after the first data point the researcher had reservations about the dyad qualifying for inclusion in the study because of the PCG's seemingly effective language stimulation abilities.
During an informal interview after the first videotaping, the PCG reported several health and behavioral concerns about Child A. Those were: He was born with club feet and still wore corrective shoes which he had learned "to use as a weapon"; he had asthma and often needed to use a breathing machine up to four times a day; he did not like his grandmother to talk on the phone or visit with other people; and, "He can turn on a dime" emotionally. She concluded, "Today was a good day, just wait".

Results

The intervention strategies were introduced briefly at the end of the interpretation session on October 23. PCG A, the child's mother, and the researcher collaboratively decided which strategy would be targeted first. Coaching on the first intervention strategy, self & parallel talk, started before DP 4 videotaping. Figure 4-5 (page 65) is a graphic portrayal of the raw data from Table 4-1 and compares child and adult turns. DP 6 is outstanding because of its mismatch; the child took only 135 turns (31.47%) and the adult took 294 (68.53%). Session 10 presents a contrast to 6. Even though the PCG exhibited her highest number of turns, \( N = 301 \) in DP 10, the child used 263 turns, his highest frequency count. Their turn-taking behaviors appeared to move consistently and incrementally throughout the last half of the data points, 9 through 18. Data points 4 through 7 were gathered while the PCG was learning to use self & parallel talk and just before the change to questioning strategies was introduced. A dip in the data points came in DP 4 where Child A had a study low of 122 turns.

Discussion

As mentioned above, the PCG appeared to progress in her ability to match the child's conversation level. Besides the four main strategies, coaching advice included using a slower rate of speech and more wait time to give the child a chance to speak.
After the second strategy, the use of open questions was introduced, the caregiver reported she understood the concepts and showed she could identify closed questions, but had difficulty trying to use more open questions. One idea that surfaced in coaching was for her to use wait time to give the child the time he needed to reply and to give her time to think of better questions.

DP 4 data might reflect some sibling interference. The session was scheduled to start before the subject's brother came home from school. However Child A had fallen asleep in a living room chair just before the researcher arrived. The researcher and caregiver took advantage of the quiet to watch baseline tapes and go over the first strategy, but taping for session 4 had to be done with both children home. To keep interference to a minimum, all interactions were transcribed, but Coder A was instructed to ignore the older
brother's speech and all adult turns addressed to the older child.

Results

Table 4-2 presents the figures on adult and child TNW, NDW, MLU, the child's frequency and percent of verbal/nonverbal turns,

<table>
<thead>
<tr>
<th>DP</th>
<th>TTR</th>
<th>C/MLU</th>
<th>A/MLU</th>
<th>AT</th>
<th>CT</th>
<th>C/V</th>
<th>%CT</th>
<th>CT</th>
<th>C/V</th>
<th>%CT</th>
<th>C/TNW</th>
<th>A/TNW</th>
<th>C/NDW</th>
<th>A/NDW</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>.44</td>
<td>3.97</td>
<td>5.05</td>
<td>162</td>
<td>179</td>
<td>167</td>
<td>93%</td>
<td>12</td>
<td>.07%</td>
<td>761</td>
<td>800</td>
<td>160</td>
<td>204</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>.45</td>
<td>3.22</td>
<td>6.65</td>
<td>183</td>
<td>143</td>
<td>125</td>
<td>87%</td>
<td>18</td>
<td>13%</td>
<td>404</td>
<td>1135</td>
<td>116</td>
<td>226</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>.51</td>
<td>2.84</td>
<td>7.45</td>
<td>235</td>
<td>179</td>
<td>155</td>
<td>87%</td>
<td>24</td>
<td>13%</td>
<td>426</td>
<td>1621</td>
<td>136</td>
<td>275</td>
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</tr>
<tr>
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<td>.54</td>
<td>2.91</td>
<td>6.95</td>
<td>198</td>
<td>122</td>
<td>80</td>
<td>66%</td>
<td>42</td>
<td>34%</td>
<td>218</td>
<td>1289</td>
<td>96</td>
<td>215</td>
<td></td>
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<tr>
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<td>4.26</td>
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<td>177</td>
<td>132</td>
<td>75%</td>
<td>45</td>
<td>25%</td>
<td>540</td>
<td>1785</td>
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<td>238</td>
<td></td>
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<td>3.23</td>
<td>5.84</td>
<td>294</td>
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<td>66</td>
<td>49%</td>
<td>69</td>
<td>51%</td>
<td>204</td>
<td>1721</td>
<td>89</td>
<td>247</td>
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<td>7.29</td>
<td>203</td>
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<td>71%</td>
<td>45</td>
<td>29%</td>
<td>404</td>
<td>1417</td>
<td>149</td>
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<td>4.49</td>
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<td>221</td>
<td>155</td>
<td>123</td>
<td>79%</td>
<td>32</td>
<td>21%</td>
<td>562</td>
<td>1621</td>
<td>151</td>
<td>258</td>
<td></td>
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<tr>
<td>9</td>
<td>.55</td>
<td>3.50</td>
<td>6.41</td>
<td>200</td>
<td>171</td>
<td>143</td>
<td>84%</td>
<td>28</td>
<td>16%</td>
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<td>79</td>
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<td>165</td>
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<td>6.97</td>
<td>209</td>
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<td>152</td>
<td>84%</td>
<td>29</td>
<td>16%</td>
<td>428</td>
<td>1476</td>
<td>123</td>
<td>205</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>.46</td>
<td>3.71</td>
<td>6.37</td>
<td>209</td>
<td>184</td>
<td>159</td>
<td>86%</td>
<td>25</td>
<td>14%</td>
<td>562</td>
<td>1389</td>
<td>139</td>
<td>283</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>.36</td>
<td>4.46</td>
<td>7.98</td>
<td>182</td>
<td>171</td>
<td>163</td>
<td>95%</td>
<td>8</td>
<td>05%</td>
<td>685</td>
<td>1382</td>
<td>179</td>
<td>258</td>
<td></td>
</tr>
<tr>
<td>14</td>
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<td>4.54</td>
<td>7.06</td>
<td>179</td>
<td>178</td>
<td>163</td>
<td>92%</td>
<td>15</td>
<td>08%</td>
<td>607</td>
<td>1119</td>
<td>163</td>
<td>242</td>
<td></td>
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<tr>
<td>15</td>
<td>.41</td>
<td>3.87</td>
<td>9.29</td>
<td>198</td>
<td>175</td>
<td>144</td>
<td>82%</td>
<td>21</td>
<td>12%</td>
<td>571</td>
<td>1726</td>
<td>160</td>
<td>297</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>.43</td>
<td>3.84</td>
<td>8.20</td>
<td>191</td>
<td>166</td>
<td>150</td>
<td>90%</td>
<td>16</td>
<td>10%</td>
<td>534</td>
<td>1445</td>
<td>147</td>
<td>258</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>.56</td>
<td>3.84</td>
<td>8.16</td>
<td>217</td>
<td>181</td>
<td>113</td>
<td>62%</td>
<td>68</td>
<td>38%</td>
<td>411</td>
<td>1634</td>
<td>160</td>
<td>306</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>.46</td>
<td>4.03</td>
<td>6.86</td>
<td>232</td>
<td>211</td>
<td>156</td>
<td>74%</td>
<td>45</td>
<td>21%</td>
<td>620</td>
<td>1492</td>
<td>169</td>
<td>282</td>
<td></td>
</tr>
</tbody>
</table>

Legend: data point (DP); type-token ratio (TTR); child and adult MLU (C/MLU) (A/MLU); adult turns (AT); child turns (CT); child verbal and nonverbal turns (C/V) (C/NV); child verbal and nonverbal as a percent of CT (%CT); child and adult total number of words (C/TNW) (A/TNW); child and adult number of different word roots (C/NDW) (A/NDW).

...and TTR. The grandmother's dominance of turns in DP 6 is evident in the columns showing frequency and percentage of child verbal (C/V) and nonverbal (C/NV) utterances. Child A had 66 (49%) verbal utterances to 69 (51%) nonverbal gestures or vocalizations during
session 6. The second and third highest percentages of child nonverbals occurred in sessions 17 (38%) and 4 (34%). Those contrast to .07% and .05% of nonverbal usage in sessions 1 and 13.

Continuing with information from Table 4-2, Child A showed little variation in TTR. His ratio for the 18 sessions ranged from .36 to .56 (Mean = .47). In addition to the verbal/nonverbal ratio, DPs 4 and 6 mark the lowest numbers for the child in regards to quantity and variety of words used. His TNW and NDW for DP 4 were 218 and 96 respectively. On the same variables during DP 6, he had 204 and 89.

Raw data from Table 4-2 was used to prepare Figure 4-6, a graph of verbal/nonverbal child turns as a percent of total child turns over time. Nonverbals were highest in the DP 6 where Child A had 66 verbal utterances (49%) to 69 nonverbals (51%) for a V/NV ratio of .95. Data points 4, 10, and 17 respectively, were the other
times child A showed relatively high percentages of nonverbal turns (34%, 30%, and 38%).

The adult verbal dominance did not appear to affect the child's MLU as much as it had on other child dependent variables (Figure 4-7). Child A's lowest MLUs came in sessions 3 (2.84) and 4 (2.91). His MLU moved into Stage 4 (Brown, 1973) during data points 5, 8, 13, 14, and 18. He gained a total of .06 in MLU from the first to the final data points. However, when using the baseline average MLU of 3.34 as the starting point, it becomes apparent that his total increase during the study was .69.

Figure 4-7

\[ MLU \text{ in Morphemes for Child A} \]

Discussion

The significance of the conversational mismatch present in DP 6 becomes more evident after studying Table 4-2. It was during DP 6 that the child showed his highest frequency of nonverbal gestures. DP 6 was the first interactive taping done at Barkley Memorial
Center after the third baseline session. Child A was engrossed with the Fisher-Price Garage, which he had not seen before, during this session. Whenever Child A became absorbed in thought, he quietly worked his tongue in and out, up, down, and around the mouth, but did not talk much. He also spent a lot of time making car motor noises and turning the elevator crank to lower cars. Both of these actions counted as nonverbal child turns.

In the beginning of the study, the caregiver would try to compensate for the child's lack of verbal behavior by filling in the voids, using her own words and ideas. PCG A used the same pattern of introducing information that Tannock (1988) reported when studying turn-taking control and reciprocity in mothers' interactions with Down syndrome and normal children. Apparently the mothers in Tannock's study talked too much when they were uncomfortable with silence.

Tannock posited three possible reasons for that behavior, two of which relate to PCG A in the present study. Those two are: (1) the use of a faster interaction pace and long conversational turns were instrumental in maintaining the children's attention and thus, their rate of participation, (2) the mothers of Down syndrome children perceived their children to be less likely to contribute turns so they engaged in compensatory behavior (Tannock, 1988). PCG A tried to fill in the conversational "blank space" during their playtime. That habit was difficult to change. She was using the strategy which was targeted at the time, self & parallel talk, in the interactive play during DP 6. In fact, it accounted for 42% of all ATs during that session. It seemed that there were simply too many long turns being consumed by the adult, which contributed to the suppression of verbal child turns!

Results

To get an overall impression of turn frequency, the 18 data points were collapsed into six triadic groups (DPs 1-3, 4-6, 7-9,
Multiples of three were used because that was the number of baseline sessions. When the first three baseline sessions were averaged, the similarity in conversational turns apparent in DP 1 vanished. The PCG had 193 adult turns (ATs) (53\% of TT) to 179 child turns (CTs) (47\% of TT) for the child. The PCG’s turn-taking average increased to 63\% and 56\% for DPs 4-6 and 7-9, respectively. The last three sets of triadic averages, DPs 10-18, showed a tendency to return to a more balanced distribution of conversation. Child A had 47, 48 and 46 percent while the PCG had 53, 52, and 54 percent.

One indirect goal of the four research intervention strategies was balanced turn-taking and shared conversational control. However, after the first data point, PCG A took control of their play interactions and the utterance data became more disproportionate. The PCG’s TNW was more than double that of the child in the baseline average (DPs 1-3), 1,185 to 530 (Table 4-3). In the second grouping, DPs 4-6, she used nearly five times the number of words he did (1,598 to 321). From that point her totals decreased somewhat, but
her TNW was approximately three times as large as the child’s throughout the remainder of the study. That difference was not as pronounced in the NDW variable.

Discussion

The triadic averaging of the data points did show general trends. However, it masked the individuality of each taping session. Both members of the dyad were ill frequently during the study. Several sessions were cancelled or the setting moved because of health issues. The sessions varied not only with the PCG’s changing abilities, but with the dyad’s health. That was apparent when the videotapes were viewed and transcripts read (e.g., the number of times PCG A briefly left the room for coughing), but was lost in the averaging process.

With the child it was possible that medication was an issue in DP 9. He had started taking liquid Ventolin for his asthma three days before the session. The video taping was completed in acceptable fashion that day, but no coaching/teaching was done on intervention strategies because the child starting throwing toys and kicking. The trigger point might have been the grandmother asking if she could wipe his nose at the end of the taping. When Child A said "No", she wiped it anyway. Even though his temper was not directed at the researcher, she decided to leave the room.

Results

Figure 4-8 (page 72) exhibits the general upward trend in number of words used by the caregiver. DP 14 was the closest the subjects came, after the first baseline session, to a balanced distribution. Child A showed a decremental usage in TNW over the research period, a 141 word loss from DP 1 to DP 18. Possible reasons for the child's decreased lexical usage are discussed below.

Discussion

The child's beginning TNW, 761, during session 1 with its balanced turn-taking, was not reached again in the study. He ended
with 620 for TNW in DP 18. His second and third highest totals were 685 in session 13, and 697 in session 14. During session 13, PCG A had a lot of coughing spells, but the child was extremely interested in a nail board and sacks of colored rubber bands that the researcher had brought. He kept talking even when his grandmother was not physically able to respond. The researcher's log from session 13 revealed, "He really was into the verbal interaction even when (PCG A) had to leave for coughing".

Figure 4-8

The caregiver did have high use percentages for the three intervention strategies that had already been introduced by DP 13. That might have influenced the child's verbalization. She used self & parallel talk 32% of all adult turns, open questions 15%, and following the child's lead 48% during DP 13. During DP 14 Child A again was highly verbal while the PCG had a slight decrease in
TNW. When the PCG's TNW increased during the remaining DP's, Child A showed a slight decremental change that was reversed in session 18.

Results

The number of different word roots used by the two members of the dyad moved in a more similar fashion than their TNW did. A tendency emerged towards the end of the study for them to move almost concurrently (Figure 4-9). Using the averaged data from Table 4-3 (page 70), it appeared that the child gained an average of 19 points in NDW between DPs 1-3 and DPs 16-18. The averages of the baselines were 140 for the child's first set of averages and 159 in the final set. The NDW gain was 29 when the difference was based on the averaged baseline (DPs 1-3) video tapes (N = 140) and the follow-up data point, session 18 (N = 169).

Figure 4-9

Number of Different Words - Compared
For Dyad A Over Time

Discussion
Although three baseline tapes were taken to ensure stability, because of time constraints only one post-intervention videotaping, two weeks after the final coaching session, was included in the study. The researcher believed the most accurate measure of sustained change was found by comparing the initial baseline average for a variable with data from DP 18, the follow-up session.

Results

Figure 4-10 shows Child A's TTR graphed over time with the raw data as reported in Table 4-2 (page 66). Starting with a TTR of .44, he had a low of .36 in DP 13. His highest point was .56 in DP 17.

Discussion
It was interesting to note that the low .36 TTR for Child A came during DP 13 when he had his second highest MLU. His next three lowest TTRs, in DPs 8, 14, and 15, had higher MLUs (4.49, 4.54, and 3.87, respectively), higher than the 3.84 he earned in DP 17 when he showed his highest TTR. It was not apparent why the child used more limited lexical variation when he had longer utterances. All of Child A's TTR scores were figured in the SALT analysis on the first 50 complete and intelligible utterances. That was not true of Child B as will be reported in Chapter V.

Standardized Testing Results

The final language material for Child A was obtained from pre- and post-testing. Child A was 3 years 6 months at the time of the initial pre-testing, on October 14th and 19th. His receptive standard scores at that time were PPVT-R, 110 (75%ile) and PLS-3 103 (58%ile) with respective chronological age equivalents of 4.1 and 3.4 (Table 4-4, page 76). In the expressive domain of the PLS-3, he scored 81 (19%ile), while his EOWPVT-R standard score was 94 (34%ile). He qualified as expressive language delay by showing at least a 20-point spread between receptive and expressive language on the PLS-3. He also had a 13-month delay in age equivalency on the expression portion of the PLS-3. During pre-testing the child's expressive age equivalent scores were 2.5 on the PLS-3 and 3.4 on the EOWPVT-R.

Post-testing was done on Saturday, January 15, 1994 starting at mid-morning with lunch and a play break between the second and third tests. The child's mother and grandmother preferred making only one trip to the Barkley Memorial Center clinic for testing. Child A was 3 years 9 months at the time.

Child A's post PPVT-R standard score of 112 (78%ile) reflected a 3 month receptive vocabulary gain. On the PLS-3 his final Auditory Comprehension (receptive) standard score was 108 (70%ile) with an
age equivalency of 4.2. His Expressive Communication standard score was 85 (16\textsuperscript{th}ile), age equivalent 3.0. These scores showed a 10 month receptive and 7 month expressive gain during the three month time frame. Child A's final standard score on the EOWPVT-R, was 101 (53\textsuperscript{th}ile) with an age equivalency gain of 6 months.

Table 4-4: CHILD A PRE- AND POST-TESTING SCORES

<table>
<thead>
<tr>
<th>CHILD A: PRE-TESTING</th>
<th>POST-TESTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPVT-R</td>
<td>PPVT-R</td>
</tr>
<tr>
<td>Standard Score</td>
<td>Standard Score</td>
</tr>
<tr>
<td>110, 75\textsuperscript{th}ile,</td>
<td>112, 78\textsuperscript{th}ile,</td>
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<tr>
<td>Age Equivalent</td>
<td>Age Equivalent</td>
</tr>
<tr>
<td>4 years 1 month</td>
<td>4 years 4 months</td>
</tr>
<tr>
<td>PLS-3</td>
<td>PLS-3</td>
</tr>
<tr>
<td>Receptive Standard Score</td>
<td>Receptive Standard Score</td>
</tr>
<tr>
<td>103, 58\textsuperscript{th}ile,</td>
<td>108, 70\textsuperscript{th}ile,</td>
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<tr>
<td>Age Equivalent</td>
<td>Age Equivalent</td>
</tr>
<tr>
<td>3 years 4 months</td>
<td>4 years 2 months</td>
</tr>
<tr>
<td>Expressive Standard Score</td>
<td>Expressive Standard Score</td>
</tr>
<tr>
<td>81, 19\textsuperscript{th}ile,</td>
<td>85, 16\textsuperscript{th}ile,</td>
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<td>Age Equivalent</td>
</tr>
<tr>
<td>2 years 5 months</td>
<td>3 years 0 months</td>
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<tr>
<td>91, 27\textsuperscript{th}ile</td>
<td>96, 39\textsuperscript{th}ile</td>
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<tr>
<td>Age Equivalent</td>
<td>Age Equivalent</td>
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<tr>
<td>3 years 1 month</td>
<td>3 years 6 months</td>
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<tr>
<td>EOWPVT-R</td>
<td>EOWPVT-R</td>
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<td>Standard Score</td>
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<tr>
<td>Age Equivalent</td>
<td>Age Equivalent</td>
</tr>
<tr>
<td>3 years 4 months</td>
<td>3 years 10 months</td>
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Variables Specific to Primary Caregiver A

Results

Primary Caregiver A's first interactive play session showed many factors positive to fostering the growth and development of child language. During DP 1 she spontaneously used 37.04\% of all adult turns on one of the designated dependent variables, following the child's lead (FCL) (Table 4-5, page 78). Other usage percents were: self & parallel talk (SPT), 4.94\%; open questions (OQ), 11.73\%; and expansions & extensions (E/ET), 3.70\%. Her use of the strategies in the follow-up session 18 were FCL, 51.93\%; SPT, 37.34\%; OQ, 4.29\%; and E/ET, 9.87\%.

Table 4-5 shows the frequency and percent of use over total
adult turns per data point for each strategy. They are discussed in the order they were taught, and are treated as a unit in the discussion following the graphic illustrations of their use over time. To aid the reader double lines have been placed in each strategy's column to indicate when that strategy was initially introduced. PCG A showed her first increase in SPT during DP 4 after she viewed a video on its use. However, the biggest jump in its use came between DPs 4 and 5, just after the strategy had been demonstrated in a coaching session with the child present. The use of OQ was discussed at the end of DP 6, although no teaching or demonstration was done until the 7th session. Its use peaked with 15.67% in session 15.

PCG A's use of FCL was strong at the beginning of the study, dropped at times when other strategies were targeted, and finished with its highest percent, (51.93%) during DP 18. FCL was introduced at the end of session 10. Expansions & extensions was targeted after taping in DP 13. Previous to that point, the caregiver's use of E/ET had remained below a 5% use figure.

Discussion

The researcher found the data presentation in Table 4-5 useful, particularly after marking the introduction point of each strategy in color. All intervention strategies were introduced after the data point videotaping with the exception of SPT in session 4. That was the session where Child A fell asleep in a chair. The PCG and researcher used the time to review baseline tapes and then viewed and discussed "Oh Say What They See: An Introduction to Indirect Language Stimulation Techniques" (Weybright (1985)).
<table>
<thead>
<tr>
<th>DP</th>
<th>AT</th>
<th>SPT</th>
<th>SPT%AT</th>
<th>OQ</th>
<th>OQ%AT</th>
<th>FCL</th>
<th>FCL%AT</th>
<th>E/ET</th>
<th>E/ET%AT</th>
<th>CQ</th>
<th>CQ%AT</th>
<th>TQ</th>
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<td>23</td>
<td>9.87%</td>
<td>26</td>
<td>11.16%</td>
<td>36</td>
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</tbody>
</table>

Legend: data point (DP); adult turn (AT); self & parallel talk (SPT); SPT as a percent of AT (SPT%AT); open questions (OQ); OQ as a percent of AT (OQ%AT); following the child's lead (FCL); FCL as a percent of AT (FCL%AT); expansions & extensions (E/ET); E/ET as a percent of AT (E/ET%AT); closed questions (CQ); CQ as a percent of AT (CQ%AT); and total questions (TQ).
The four main caregiver dependent variables are presented in a different form in Table 4-6. An average of the three baseline data points (1-3) was figured and contrasted with an average of the final three data points (16 and 17 from the intervention phase of the study, and 18 from the follow-up session).

Table 4-6: AVERAGES OF FOUR INTERVENTION STRATEGIES
DURING FIRST AND LAST THREE DATA POINTS

<table>
<thead>
<tr>
<th>DP</th>
<th>SPT%AT</th>
<th>AVE.</th>
<th>FCL%AT</th>
<th>AVE.</th>
<th>E/ET%AT</th>
<th>AVE.</th>
<th>OQ%AT</th>
<th>AVE.</th>
<th>CQ%AT</th>
<th>AVE.</th>
</tr>
</thead>
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<td>4.94%</td>
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<td>3.70%</td>
<td>11.73%</td>
<td>42.59%</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>3.83%</td>
<td>34.97%</td>
<td>0.55%</td>
<td>19.67%</td>
<td>30.60%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3.40%</td>
<td>26.30%</td>
<td>0.65%</td>
<td>11.91%</td>
<td>30.21%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.17%</td>
<td>4.06%</td>
<td>98.39%</td>
<td>32.80%</td>
<td>5.10%</td>
<td>1.70%</td>
<td>43.32%</td>
<td>14.44%</td>
<td>103.41%</td>
<td>34.47%</td>
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<tr>
<td>16</td>
<td>36.65%</td>
<td>45.55%</td>
<td>12.04%</td>
<td>14.14%</td>
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<td>107.63%</td>
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<td>26.26%</td>
<td>8.75%</td>
<td>46.32%</td>
<td>15.44%</td>
</tr>
</tbody>
</table>

Legend: data point (DP); self & parallel talk as a percent of AT (SPT\%AT); following the child's lead as a percent of AT (FCL\%AT); expansions & extensions as a percent of AT (E/ET\%AT); open questions as a percent of AT (OQ\%AT); AVE.; closed questions as a percent of AT (CQ\%AT). Each variable (and in the case of OQ, its reciprocal) is totaled over three data points and then averaged in the following column.

PCG A's use of self & parallel talk is graphed in Figure 4-11 (page 80). The rapid change from 12.12\% to 48.32\% occurred just after SPT was introduced. After the first growth spurt, her use of SPT leveled off to the mid thirty percent range except for a dip in the data line at DP 14. PCG A increased her use of SPT by 31.84\%, the difference between the starting (4.06\%) and final averages (35.88\%) during the study according to data from Table 4-6.
Consultative coaching started on the second strategy, open questions, at the end of session 7. The caregiver's highest use of open questions (19.67%) came during DP 2 in baseline (Figure 4-12, page 81). Her intervention phase peak was 16.67% during DP 15. PCG A's initial use of OQ (11.73%) fell to (4.29%) in the final taping. Looking at the three-point averages, PCG A started open questions with an average of 14.44%. She ended at 8.75%, a 5.69% decline.

Following the child's lead was the third intervention strategy targeted (Figure 4-13) From a high average start (32.80%), Caregiver A slipped downward to DP 6 and a low of 5.78%. The data line started ascending again, and hit highs at DPs 11 and 12 with 50.24% and 51.67% respectively. DP 18, in follow-up, was the overall highest with 51.93%. The final three-point average was 48.32% for a net gain of 15.52% during the study.
Figure 4-12

Open Questions
Dyad A Adult Turns

Figure 4-13

Following the Child's Lead
Dyad A Adult Turns
The fourth and final strategy, expansions & extensions, was introduced at the end of DP 13. The strategy immediately peaked in DP 14 with 12.29% (Figure 4-14). The only other two-digit percentages for E/ET were 12.04% at DP 16 and 10.14% at DP 17. The caregiver's final average in the follow-up session (DP 18) was 10.68%, showing a 8.98% gain over the initial 1.70%.

Figure 4-14

![Expansions and Extensions](image)

Discussion

In reviewing the principal adult dependent variables, there was notable change in usage on three of the four strategies. Examining the first three and last three data points presented in Table 4-6, page 79, it can be seen that the use of self & parallel talk increased 31.84%, from 4.06% to 35.88%; following the child's lead increased 15.52%, from 32.80% to 48.32%; and expansions &
extensions increased 8.98%, from 1.70% to 10.68%. The use of open questions dropped 5.69%, from 14.44% to 8.75%.

Results

The data discussed above is presented in bar graphs in Figure 4-15. In each case the intervention strategy is presented as a percent of the total adult turns taken in the initial and final three data point averages. The average of DPs 1-3 appear on the left of the figure and the average of DPs 16-18 appear on the right. The strategies are shown in the order they were targeted.

Figure 4-15

CHAPTER SUMMARY DISCUSSION

The results from Dyad A above are used to reply to the research questions found at the beginning of this chapter. First, "Does the use of a consultative coaching model with a primary
caregiver of a language delayed preschool child result in measurable change in aspects of the PCG's communicative behaviors when interacting with the child? To a varying degree, the answer is "Yes" to the first question, with the exception of the strategy on open questions.

PCG A had so much difficulty in using open questions that she limited her overall use of questioning. She realized that she was asking too many questions, particularly the kind that limited the child's ability to respond, after watching DP 3 with the coach/researcher. It appeared that she unconsciously switched to using the other strategies she had been taught. She understood the theory and concept behind open questions, but had a lifetime of experience in the use of "tag question" (e.g. That's a big house, isn't it?). The frequency of closed and open questions across the data points is presented as a stacked bar graph in Figure 4-16.

Figure 4-16

Frequency of Closed and Open Questions
Dyad A Adult Turns
Throughout the study PCG A's total questions (TQ) dropped from a 96 baseline average for a 20-minute play session to 36. That caused a significant change in the OQ/CQ ratio. She started the study with an OQ/CQ ratio of .42 ratio (14.44/34.47) and ended with .56 (8.75/15.44) when the baseline average was compared to the average of DPs 16, 17, and 18.

The second question asked was, "Do the expected and improved communicative abilities of a PCG result in measurable changes in the child's communicative competence during the study"? Child A definitely showed measurable growth in mean length of utterance in morphemes and the number of different word roots, as well as in the post-testing standardized measures administered. Child A's MLU increased from the baseline average of 3.34 to 4.03 (Tables 4-2 and 4-3). His NDW increased by 19, from the baseline average of 140 to 169. When comparing TNW in the same manner by using the baseline average of 530 and DP 18's 620, the child also showed an increase in the total number of words used. Question two is answered affirmatively.

The third research question: Are the improved reciprocal interactions stabilized and maintained after the consultative coaching has been completed? This is critical to the clinical applications of this study. Because of time constraints a single follow-up videotaping was done two weeks after the final coaching session. Therefore to answer the third question, the initial baseline averages were compared to DP 18, the only follow-up session.

**Dependent Variables**

PCG A's use of self & parallel talk increased 33.28%, open questions decreased 10.15%, following the child's lead increased 19.88% and expansions & extensions increased 8.17% from the baseline average to follow-up (using data from Tables 4-5 and 4-5). The use
of closed questions decreased by 23.31% which changed the ratio of open to closed questions from .41 (14.44/34.47) to .38 (4.29/11.16). In the same time period, Child A's ratio of verbal to nonverbal turns decreased from a ratio of 8.09 to 3.52. The TTR for Child A went from .47 to .46. Examination of the shared dependent variables for Dyad A revealed the child's mean length of utterance in morphemes increased .59 while the PCG's decreased .48. These data reflected the fact that the child was talking more while the adult talked less.

Thus, in the areas where a positive trend in the use of an intervention strategies was established during intervention with PCG A, the trend continued into the follow-up data. The shared variable of MLU also showed a favorable pattern with the child's MLU rising and the PCG's decreasing. In other words, the PCG continued interacting with the child in a manner suitable to his communication ability for the majority of the dependent variables two-weeks after the intervention portion of the study was completed.

Child A's total number of words per session increased by 90 and his PCG's increased by 307. For the number of different word roots, Child A's NDW increased by 29 while PCG A's increased by 37. The turn taking ratio between the child and the PCG for Dyad A changed (when rounded to the nearest hundredth) from .85 to .92 (46/54 to 48/52).

In the three baseline sessions, Child A had an average TNW of 530 and PCG A had an average of 1185, making the difference between them 655 words. During DA 18, the caregiver had 1,492 words and the child 620, for a difference of 872. Thus the caregiver increased the total number of words she used by 117, but the utterances were shorter and more appropriate to the cultivation of child verbal responses.

The PCG had a NDW's average of 235 in baseline (DPS 1-3) and
the child's average was 140 for a difference of 95. In the final data point the caregiver had 262 different word roots and the child 169, a difference of 113. The results of both variables TNW and NDW, are not favorable verbal behaviors for a primary caregiver to use to facilitate child language development. It appeared that PCG A was using the targeted strategies, but continued to dominate conversation in the quantity and quality (variety) of lexical variables. She continued to have difficulty reducing her verbalizations and adapting to the child's speaking level within the time constraints of this study in these two areas.
CHAPTER V

Results/Discussion Dyad B

Chapter V contains the results and related discussion for data secured from Primary Caregiver B and Child B which enabled the researcher to answer the following research questions: (1) Does the use of a consultative coaching model with a primary caregiver (PCG) of a language delayed preschool child result in measurable change to selected aspects of the PCG's communicative behaviors when interacting with the child? (2) Do the expected and improved communicative abilities of a PCG result in measurable changes in the child's communicative competence during the period of the study? (3) Are the improved reciprocal interactions stabilized and maintained after the consultative coaching has been completed?

Dyad B's interactions were observed during the second single subject study. Following the format of Chapter IV, two sets of graphs showing the study's most relevant results about the dyadic interactions will be presented first. Figures 5-1 and 5-3, pages 89 and 90, are duplicates. The information was printed twice to enable the reader to compare it to different variables for Child B. The vertical lines in each figure represent the point at which a strategy was introduced. The abbreviation of the strategy is indicated at the top of the figure. The abbreviations used were self & parallel talk (SPT), open questions (OQ), following the child's lead (FCL), and expansions & extensions (E/ET). Details pertaining to Figures 5-1 through 5-4 are discussed throughout the chapter.

The background information about Dyad B, results pertaining to each dependent variable, and a discussion of those results begin on page 91. This format was used to give the reader immediate access to the reference figures and tables that correspond to the results and discussion. Tables and figures are included throughout the chapter to aid the reader's interpretation of the raw data.
Figures 5-1 and 5-2  DYAD B GRAPHS OF PRINCIPAL RESULTS

Change in Targeted Strategies for PCG B

Change in TNW and NDW for Child B
Figures 5-3 and 5-4

Change in Targeted Strategies for PCG B

Graphed Over Time

Mean Length of Utterance for Child B

Graphed Over Time
INTRODUCTION TO DYAD B

Dyad B consisted of a 41-month old male and his mother. They were recommended for the study in late November, 1993, by an ESU 4 speech-language pathologist. The speech-language pathologist had been serving the child for two months. He was receiving two half-hour individual speech therapy sessions per week when he was recommended and continued to receive treatment during the duration of the study. Child B had originally been referred for speech-language testing by his pediatrician, who reported no apparent physiological or emotional reasons for his delayed language development.

When he was initially tested by an ESU 4 speech-language pathologist in October of 1992, the 27-month-old child showed normal receptive language, but a mild expressive delay. He did not qualify for services under Nebraska Rule 51 because he was not 2.0 standard deviations below the mean. He was retested on April 30, 1993 and qualified for services then because of "delayed expressive language". His summary assessment at that time reported a two year discrepancy between receptive and expressive age, and a wide range in ability between semantics (high) and syntax (low).

The second dyadic family lived on an acreage in rural Nebraska. The subject was the second of two children. His older sister, almost five years old, exhibited age-appropriate speech. Both parents were employed, the father as a welder and the mother as a paralegal. The two children spend six to eight hours a day with a child care provider in Lincoln. They were taken into town when the mother goes to work and picked up by the father. The mother was the primary caregiver, but the father sat in on as much of the coaching as he could. The dyad came to the Barkley Memorial Center a total of five times which included all standardized testing sessions.
DYAD B

Results

Baseline videotaping with Dyad B was done in three sessions from December 4th to 9th, 1993. At the beginning the child used mainly monosyllable utterances and was extremely unintelligible (estimated at 10%-15% to a naive listener by two experienced speech-language pathologists, Transcriber B and Coder C, who reviewed his tapes). Even the parents had difficulty understanding much of what the child said. According to parent report, the mother was better at interpreting the child's speech.

Child B's major phonological deficit was the deletion of the initial consonants which made words like too, blue, moo, and even school, sound the same. Most words and phrases were very difficult to understand. At first impression, Child B appeared to have good receptive skills and a relatively long attention span.

Baseline Taping

During the initial baseline taping the mother choose to read to the child throughout most of the session, but Child B encouraged the activity by picking two more books from the researcher's toy tub when the mother finished two of their books. PCG B did not try to engage Child B in the reading (or telling) of the first two stories even though they were favorites of his.

For the first 20-minute session PCG B used 1,579 words in 130 adult turns (AT) as compared to 94 words for the child in 103 child turns (CT) (Table 5-2, page 98). As can be seen from the word count, merely counting turns in the first data point did not present the full picture. Table 5-1 (page 93) shows turn-taking frequency and percentages for the 18 data points. As in Chapter IV, total turns (TT) was calculated by adding the adult turns (AT) and child turns (CT) for each session. Next, each AT and CT was divided by that data point's TT, to secure the percentages listed.
Table 5-1: DYAD B - TURN FREQUENCY AND PERCENTAGE

<table>
<thead>
<tr>
<th></th>
<th>DP</th>
<th>AT</th>
<th>CT</th>
<th>TT</th>
<th>ATTT</th>
<th>CTT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>130</td>
<td>103</td>
<td>233</td>
<td></td>
<td>55.79%</td>
<td>44.21%</td>
</tr>
<tr>
<td>2</td>
<td>243</td>
<td>215</td>
<td>458</td>
<td></td>
<td>53.06%</td>
<td>46.94%</td>
</tr>
<tr>
<td>3</td>
<td>219</td>
<td>189</td>
<td>408</td>
<td></td>
<td>53.68%</td>
<td>46.32%</td>
</tr>
<tr>
<td>4</td>
<td>138</td>
<td>81</td>
<td>219</td>
<td></td>
<td>63.01%</td>
<td>36.99%</td>
</tr>
<tr>
<td>5</td>
<td>232</td>
<td>176</td>
<td>408</td>
<td></td>
<td>56.86%</td>
<td>43.14%</td>
</tr>
<tr>
<td>6</td>
<td>206</td>
<td>175</td>
<td>381</td>
<td></td>
<td>54.07%</td>
<td>45.93%</td>
</tr>
<tr>
<td>7</td>
<td>215</td>
<td>176</td>
<td>391</td>
<td></td>
<td>54.99%</td>
<td>45.01%</td>
</tr>
<tr>
<td>8</td>
<td>132</td>
<td>150</td>
<td>282</td>
<td></td>
<td>46.81%</td>
<td>53.19%</td>
</tr>
<tr>
<td>9</td>
<td>162</td>
<td>166</td>
<td>328</td>
<td></td>
<td>49.39%</td>
<td>50.61%</td>
</tr>
<tr>
<td>10</td>
<td>148</td>
<td>133</td>
<td>281</td>
<td></td>
<td>52.67%</td>
<td>47.33%</td>
</tr>
<tr>
<td>11</td>
<td>166</td>
<td>156</td>
<td>322</td>
<td></td>
<td>51.55%</td>
<td>48.45%</td>
</tr>
<tr>
<td>12</td>
<td>158</td>
<td>159</td>
<td>317</td>
<td></td>
<td>49.84%</td>
<td>50.16%</td>
</tr>
<tr>
<td>13</td>
<td>180</td>
<td>164</td>
<td>344</td>
<td></td>
<td>52.33%</td>
<td>47.67%</td>
</tr>
<tr>
<td>14</td>
<td>156</td>
<td>142</td>
<td>298</td>
<td></td>
<td>52.35%</td>
<td>47.65%</td>
</tr>
<tr>
<td>15</td>
<td>211</td>
<td>217</td>
<td>428</td>
<td></td>
<td>49.30%</td>
<td>50.70%</td>
</tr>
<tr>
<td>16</td>
<td>200</td>
<td>198</td>
<td>398</td>
<td></td>
<td>50.25%</td>
<td>49.75%</td>
</tr>
<tr>
<td>17</td>
<td>153</td>
<td>139</td>
<td>292</td>
<td></td>
<td>52.40%</td>
<td>47.60%</td>
</tr>
<tr>
<td>18</td>
<td>205</td>
<td>191</td>
<td>396</td>
<td></td>
<td>51.77%</td>
<td>48.23%</td>
</tr>
</tbody>
</table>

Legend: data Points (DP); adult turns (AT); child turns (CT); adult percent of total turns (ATTT); and child percent of total turns (CTT).

Discussion

After the baseline videotaping and child evaluation, an interpretation meeting was held at the family home on December 28, 1993. The child's standardized tests were reviewed along with a brief educational presentation on the four intervention strategies. It was explained that the sequence of coaching used with the first dyad would be followed, but the time spent on each area could vary.

Both parents and the older sibling watched parts of the videotapes from the first three sessions to assist the researcher interpret the child's verbalizations. The researcher then played
with the two children while the parents watched the videotape on the use of self and parallel talk (Weybright (1985). A short time was devoted to demonstrating the strategy with the children and having each parent use it.

**Turn Dominance Results**

Throughout the three baseline data points (Table 5-1), the PCG was dominant in both frequency and percentage of total turns taken. She increased her total turns from 130, to 243, and then dropped to 219 from the first to third baseline sessions, while the child had 103, 215, and 189 turns for the same time periods. DP 2, during which the mother took her highest number of turns (243) in any of the 20-minute sessions during the study, also showed the highest number of total turns (458). The second highest number of total turns (428) occurred during DP 15 when the child had a study high of 217 CTs compared to 211 ATs for the mother.

The PCG showed the most dominance in the fourth data point when she took 63.01% of TT as compared to 36.99% for the child, but it should be noted that DP 4 registered the lowest number of total turns in the entire study. Looking at the 14 intervention-phase sessions, Child B took larger percentages of turns than the mother during DPs 8, 9, 12, and 15. His highest percentage came in DP 8 when he had 53.19% of TT as compared to her 46.81%.

Although PCG B used 55.79% (N = 130) of the turns during DP 1 and the child used 44.21% (N = 103), the caregiver talked much more than the frequency and percentage of turns indicated. She used greater variety in her lexicon and spoke in much longer utterances than the child. The conversational mismatch was indicated by the total number of words (TNW), number of different words (NDW), and mean length of utterance (MLU). Her TNW in the first session was 1,579 words to 94 for him, she had a NDW of 420 to 34 for the child, and her MLU was 8.44 while his was 1.65 (Table 5-2 on page 98).
Discussion

Part of the adult dominance in DP 1 could have been caused by the choice of reading books for the activity, and the caregiver not encouraging the child to contribute more. Another factor in the child's lack of interaction may have been his health. He had been ill for two days previous to the first data point. In fact, the mother almost cancelled the session, but decided late in the day that he had improved enough for the researcher to come to the house. In a later session, techniques to bring the child into shared reading times were discussed and demonstrated.

Results

Figure 5-5 (page 96) compares child and adult turns using the frequency data from Table 5-1. The graph lines were closely related except during DPs 5, 6, and 7. The change after the eighth session was noteworthy. Adult turns dropped below CT during DPs 8, 9, 12, and 15, and stayed just slightly above CT during DPs 10, 11, 13, 14, 17, and 18. During DP 16, the frequency of turns were almost equal. Using both the Table 5-1 and Figure 5-5, it was interesting to note the similarity in the number of turns taken during each session by both members of the dyad.

After the high of 215 child turns in the second data point, he dropped to 81 in the fourth session. Then he started to increase his turn frequency, although the output was uneven. His highest point was 217 in DP 15, but he also showed highs of 198 and 191 in DPs 16 and 18. PCG B's turns were highest (N = 243) during DP 2 in baseline and DP 5 (N = 232).

Discussion

As the study progressed, the caregiver became more adept at balancing her turns to the child's. The most interesting feature of Figure 5-5 is how the two members' data mirror each other with the exception of DPs 6 and 12. As shown above, Child B had the larger
number of turns in four data points. Data from the fourth session, which was taped after minimal coaching on SPT had begun, showed PCG B had learned the first intervention strategy (Raw data was taken from Table 5-5, page 109). According to the researcher's coaching notes, PCG B appeared to learn the theory behind self and parallel talk (SPT) "very quickly". She used parallel talk extensively after the initial coaching, but it took extra demonstration and urging for her to use self talk. PCG B seemed to have a quiet personality, and commented that it was not natural for her to talk about herself. When told it would give the child models and ideas for his future speech, she worked to incorporate more self talk.

Results

Table 5-2 (page 98) presents figures on the child's frequency and percent of verbal/nonverbal turns; his type token ratio (TTR);
and three joint variables for both subjects, TNW, NDW, and MLU. The child's lowest MLU, 1.57, which falls in Brown's Late I Stage, (Brown, 1973) came in DP 3. That was the first videotaped interaction done at Barkley. His highest MLU (2.30) occurred in DP 17. Other times when the child reached Brown's Stage II were DPs 8 (2.28); 12 (2.24); and 15 (2.19). The PCG started high, 8.44 (Brown's Post V Stage) during DP 1 when she was reading to the child, and ended with a MLU of 5.36 during the last videotaping (DP 18). She managed to get three data points below 5.0—which moved her into Late Stage V—in DPs 9, 10 and 11, as she tried to match her level of speech to the child's.

Three clarifying details regarding MLU are necessary at this point: (1) MLU was used as a variable across dyadic members in order to ascertain if a communication mismatch existed, (2) utterances of both dyadic members were coded for morphemes before the SALT1 analyses were run, and (3) Child B was extremely unintelligible, but glossing was used when the transcriber believed the true meaning of the words were evident. On many occasions, the PCG B's reply or indirect correction helped the transcriber "hear" the child's word.

Discussion

The decremental changes in the mother's MLU also can be observed in adult TNW and NDW (Table 5-2). Her TNW hit a study low of 570, more than 1,000 words less than DP 1, during the eighth taping. In contrast Child B's total number of words increased in a slow, albeit unsteady, fashion. DPs 12, 15, and 16 with 301, 425, and 321 words respectively, were highs after his baseline peak of 323 words in DP 2.

The change in NDW was more abrupt. From the first session high of 420 different word roots, the PCG dropped to 175 during the fourth data point. Her lowest NDW was in session 10. The child's NDW varied, but seemed to evidence a general increasing trend. His range
Table 5-2: DYAD B VARIABLES - DATA POINTS 1-18

<table>
<thead>
<tr>
<th>DP</th>
<th>TTR</th>
<th>C/MLU</th>
<th>A/MLU</th>
<th>AT</th>
<th>CT</th>
<th>C/V</th>
<th>%CT</th>
<th>C/NV</th>
<th>%CT</th>
<th>C/TNW</th>
<th>A/TNW</th>
<th>C/NDW</th>
<th>A/NOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.60</td>
<td>1.65</td>
<td>8.44</td>
<td>130</td>
<td>103</td>
<td>54</td>
<td>52%</td>
<td>49</td>
<td>48%</td>
<td>94</td>
<td>1579</td>
<td>34</td>
<td>420</td>
</tr>
<tr>
<td>2</td>
<td>.54</td>
<td>1.61</td>
<td>5.88</td>
<td>243</td>
<td>215</td>
<td>202</td>
<td>94%</td>
<td>5</td>
<td>3%</td>
<td>323</td>
<td>1386</td>
<td>72</td>
<td>285</td>
</tr>
<tr>
<td>3</td>
<td>.45</td>
<td>1.57</td>
<td>5.35</td>
<td>219</td>
<td>189</td>
<td>167</td>
<td>88%</td>
<td>22</td>
<td>12%</td>
<td>264</td>
<td>1113</td>
<td>59</td>
<td>236</td>
</tr>
<tr>
<td>4</td>
<td>.48</td>
<td>1.74</td>
<td>6.46</td>
<td>138</td>
<td>81</td>
<td>69</td>
<td>85%</td>
<td>12</td>
<td>15%</td>
<td>121</td>
<td>863</td>
<td>37</td>
<td>175</td>
</tr>
<tr>
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<td>.52</td>
<td>1.80</td>
<td>5.12</td>
<td>232</td>
<td>176</td>
<td>138</td>
<td>78%</td>
<td>38</td>
<td>22%</td>
<td>251</td>
<td>1093</td>
<td>74</td>
<td>198</td>
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<td>.49</td>
<td>1.99</td>
<td>5.04</td>
<td>206</td>
<td>175</td>
<td>145</td>
<td>83%</td>
<td>30</td>
<td>17%</td>
<td>283</td>
<td>951</td>
<td>59</td>
<td>235</td>
</tr>
<tr>
<td>7</td>
<td>.52</td>
<td>1.79</td>
<td>5.47</td>
<td>215</td>
<td>176</td>
<td>134</td>
<td>76%</td>
<td>42</td>
<td>24%</td>
<td>241</td>
<td>1103</td>
<td>74</td>
<td>234</td>
</tr>
<tr>
<td>8</td>
<td>.45</td>
<td>2.28</td>
<td>5.07</td>
<td>132</td>
<td>150</td>
<td>119</td>
<td>79%</td>
<td>31</td>
<td>21%</td>
<td>262</td>
<td>570</td>
<td>76</td>
<td>176</td>
</tr>
<tr>
<td>9</td>
<td>.53</td>
<td>1.77</td>
<td>4.66</td>
<td>162</td>
<td>166</td>
<td>132</td>
<td>80%</td>
<td>48</td>
<td>26%</td>
<td>152</td>
<td>596</td>
<td>49</td>
<td>171</td>
</tr>
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<td>10</td>
<td>.45</td>
<td>1.78</td>
<td>4.48</td>
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<td>133</td>
<td>85</td>
<td>64%</td>
<td>48</td>
<td>36%</td>
<td>152</td>
<td>596</td>
<td>49</td>
<td>171</td>
</tr>
<tr>
<td>11</td>
<td>.49</td>
<td>1.80</td>
<td>4.50</td>
<td>166</td>
<td>156</td>
<td>123</td>
<td>79%</td>
<td>33</td>
<td>21%</td>
<td>220</td>
<td>659</td>
<td>79</td>
<td>197</td>
</tr>
<tr>
<td>12</td>
<td>.49</td>
<td>2.24</td>
<td>5.01</td>
<td>158</td>
<td>159</td>
<td>138</td>
<td>87%</td>
<td>21</td>
<td>13%</td>
<td>301</td>
<td>692</td>
<td>101</td>
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</tr>
<tr>
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<td>.59</td>
<td>1.78</td>
<td>5.37</td>
<td>180</td>
<td>164</td>
<td>127</td>
<td>77%</td>
<td>37</td>
<td>23%</td>
<td>229</td>
<td>860</td>
<td>96</td>
<td>232</td>
</tr>
<tr>
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<td>.54</td>
<td>1.91</td>
<td>5.03</td>
<td>156</td>
<td>142</td>
<td>88</td>
<td>62%</td>
<td>54</td>
<td>38%</td>
<td>172</td>
<td>692</td>
<td>74</td>
<td>204</td>
</tr>
<tr>
<td>15</td>
<td>.57</td>
<td>2.19</td>
<td>5.32</td>
<td>211</td>
<td>217</td>
<td>203</td>
<td>94%</td>
<td>14</td>
<td>6%</td>
<td>425</td>
<td>1001</td>
<td>120</td>
<td>229</td>
</tr>
<tr>
<td>16</td>
<td>.44</td>
<td>1.94</td>
<td>5.47</td>
<td>200</td>
<td>198</td>
<td>170</td>
<td>86%</td>
<td>28</td>
<td>14%</td>
<td>321</td>
<td>950</td>
<td>93</td>
<td>242</td>
</tr>
<tr>
<td>17</td>
<td>.42</td>
<td>2.30</td>
<td>6.05</td>
<td>153</td>
<td>139</td>
<td>100</td>
<td>72%</td>
<td>39</td>
<td>28%</td>
<td>224</td>
<td>828</td>
<td>75</td>
<td>187</td>
</tr>
<tr>
<td>18</td>
<td>.54</td>
<td>1.85</td>
<td>5.36</td>
<td>205</td>
<td>191</td>
<td>153</td>
<td>80%</td>
<td>38</td>
<td>20%</td>
<td>295</td>
<td>971</td>
<td>101</td>
<td>220</td>
</tr>
</tbody>
</table>

Legend: data point (DP); type-token ratio (TTR); child and adult MLU (C/MLU) (A/MLU); adult turns (AT); child turns (CT); child verbal and nonverbal turns (C/V) (C/NV); child verbal and nonverbal as a percent of CT (%CT); child and adult total number of words (C/TNW) (A/TNW); child and adult number of different word roots (C/NDW) (A/NOW).

went from 34 in the first session to 101 during DPs 12 and 18 and 120 in DP 15.

The effect of the PCG's ability to bring her amount of speaking down, noted in the adult MLU, TNW, and NDW columns of Table 5-2, had positive effects on the child's verbal output. From DP 11 to DP 18 Child B only had one TNW frequency below 220. Also, he showed his two highest NDWs, and three of his four highest MLUs during the latter half of the study.
Results

Child B's TTR started high (.60 in DP 1) and then ranged between .44 and .59 for the duration of the study. Raw Data from Table 5-2 was used to prepare Figure 5-6, a graph of verbal/nonverbal child turns as a percent of total child turns over time. Child B showed his closest verbal/nonverbal ratio at the beginning of the study (DP 1) when he had 52% verbal turns and 48% nonverbal. There were two verbal usage highs, each with 94% in DPs 2 and 15. His two highest verbal percentages coincided with the highest number of CTs, 202 and 203. During the final eight sessions, he averaged 79% verbal turns to 21% nonverbal.

Figure 5-6

Verbal and Nonverbal Child Turns
For Child B Over Time

Discussion

The gradual incremental shift towards more verbal child turns, and the corresponding decremental shift towards fewer nonverbal
vocalizations or gestures, reflected the child's growing tendency to become a more competent conversational partner. MacDonald (1985) defined communication in terms of its effect on others when he said that communication is a "function of dyadic feedback". Therefore, every child/caregiver dyad represents a "reciprocal feedback loop in which the behavior of each person affects and is affected by the behavior of the other person" (MacDonald, 1985 p. 94). He suggested establishment of joint activity and/or conversation as a critical goal of training. It appeared that PCG B's ability to reduce verbal output and employ the target strategies encouraged the child to use more verbalization while taking a larger percentage of conversational turns.

Results

Figure 5-7 shows an incremental slope in the child's overall MLU which started at 1.65 (DP 1) and ended at 1.85 (DP 18). Both fall in Brown's Late Stage I (Brown, 1973). Child B's lowest point 1.57 came in DP 3, and his highest, 2.30, was in DP 17. He first broke into Stage 2 in session 8 with 2.28. Other highs were 2.24 (DP 12) and 2.19 (DP 15).

Discussion

Three of the child's highest MLUs, 2.28 in session 8, 2.24 in session 12, and 2.19 in session 15, came during data points where the child had a higher frequency of turns than the caregiver. In addition, the mother had been exposed to using more comments and open questions in two sessions before DP 8. By DP 15, she had practiced all the intervention strategies at least once. It is likely that the PCG's usage of the intervention strategies were yielding desired results.

In two-thirds of the above sessions, DPs 8 and 12, the Sesame Street Farm was the toy stimulus he chose. The barn was a high interest item for Child B. Although he tended to vocalize a lot of
animal sounds when playing with it, he also used longer verbalizations. Recall that according to the Working Definitions for this study (Appendix G) a vocalization included the child's production of sounds and sound combinations that were not true word attempts, and a verbalization included the child's expression of true words or word approximations (Rossetti, 1990).

Results

Material from the 18 data points was collapsed into six triadic groups (DPs 1-3, 4-6, 7-9, 10-12, 13-15, and 16-18) for selected raw data (Table 5-3, page 102). When the first three data points were averaged, the range between the child and mother's MLU, TNW, and NDW was not as extensive as it had been when DP 1 alone was studied. The mother's average MLU dropped to 6.56 from an initial high of 8.44 in DP 1, her average TNW fell to 1,359 from 1,579; and her average NDW went down to 314 from 420. The child's figures for
that same period were MLU, 1.61; TNW, 227; and NDW, 55. Other averaged figures can be found in Table 5-3.

During baseline the PCG averaged 197 AT's as compared to 169 CT's. The averaged number of adult turns continued to decrease as the study progressed, before rising for DPs 16-18. It is important to note the child turns also rose during the last three sessions. PCG B's percentage of TT was always higher than the child's in the averaged data, but the percentages of total turns was similar for the last two-thirds of the study (Adult = 51% and Child = 49%).

Table 5-3: DYAD B - TRIADIC AVERAGES OF SELECTED DATA

<table>
<thead>
<tr>
<th>DPs</th>
<th>AT</th>
<th>CT</th>
<th>TT</th>
<th>AT%TT</th>
<th>CT%TT</th>
<th>A/MLU</th>
<th>C/MLU</th>
<th>A/TNW</th>
<th>C/TNW</th>
<th>A-NDW</th>
<th>C-NDW</th>
<th>%Ve</th>
<th>%NVe</th>
<th>TTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>197</td>
<td>169</td>
<td>366</td>
<td>54%</td>
<td>46%</td>
<td>6.56</td>
<td>1.61</td>
<td>1359</td>
<td>227</td>
<td>314</td>
<td>55</td>
<td>78%</td>
<td>21%</td>
<td>.53</td>
</tr>
<tr>
<td>4-6</td>
<td>192</td>
<td>144</td>
<td>336</td>
<td>57%</td>
<td>43%</td>
<td>5.54</td>
<td>1.84</td>
<td>969</td>
<td>218</td>
<td>203</td>
<td>57</td>
<td>82%</td>
<td>18%</td>
<td>.50</td>
</tr>
<tr>
<td>7-9</td>
<td>170</td>
<td>164</td>
<td>334</td>
<td>51%</td>
<td>49%</td>
<td>5.07</td>
<td>1.95</td>
<td>784</td>
<td>243</td>
<td>207</td>
<td>77</td>
<td>78%</td>
<td>22%</td>
<td>.50</td>
</tr>
<tr>
<td>10-12</td>
<td>157</td>
<td>149</td>
<td>307</td>
<td>51%</td>
<td>49%</td>
<td>4.66</td>
<td>1.94</td>
<td>649</td>
<td>224</td>
<td>198</td>
<td>76</td>
<td>77%</td>
<td>23%</td>
<td>.48</td>
</tr>
<tr>
<td>13-16</td>
<td>157</td>
<td>154</td>
<td>311</td>
<td>51%</td>
<td>49%</td>
<td>4.52</td>
<td>1.83</td>
<td>713</td>
<td>257</td>
<td>191</td>
<td>84</td>
<td>70%</td>
<td>19%</td>
<td>.48</td>
</tr>
<tr>
<td>16-18</td>
<td>186</td>
<td>176</td>
<td>362</td>
<td>51%</td>
<td>49%</td>
<td>5.63</td>
<td>2.03</td>
<td>916</td>
<td>280</td>
<td>216</td>
<td>90</td>
<td>79%</td>
<td>21%</td>
<td>.47</td>
</tr>
</tbody>
</table>

Legend: data Point (DP); adult turns (AT); child turns (CT); total turns (TT); adult and child percent of TT (AT%TT) (CT%TT); adult and child MLU (A/MLU) (C/MLU); adult and child total number of words (A/TNW) (C/TNW); adult and child number of different word root (A/NDW) (C/NDW); child percents of verbal and nonverbal utterances (%Ve) (%NV); and type-token ratio (TTR)

Discussion

The child's column on NDW is intriguing for three reasons. First, his lexical usage was exceptionally limited at the beginning of the study. Second, the mother in Dyad B had difficulty mastering open questions. Third, during at least the initial two-thirds of the study, Child B was not responsive to open questions. During coaching it was cooperatively decided that (1) avoiding closed questions was the foremost component for question strategies to aid Child B's language development, (2) the child probably was not ready to answer open questions that required a more extensive cognitive base while
he was concentrating on learning to say new words, and (3) adult comments, which would take the pressure off a child to respond and give him models to store in his receptive lexicon, would be a positive substitute for questions.

To increase the caregiver's ability to use effective comments, she was shown how to use semantic mapping to prepare short lists of words relating to his favorite play items (e.g., a school bus, the Sesame Street Farm). The coach and PCG practiced making lists about farms, cars, garages, blocks, and shared dyadic social routines like cooking dinner and bath time. The PCG was encouraged to limit the number of new words she would target to include in their conversations and to be sure the words were repeated several times. Some of the most exciting moments in the study came when scripts confirmed that Child B had started to use words that PCG B had been modeling during a number of sessions.

Results

A close relationship can be seen in the movement of the data points for the PCG and child for the variables of total number of words and number different word roots (Figures 5-8 and 5-9, pages 104 and 105). In both cases the child's initial point was his lowest, and for the PCG, it was her highest. Child B started with 34 different word roots out of 94 total words in the first session. The PCG's had 420 different word roots in 1,579 words for that data point.

Towards the end of the study both graphs, taken from raw data presented earlier in Table 5-2, show similar peaks and declines in the data lines. Child B showed more variety across TNW with a large jump from 94 to 323 from DP 1 to DP 2 and another marked jump from session 14 (172) to 15 (425).

At DP 15 Child B's TNW reached a high of 425 (Table 5-2) which corresponded to his highest NDW, 120. It is important to note other
Figure 5-8

Total Number of Words Compared
For Dyad B Over Time

Figure 5-9

Number of Different Words Compared
For Dyad B Over Time
child variables for session 15. He had 50.16% of TT and his MLU (2.19) and TTR (.57) were also relatively high in DP 15. Although the caregiver's TNW was high in 15 (1,001), she appeared to limit her vocabulary as the study progressed, ending with a TNW of 971 and NDW of 220. Both were substantially below the starting figures of 1,579 and 420, respectively (Table 5-2).

Discussion

Between DP 14 and 15 there was a period of two weeks when there was no contact between Dyad B and the coach. All four strategies had been introduced by the 14th session. The family was out of town for one week-end, and the researcher and the caregiver had unavoidable commitments during the other week-end. Preparation for the break included an extensive review session of all strategies after the taping in DP 14. Handouts and training tapes were given to the PCG to review as time allowed during the two-week period. At session 15, the PCG indicated the child had started talking more during the break and that she had been setting aside a time period every evening to play with him on a one-on-one basis. The caregiver's observations were confirmed in the researcher's journal, "(Child B) did talk a lot more, and unfortunately for transcribing, faster. He seemed more of an equal partner. He's definitely initiating conversation more".

Results

There was not a significant change in Child B's TTR during this study. He began with .60 in DP 1 and ended with .57 in DP 18. The range of difference would not be apparent in Figure 5-10 (page 106) if the graph had not been made with the limited range of .40 to .65. This occurred as an pre-set function of the researcher's spreadsheet program.

Discussion

TTR is a variable designed to analyze the diversity of
language. In a SALT analysis TTR is based on the ratio of the number of different word roots to the total number of words from the first 50 complete and intelligible utterances. If a speaker has less than 50 complete and intelligible utterances, TTR is based on the total number of the intelligible utterances. In DP 1 the child's TTR was based on only 36 complete and intelligible utterances because that was all he used. DP 4's TTR was based on 44 utterances for the same reason.

Figure 5-10

![Type Token Ratio for Child B](image)

All the remaining TTRs were figured on the first 50 utterances. TTR was the only variable in this study in which the data was taken from complete and intelligible Utterances rather than total utterances. Child B's TTR movement was unremarkable during the period of this study. His range went from .42 to .60 with an average of .50.
STANDARDIZED TESTING RESULTS

Child B's baseline and follow-up formal testing scores appear in Table 5-4. At the time of the initial pre-testing Child B's age was three years five months. There was no problem qualifying him as "expressive language delayed" for the study. He had a 39 point spread between his PLS-3 Auditory Comprehension (receptive) standard score, 115 (84%ile), and his Expressive Communication standard score, 76 (5%ile). His EOWPVT-R standard score was 79 (8%ile), as compared to his PPVT-R standard score of 89 (32%ile). His baseline expressive language age equivalent scores were 2 years 2 months (PLS-3) and 2 years 3 months (EOWPVT-R), showing an approximate 13-month delay.

Child B's performance on post-testing, done April 21 and 22, 1994, was mixed. On the PLS, his receptive raw score was actually one point less than at baseline testing. Because his scores were taken from norms appropriate to his chronological age, then 3 years 9 months, his Auditory Comprehension score on the PLS-3 dropped from 115 (84%ile) to 99 (47%ile). However, he raised his PPVT-R standard score from 89 (23%ile) to 93 (32%ile) (Table 5-4).

Table 5-4: Child B Pre- and Post-Testing Scores

<table>
<thead>
<tr>
<th>CHILD B: PRE-TESTING</th>
<th>POST-TESTING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PPVT-R</strong></td>
<td><strong>PPVT-R</strong></td>
</tr>
<tr>
<td>Standard Score 89, 23%ile,</td>
<td>Standard Score 91, 32%ile,</td>
</tr>
<tr>
<td>Age Equivalent 2 years 10 months</td>
<td>Age Equivalent 3 years 4 months</td>
</tr>
<tr>
<td><strong>PLS-3</strong></td>
<td><strong>PLS-3</strong></td>
</tr>
<tr>
<td>Receptive Standard Score 115, 84%ile,</td>
<td>Receptive Standard Score 99, 47%ile,</td>
</tr>
<tr>
<td>Age Equivalent 3 years 10 months</td>
<td>Age Equivalent 3 years 8 months</td>
</tr>
<tr>
<td>Expressive Standard Score 76, 5%ile,</td>
<td>Expressive Standard Score 83, 13%ile,</td>
</tr>
<tr>
<td>Age Equivalent 2 years 2 months</td>
<td>Age Equivalent 2 years 10 months</td>
</tr>
<tr>
<td>Standard Score Total 95, 37%ile</td>
<td>Standard Score Total 90, 25%ile</td>
</tr>
<tr>
<td>Age Equivalent 3 years 1 month</td>
<td>Age Equivalent 3 years 3 months</td>
</tr>
<tr>
<td><strong>EOWPVT-R</strong></td>
<td><strong>EOWPVT-R</strong></td>
</tr>
<tr>
<td>Standard Score 79, 8%ile,</td>
<td>Standard Score 94, 34%ile,</td>
</tr>
<tr>
<td>Age Equivalent 2 years 3 months</td>
<td>Age Equivalent 3 years 5 months</td>
</tr>
</tbody>
</table>
Both expressive scores showed a positive change. On the EOWPVT-R, he went from a standard score of 79 (8\textsuperscript{ile}) to 94 (34\textsuperscript{ile}), while his Expressive Communication score on the PLS-3 went from 76 (5\textsuperscript{ile}) to 83 (13\textsuperscript{ile}). His baseline expressive language age equivalents averaged 3 years 1.5 months (Chronological Age, 3 years 9 months). That was a 6-month increase over a four-and-a-half month period.

VARIABLES SPECIFIC TO PRIMARY CAREGIVER B

Results

On each of the three baseline videotapes, the mother showed the most use of one strategy, following the child's lead (FCL), 22.31\%, 14.40\%, and 15.07\% in DPs 1, 2, and 3, respectively (Table 5-5, page 109). Her use of the open question (OQ) strategy varied from 5.38\% to 15.07\% of AT. Use of self & parallel talk (SPT) was particularly limited with percentages of .77\%, .41\%, and zero in DPs 1, 2, and 3 respectively. Expansions & extensions (E/ET) went from 4.62\% during DP 1 to 2.74\% during DP 3.

Table 5-5 has double lines to indicate the introduction of an intervention strategy. Self & parallel talk was introduced—including a video presentation and a cursory demonstration at the interpretation session—between DPs 3 and 4. Extensive coaching on the strategy was delayed until the end of session 4. All of the other intervention strategies were introduced at the end of the session underlined in their respective column. Thus, the use of OQ was introduced at the end of DP 5, and E/ET was introduced at the end of DP 13. Following the child's lead was formally introduced at the end of DP 8, but the use of comments to replace closed questions was included as part of the coaching on changing the caregiver's questioning behaviors.

As discussed above, even though the PCG had only a brief introduction to SPT at the December interpretation session, she
<table>
<thead>
<tr>
<th>DP</th>
<th>AT</th>
<th>EMT</th>
<th>FPIAT</th>
<th>EPIAT</th>
<th>OPEN</th>
<th>CO</th>
<th>COAT</th>
<th>FPOAT</th>
<th>PT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
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<td>10</td>
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<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
</tbody>
</table>

Legend: data points (DP) as a percent of AT (COAT); closed questions (CO); open questions (FPOAT); and total questions (TOTAL)
immediately adjusted her verbal behavior to include its use. Note the jump from zero percent use (DP 3) to 22.46% (DP 4). Her highest use of SPT came in session 17. PCG B started with a 5.38% for OQ and reached two usage highs, 13.02% in DP 7 and 13.74% in DP 15. The caregiver's natural tendency towards using FCL, started at 22.31% in the first data point and climbed to 35.80% immediately after it was introduced at the end of the eighth session. She used the strategy in more than 30% of all adult turns in sessions 13, 14, and 16. E/ET moved from 4.62% in DP 1 to 11.71 in the follow-up session, peaking at 14.69 in DP 15.

Discussion

It is important when using Table 5-5 to examine the points when each strategy was introduced. The frequency and percentages of closed questions was included in the table to contrast with the columns on open questions and because it was used to calculate the OQ/CQ ratio.

Results

Table 5-6 (page 111) shows a comparison of the averages from the baseline videotapes (DPs 1, 2, and 3) and the final three data points (16, 17, and 18). It shows the PCG's use of the intervention strategies plus CQ, the reciprocal to OQ. PCG B's baseline average for following the child's lead (FCL), one of the four main intervention strategies, was 17.26% of AT. The remaining strategies and their percentages of baseline usage were: .39% for self and parallel talk; 9.97% for open questions; and 3.96% for expansions & extensions.

Positive changes in three of four intervention strategies are illustrated in Table 5-6. The use of self and parallel talk increased 24.71% from an average of .39% to 25.10%, following the child's lead increased 10.74% from an average of 17.26% to 28.00%, and expansions & extensions increased 5.67% from an average of 3.96%
to 9.63%. The fourth strategy, modes of questioning, showed a negative trend when the use of open questions decreased 1.49%, from 9.97% to 8.48%. However, CQ also decreased 30.40% from 50.92% to 20.52%.

Table 5-6: AVERAGES OF FOUR INTERVENTION STRATEGIES DURING FIRST AND LAST THREE DATA POINTS

<table>
<thead>
<tr>
<th>DP</th>
<th>FCL\AT AVE.</th>
<th>SPT\AT AVE.</th>
<th>E/ET\AT AVE.</th>
<th>OQ\AT AVE.</th>
<th>CQ\AT AVE.</th>
<th>AVE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22.31</td>
<td>0.77</td>
<td>4.62</td>
<td>5.38</td>
<td>54.62</td>
<td>51.78</td>
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<td>2</td>
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<td>0.41</td>
<td>4.53</td>
<td>9.47</td>
<td>46.09</td>
<td>17.26</td>
</tr>
<tr>
<td>3</td>
<td>15.07</td>
<td>0.00</td>
<td>2.74</td>
<td>15.07</td>
<td>52.05</td>
<td>11.18</td>
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<td>11.89</td>
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<td>3.96</td>
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<td>29.92</td>
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<td>27.50</td>
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<td>8.00</td>
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<td>10.24</td>
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<tr>
<td></td>
<td>83.99</td>
<td>28.00</td>
<td>75.29</td>
<td>25.10</td>
<td>28.90</td>
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<td>61.56</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20.52</td>
</tr>
</tbody>
</table>

Legend: data point (DP); self and parallel talk as a percent of AT; (SPT\AT); following the child's lead as a percent of AT (FCL\AT); expansions & extensions as a percent of AT (E/ET\AT); open questions as a percent of AT (OQ\AT); AVE.; closed questions as a percent of AT (CQ\AT). Each variable (and in the case of OQ, its reciprocal) is totaled over three data points and then averaged in the following column.

Discussion

Dyad B's primary caregiver showed the most significant change in the use of SPT, 24.71% during the study. Self and Parallel Talk was the first intervention strategy targeted and it's possible that the novelty effect of providing specific intervention and associated motivation were key factors in its usage. The same sequence for introducing strategies used with Dyad A was followed with Dyad B (SPT, OQ, FCL, and E/ET).

Results

PCG B learned how to use self and parallel talk quickly. Its use percentage jumped from zero to 22.46% between DPs 3 and 4.
(Figure 5-11). Recall that the strategy was introduced at the interpretation session just before DP 4. Her usage decreased in DPs 5 and 6 and then started increasing again. The caregiver's use of SPT peaked during DP 17 at 30.72%. Other high points were 14 (26.92%) and 16 (27.50%).

Figure 5-11

Discussion

DP 6 contained the lowest use of SPT after the baselines had been taken. PCG B appeared uneasy during the interactive play during that session. Later during coaching she said she was uncomfortable about the difference between being the mother and a playmate. The reason for her concern came from two incidents during the videotaping where she had perceived the need to discipline the child for grabbing and hitting. The coach assured the PCG that it was unnecessary for her to give up the mother role even though she was
an interactive play partner. The PCG was encouraged to use self talk with an "I" statement (e.g., I don't like you to hit my arm) when needed.

Results

Figure 5-12 illustrates the use of open questions, presented as a percent of total adult turns. The data was graphed from material from Table 5-5. The use of open questions appeared to move in a variable, yet incremental manner. Open questions usage went from 5.38% in DP 1 to 10.24% in DP 18, but the strategy's use was constantly changing from a high of 15.07% at DP 3 (in baseline) to lows of 4.35% at DP 4 and 4.94% in DP 9. In addition to DP 3, PCG B showed double digit use of OQ in DP 5 (10.78%), DP 7 (13.02%), DP 15 (13.74%), and DP 18 (10.24%).

Figure 5-12
The use of open questions, the second strategy, was introduced at the end of DP 5 after only three coaching periods because: (1) PCG B had shown a strong preference for the use of SPT during the informal probes in the preceding sessions, (2) the researcher knew from experience in working with Dyad A that the second strategy would be more difficult for PCG B to apply, and (3) introducing OQ earlier would give the PCG more practice time on the strategy.

The high OQ in DP 3 may be confusing unless one also notes the number of total questions during that session. It contained 147 questions, more than appeared in any other data point; 112 (52.05%) were closed inquiries. The second highest point for open questions, 13.74% in Data Point 15, was achieved with only a total of 93 questions. Returning to the initial and final three data point averages shown in Table 5-6, the use of open questions showed a net loss of 1.49% from the baseline average of 9.97% to the final average of 8.48%. However, its reciprocal, closed questions dropped 30.40% from 50.92% to 20.52% in the same period.

Results

Following the child's lead (FCL) with contingent responses and comments was introduced during Data Point 8's coaching. It's usage had already increased during session 8, and continued to do so in session 9, just after it was introduced. Then it decreased during sessions 10 and 11 before increasing again. It showed a drop in the final two data points (Figure 5-13, page 115). Table 5-6 shows the averages for FCL for the first and final data groups had a growth of 10.74%, the difference between the baseline average (17.26%) and the last three data points average (28.00%).

Discussion

It appeared that the introduction of FCL and E/ET was contaminated by previous consultative coaching sessions. The coach
taught PCG B to use more comments to replace closed questions at the end of session 6. Comments are a form of following the child's lead so the use FCL started an incremental trend following DP 6, before it was targeted at the end of DP 8. PCG B was also encouraged to use indirect correction to reaffirm Child B's speaking attempts. This factor clouded the later introduction of E/ET.

However, the extent that PCG B was able to incorporate the use of FCL in her interactions with the child remains a strength. She used it in at least 30% of adult turns four different times during the second half of the total research period, including the high of 35.80% in DP 9 (Table 5-5). Barnes, et al, (1983) noted that of all adult interactive behaviors, comments and expansions are the most closely linked to child language growth.

Figure 5-13

Results

The use of expansions and extensions was the final target
strategy with both dyads. It was introduced at the end of session 13 with PCG B. Previously, its usage had varied from 1.45% at DP 4 to 9.26% in DP 9 (Figure 5-14). There appeared to be an inconsistent, but incremental trend in its usage with the highest point being shown during DP 15 (14.69%), immediately after the strategy was introduced. The final data point, 18, was second highest with 11.71%. Overall the use of E/ET grew 5.67%, from the 3.96%, the average in baseline, to a 9.63% average during the final three data points.

Figure 5-14

Expansions and Extensions

PCG B was encouraged to continue her natural use of indirect correction to give Child B a proper model for words he had trouble pronouncing. Material from Sharp (1987) presented in the viewer's guide to "Let's Talk: First Steps to Conversation", regarding the use of indirect language stimulation techniques, was discussed with
the PCG. The material recommended that when a child said a word or sound incorrectly, the adult should include the child's words (correctly pronounced) in the next sentences without calling attention to the error.

This approach worked with Child B. At times he would look expectantly at the adult, or speak with a rising pitch which was interpreted as an attempt to secure assistance or confirmation that he was using the correct word (e.g., child, /u/; PCG, /j s tu/). PCG B used this indirect language stimulation effectively, often employing it where she previously would have used a closed question.

Results

The data presented regarding employment of the strategies by PCG B is shown in bar graph form in Figure 5-15. In each case the targeted strategy is presented as a percent of the total adult turns taken in the initial and final three-point averages. The average of Figure 15

![Primary Caregiver B Averages](image-url)
DPs 1-3 appear on the left of the figure and the average of DPs 16-18 appear on the right. The strategies are shown in the order they were targeted during intervention.

CHAPTER SUMMARY DISCUSSION

The first research question was: Does the use of a consultative coaching model with a primary caregiver (PCG) of a language delayed preschool child result in measurable change to selected aspects of the PCG's communicative behaviors when interacting with the child? The answer for Dyad B is "Yes", with the exception of the strategy on open questions. The use of OQ only increased a slight .27% while the use of CQ decreased 20.16%.

Using open questions was the most difficult strategy for PCG B to master. She became more successful at avoiding the use of closed questions, by using verbal reflective comments and indirect correction, than in regularly using open questions. After training and practice, she could always change a closed question into an open form, and/or reword it into a comment that was not as limiting to the child's language development. However, she did not use the open form consistently during interactive play.

PCG B commented that open questions were easier to formulate and use in everyday settings when the researcher and a video camera were not present. At times she appeared self conscious when being taped for later viewing. She also believed that the use of SPT had become a more natural part of her language facilitation skills bank. Additionally, it was possible that Child B was not at a language developmental level for the use of open questions elicited increased talking.

It is hypothesized that during the first two-thirds of the study, the use open questions confused Child B because he was not at the developmental level where open questions were successful elicitors of language. In other words, Child B may have had a problem
with cognitive overload—the case where a child's still-developing brain has a limited capacity at a specific time—in this case regarding linguistic issues. The cognitive load issue may be relevant in a second instance with Child B. His standardized tests showed improvement in expressive language during the period of the research study. However, his receptive growth, which was not targeted for facilitation, basically remained unchanged.

An additional possibility was that, as the child's communication initiations were affirmed with continued use strategies like SPT, FCL, and E/ET, he began to show more confidence at answering more divergent queries like open questions. When that occurred, and only then, did the mother feel "natural" using them.

Figure 5-16 shows the usage frequency of closed and open questions for PCG B. Note that closed questions were always the

Figure 5-16

![Figure 5-16: Frequency of Closed and Open Questions](image)
caregiver's inquiry manner of choice. Data Point 17, (Table 5-5) which showed the lowest number of total questions (26) was the point where the percentages of the two questioning methods were most comparable (OQ = 7.19%, CQ = 9.80%). It should be noted that the use of any type of questions showed a general decremental trend after baselining, as PCG B opted to avoid them and substitute SPT, E/ET, and other types of comments. This was true for DPs 4 and 8, 10-14, and finally, 16 and 17. These sessions were marked by a lower total question frequency, which was especially evident during these four sessions: DP 4 (51); DP 8 (43); DP 12 (52); and DP 17 (26). Interestingly the Child B's three highest MLUs came during DPs 8 (2.28), 12 (2.24), and 17 (2.30).

The second research question, "Do the expected and improved communicative abilities of a PCG result in measurable changes in the child's communicative competence during the period of the study?", can also be answered in the affirmative. Child B's growth was slow and variable at times, but his overall picture during the videotaping and formal assessment showed improvement as evidenced by his post-testing expressive standard scores and gains in MLU, TNW, and NDW during the taping.

The third research question was: Are the improved reciprocal interactions stabilized and maintained after the consultative coaching has been completed?. Because of time constraints all conclusions to this question are based on a comparison of data from the initial baseline averages (DPS 1-3) and DP 18, the follow-up session. In conclusion, the reciprocal interactions did stabilize. Details pertaining to dependent variables are presented below.

Dependent Variables

The order of dependent variables, as originally presented in Table 1 (page 45), is followed to answer question three. With PCG B, from baseline to follow-up, the use of following the child's lead
increased 7.13%, (from 17.26% to 24.39%), self and parallel talk increased 16.68%, (from .39% to 17.07%), and expansions & extensions increased 7.75%, (from 3.96 to 11.71%). Data for these calculations was taken from Table 5-5 (page 109) for DP 18 and Table 5-6 (page 110) for baseline averages.

Using the same two tables, the ratio of open to closed questions changed from .19 to .34. The ratios were determined by taking the quotient of baseline percentages of OQ/CQ (9.97%/50.92%), and comparing it to the same data from DP 18 (10.24%/29.76%). When examined as a percent of adult turns, OQ increased a slight .27% and CQ decreased 20.16%.

The child's mean length of utterance in morphemes increased .24 and the mother's decreased 1.20 for a net gain of 1.44 (Tables 5-2 page 93 and 5-3 page 98). Child B's total number of words per session increased by 68 and his mother's decreased by 388. Child B's number of different words per session increased by 46 and his mother's decreased by 94. All three of the these variables, MLU, TNW, and NDW, which show increases for the child and declines for the PCG, indicate that the adult was adjusting her conversation to the child's ability level. Thus, they became positive elements for facilitating child language development (Berko Gleason, 1977; MacDonald, 1985; Tiegerman, 1989).

The turn-taking ratio between the child and the PCG for Dyad B changed from .85 (169 child turns to 197 adult turns) to .93 (191 child turns to 205 adult turns). Child B's ratio of verbal to nonverbal turns went from 3.71 to 3.76. These figures are also compatible with an environment for increasing child language development (Cross, 1984; Snow, 1989). The type token ratio for Child B decreased from .54 to .53, both figures fall in the normal range according to Templin's charts (Templin, 1957).

To summarize, PCG B implemented the targeted intervention
strategies. One could postulate that her empowerment and her self-efficacy in regard to her teaching competence led to higher expectations for Child B. The child, in turn, strove to fulfill those expectations.
Chapter VI

Conclusions and Summary

INTRODUCTION

"Children discover the properties of language through immersion in the communicative process" (Norris & Hoffman, 1990, p. 28). With the growth in the numbers of children needing speech-language services, not all preschool children needing these services are being verified or served. In addition, professionals who see a child for twenty minutes twice a week cannot "immerse" the child in the communicative process. This study sought a middle ground, a means for the speech-language pathologist to provide service via the child's own family.

In 1979 Bronfenbrenner set up a series of hypotheses. Three are paraphrased here: (1) children are more likely to acquire skills, knowledge and values from a person with whom they have an established relationship, (2) the developmental impact of a dyad tends to be greater during purposeful joint activities, and (3) the developmental impact increases directly as a function of the level of reciprocity and positive feelings between members of the dyad. This study sought to capitalize on established relationships, reciprocity, and joint routines/activities.

Purpose Restated

The value of early intervention has been well-established by past empirical research (Barnett & Escobar, 1990; Bricker & Schiefelbusch, 1991; Duchan & Weitzner-Lin, 1987; Richard & Schiefelbusch, 1990). Rossetti (1991) believed that the efficacy of early intervention was highly dependent on age of identification and the degree of family involvement. The present study proposed that a speech-language pathologist could effectively provide indirect
treatment to a child presenting an expressive language problem by working though a primary caregiver who had already established a strong reciprocal relationship with the language impaired child. The study considered the efficacy of using a consultative coaching model with primary caregivers of selected preschool children who were identified as expressive language impaired.

The primary caregiver (PCG) for each child was the focus of the study. The premise was that a speech-language pathologist could indirectly enhance parent-child communicative interactions to the extent there would be demonstrable growth in selected aspects of a child's language system. Each PCG was the active intervention agent for increasing communicative competence on the part of the child during the study, with the researcher serving as coach and direct supporting agent.

CONCLUSIONS

Two separate single subject dyads were secured for the study. The same methods and procedures were used with each. The researcher, a second-year graduate student majoring in speech-language pathology, served as the coach for indirect intervention. For both cases the research questions proposed were answered positively in varying degrees.

There was measurable change to selected aspects of a PCG's communicative behaviors when interacting with a child. Increases were measured in the use of three of the four main intervention strategies, self & parallel talk, following the child's lead, and expansions & extensions. Although the fourth strategy, the use of open questions, registered a decrease in usage with both caregivers, the ratio of open questions to closed questions improved.

Measurable gains were also found in the child's communicative competence during the period of the study. They were registered in improved expressive communication scores on standardized tests and
in the majority of the dependent variables studied. Furthermore the reciprocal interactions stabilized and were maintained two weeks after the consultative coaching had been completed.

The Coaching Model

After each coaching session, the researcher/coach logged anecdotal notes for some of the following components: the strategies discussed, the steps of the coaching procedures used, the caregiver and child reactions to each other's communicative acts and to various stimuli, self-evaluation comments on materials and/or methods used by the researcher, and notes to aid planning for future sessions. The log's main purpose was future planning, but it became an excellent self-management device for the researcher to stay on task.

Coder C (SLS) listened to one entire consultative coaching session plus portions of four more tapes for each dyad. Originally three tapes per dyad were randomly chosen; then two more were added so the coaching on each intervention strategy was checked for Dyad A. Two intervention strategy phases were checked for Dyad B. The objective was to verify the presence of the coach's behaviors pertaining to the five coaching steps. Coder C reported there was evidence of implementing the steps for each intervention strategy with Dyad A and for half of the phases with Dyad B from the randomly chosen tapes. From this investigation, it was assumed that the same procedures were followed in all phases with the second dyad.

The five basic steps followed in the coaching model, adapted from Showers (1983), were (1) present the rationale and theory behind the strategy, (2) demonstrate how to implement the strategy, (3) provide for practice for the trainee followed by feedback from the coach, (4) repeat the first three steps emphasizing demonstration, practice, and feedback, and (5) cooperatively design a coaching plan to help the learner decide when and how to incorporate
the intervention strategy into the family's daily schedule. Coder C certified that the all steps had been followed in one or more of the tapes reviewed from each dyad.

It was notable that the quality of tapes, especially those where the PCG and researcher were reviewing previous week's videotapes, was not good. At other times the coaching conversations between adults were interrupted by the child or, in several instances, children. There were always two children, and often the father, present during the coaching time with Dyad B. With Dyad A, even if there were not a second child present, Child A would interrupt adult discussions if he believed he was not getting his share of the PCG's attention. The researcher believed her experience of trying to coach with interruptions was a typical real-life situation. Conflicting agendas between adult conversation and adult-child conversation during the coaching period had been present with all field study subjects and with all recommended dyads during the present study.

The best progress in coaching sessions occurred when the children were not present. For this reason, a summary coaching session after videotaping DP 17 with Dyad B was delayed until the following week-end when the researcher and the primary caregiver could meet alone, review portions of several tapes with their respective scripts, and bring closure to teaching on the four strategies. This type of "view and review session" had been set up with PCG A, but had to be cancelled because of her family responsibilities.

The child's presence was necessary for demonstration. Role-playing was used, but appeared to be less effective--perhaps because it was so easy when compared to dealing with an unpredictable preschooler. During role-playing, the adult who played the child's role would give an appropriate reply to the strategy used, whereas,
the child's reply, if one was given, was not that predictable. In
retrospect, the researcher believed at least half of the coaching
periods should have been without children. Every time a videotape
review was planned for a coaching session, the researcher would
bring a new, different, and hopefully inviting toy, for the child to
use. That was only partially successful in occupying the child who
usually wanted to be included in the adult conversations or to have
the researcher play with him. Sometimes other children present
during coaching added to the confusion of roles.

Recording Procedures: Pluses and Problems

The sessions where the researcher had the camcorder on a
tripod and let it continue to run during the coaching were the best
quality coaching sessions for review purposes. The microphone on the
camcorder caught the conversation of everyone in the room equally,
whereas the lapel microphone over-accented the researcher. At times
the listener (even when it was the researcher herself) could not
distinguish what the other speaker had said on an audiotape. When
using a tripod, and as the 20-minute interaction time period ended,
the researcher would just ease into the dyadic play setting to serve
as a coach/model. That seemed to be a natural move and was one
advantage of using the tripod.

A tripod was used during videotaping in three sessions with
Dyad A and six with Dyad B. The primary advantage of a tripod was
that the researcher had her hands free to take probes and other
notes during the videotaping. The major disadvantage was a lack of
flexibility. The children did not stay in one area very long, and a
camera on a tripod in a small room was difficult and noisy to move
and readjust quickly. The researcher believed it was possible to
catch interactive moments better when she was holding the camera
because she could zoom the lens in and out as needed. For these
reasons, it is recommended to have an assistant to videotape.
There were times when the presence of another person was disconcerting to a child and/or the caregiver. But, for the most part once the camera was set up and running, the child usually ignored it and became absorbed in play. It appeared that the caregivers were always aware that they were being videotaped.

If someone were to replicate this research, they would have to decide which taping situation was best for their purposes and subjects. Issues to consider would be the age and distractibility of the child, the size and lighting of the room, and the type and quality of the video recording equipment. In many clinical settings, a second person could do probe counts behind a one-way mirror. Also some facilities are able to hide the camera. This was not an option in dyadic homes.

**PCG Pre-Test and Post-Test**

Both primary caregivers (PCG) took the Parent Pre- and Post-Test (Appendix B) at the same point in their respective studies. It had been planned that the PCG would do the test during the time periods when the child was being evaluated with the standardized tests. PCG A actually did the Pre-Test and Post-Test at the Barkley Memorial Center during breaks in the formal testing because Child A would not cooperate with testing procedures without the caregiver being present. Because of her work schedule, PCG B was allowed to take the Pre-Test home to complete, and the researcher picked it up during the subsequent interpretation session. The second PCG was given the Post-Test two days before the follow-up videotaping and returned it at the taping.

PCG A's scores went from 53% on the Pre-Test to 86% on the Post-Test. PCG B's scores were 53% on the Pre-Test and 73% on the Post-Test. With both dyads another caregiver, the mother of Child A and the father of Child B, also chose to complete the adult testing. The mother of Child A moved from 53% to 93%, and Child B's father
changed from 60% to 86%. The Pre- and Post-Test's stated purpose, to give the researcher initiating topics for discussion and coaching, was accomplished.

Consultation Evaluation

Dyad A

Primary Caregiver A completed the Consultation Evaluation (Appendix D) on January 15, 1994, the day Child A's post-testing was completed. The Consultation Evaluations form had a five-point check-off scale under each question. The ordered choices were, "Strongly Disagree", "Disagree", "No Opinion", "Agree", and "Strongly Agree". PCG A checked "Agree" on all 15 questions and did not write a comment. She said that she thought she still needed more work on the use of expansions & extensions, but the researcher would be the one to find out if she had been successful at implementing the strategies.

Dyad B

Primary Caregiver B took the Consultation Evaluation with her after the final testing/videotaping and mailed it back to the researcher. She checked the box for "Strongly Agree" on 11 of the 15 questions and "Agree" on the remaining four. Her comments at the end follow: "We have seen measurable change in our child's language abilities over the past 5 months, and we continue to see improvement. We are excited and encouraged by his progress. In addition our child is also encouraged and tries hard to work with us, when we work with him on language development. We are seeing our child initiate conversation. The pathologist was very effective and the study was well worth our time" (underlining by PCG B).

SUMMARY

In Chapter II's literature review, it was reported that mothers of children with special needs did not differ in verbal responsiveness to the children's turns from mothers of

At times Tannock's comments, and the findings from other researchers with similar views about primary caregivers having different interaction styles, seemed applicable to the primary caregivers in this study. Some parents, particularly those whose children evidence communication problems, have difficulty with silence. When someone asks their child a question, they immediately usurp the child's opportunity and reply. This study, and others reported by Broen and Westman (1990), MacDonald (1989), Girolametto (1988a), and Tannock (1988), have shown that wait time is a fairly easy strategy to teach, and that communication exchanges between caregivers and handicapped children can be improved through the use of selected intervention strategies.

Directions for Future Research

If this type of research were to be continued, considerations should be given to having at least three dyads going through the procedures concurrently. That would provide small class settings for presenting the rationale and theory behind the strategies, more people with whom to role-play the use of strategies, time to watch and discuss professional and study videotapes together, an extended caregiver support group and, a more efficient use of the speech-language pathologist's time. A reduction in the number of dependent
variables being examined could also provide a more manageable research design.

The instructional/coaching classes should be held in a setting with child care arranged for parents who wanted it. However, the majority of the intervention/coaching data points should still be done in a dyad's home to maximize generalization through a natural setting. Increasing the subject sample size by using three or more dyads concurrently, would add strength to the design because one could track the effect of an intervention being introduced across dyads. That would help secure a multiple baseline across subjects design. Such investigation(s) would enhance the validity of the reported results regarding clinical applicability. Clinically, another point to remember is that a PCG has the potential for affecting more than the single child being studied.

Another element to consider deals with the merits of having other professional service providers involved during the course of such a study. Both dyadic children in this study were receiving services when they were recommended for inclusion and continued to do so throughout the research period. Child A had an hour a week with a homebound Head Start teacher, and Child B was being served by a rural speech-language pathologist in two half-hour sessions per week. It would seem that a unified research design should control both aspects of service to the child and family. Clinically, unified treatment services for a preschool child who qualified under Nebraska Rule 51 should incorporate consultative work with a significant caregiver. The cohesiveness of such a program would allow for greater flexibility in making the necessary adjustments to best facilitate child learning and meaningful adult/child interactions.

More Potential Clinical Implications

There are several potential clinical advantages to using a
speech-language pathologist (SLP) in a consultative, rather than a direct service model. Depending on how the program was organized, it could be an efficient and cost-effective use of the SLP's time, the effect of speech-language pathologist could be magnified as the PCG employs language facilitation strategies, and the SLP could continue in either a case management or supporting/advising role. The PCG could capitalize on daily routines and common interests in a natural setting to expand and extend shared discussion topics. Demonstration coaching lessons have the potential to increase positive PCG/child interactions, improve the child's functional language, and give the caregivers a sense of self-efficacy and empowerment in regard to their ability to help their child. Continued mutual support from other parents and caregivers could be available by adding group a element to the design.

Final Summary

This study has shown that a speech-language pathologist can indirectly serve an expressive language delayed child by using consultative coaching with the primary caregiver of that child. The four principal intervention strategies taught to the two PCGs were using: self & parallel talk, open questions, and expansions & extensions, and following the child's lead with contingent responses and comments. Increased usage was noted in three of the four strategies with both dyads. The fourth strategy, the use of open as opposed to closed questions, was difficult for both primary caregivers. However, each PCG grew in her awareness of the differences in types of questions and managed to improve her ratio of open versus closed questions.

At the same time that the PCGs were learning and applying new strategies for communicating with the child, there was evidence that the respective children were improving in many aspects of their communication skills. Other variables, like the child's TTR,
remained unchanged. Normal maturation, and the clinical services the children were receiving from other professionals need to be considered, but it is believed that the majority of the change observed in the two children in this study was due to the improvement in the PCGs language facilitation abilities.

Each of the three research questions was answered affirmatively, albeit to a varying degree. Use of a consultative coaching approach with the primary caregiver of a child with an expressive language delay appears to be an effective service delivery model for improving interpersonal communication behaviors between the child and PCG. The model also seems to result in enhanced expressive language behavior by the child.
REFERENCES


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APPENDIX A

GUIDELINES FOR

THE IDENTIFICATION

OF

POTENTIAL SUBJECTS
Guidelines for Identification of Potential Subjects

1. The child is between the ages of 2.4 and 4.0 years.
2. The child is evidencing a probable expressive language delay.
3. The child's reported vocabulary of intelligible monosyllable words should be limited, and he/she should not be regularly using multiword utterances.
4. The child comes from a monolingual home in which the family uses Standard American English.
5. The child has no known history of organic or motor disorders.
6. The child appears to have normal cognitive abilities and has no known severe neurological, sensory, or emotional impairments.
7. The child may be eligible for service under Nebraska Rule 51 for speech-language services, but this is not a requirement for the study. It is preferred to find children for the study who have not been served in the past.
8. A child scoring from 1.5 to 2.0 standard deviations from the mean on a norm-referenced measure who would not qualify for service under Nebraska Rule 51 would be a prime candidate for this study.
9. It is believed the Primary Caregiver (PCG) will take the time to work with the researcher.
10. The PCG may not be a speech-language pathologist or a person trained to facilitate child language growth.
APPENDIX B

A. PARENT PRE- & POST-TEST
B. PARENT PRE- & POST-TEST

with

Theoretical References
A.

**PARENT PRE- AND POST-TEST**

Choose the one "best" answer to each of the following questions:

1. Children usually say their first words between
   a. 4-8 months of age.
   b. 6-10 months of age.
   c. 9-15 months of age.
   d. 16-20 months of age.
   e. 21-25 months of age.

2. The average age for a child to start combining words meaningfully (i.e., "more cookie", "doggie bark") is
   a. between 6-10 months of age.
   b. between 11-15 months of age.
   c. between 16-20 months of age.
   d. between 20-24 months of age.
   e. between 24-30 months of age.

3. A child's spoken language ability usually depends on
   a. the amount and quality of speech heard from parents and/or caretakers.
   b. whether the child is a boy or a girl.
   c. the birth order of the child in the family.
   d. opportunities to watch TV shows.
   e. the number of brothers and sisters in the family.
4. "Normal" spoken language development usually occurs when
   a. parents/caregivers ask a child a lot of direct questions.
   b. children are exposed daily to people with a variety of
      speaking abilities.
   c. children only hear "correct" speech.
   d. children communicate daily with other people.
   e. children have opportunities to read books.

5. Children of similar ages, no matter where they live in the
   world, acquire language in a similar order regardless of their
   culture
   a. because they are born with similar human abilities.
   b. because we live in a global community where events and
      actions in one nation influence people in other nations.
   c. because they tend to use the same kinds and types of
      utterances.
   d. because all grammars are alike worldwide.
   e. because all languages are spoken.

6. To what extent is information communicated nonverbally in
   face-to-face conversation?
   a. up to 50% of the information may be translated through non-
      verbal means.
   b. up to 40% of the information may be translated through non-
      verbal means.
   c. up to 60% of the information may be translated through non-
      verbal means.
   d. up to 30% of the information may be translated through non-
      verbal means.
   e. up to 70% of the information may be translated through non-
      verbal means.
7. Caregivers can best help a child develop language by
   a. by using comments and expansions to validate the child's utterances.
   b. using short, simple utterances.
   c. ignoring the child who does not use acceptable speech.
   d. giving the child specific directions on what to do next.
   e. correcting a child who does not use acceptable speech.

8. A three-year-old child who says "wed" for "red" and "tat" for "cat"
   a. probably has a speech problem that should be treated.
   b. probably does not need speech correction.
   c. probably speaks that way because it sounds cute.
   d. probably thinks a "w" is an "r" and a "t" is a "c".
   e. probably is imitating a TV cartoon character.

9. Parents who continuously correct their three-year-old's mispronunciations may have no noticeable effect on the child's speech
   a. because the child may ignore the parent.
   b. because the child may be stubborn.
   c. because the child may not be developmentally ready to correct the speech problem.
   d. because the child may not be making a conscious effort to change.
   e. because the parent may be "correcting" at the wrong time.
10. Most children learn how to form sentences
   a. because they are born knowing sentence rules.
   b. because children imitate adult speakers.
   c. because parents consciously teach their children words.
   d. because parents focus on what children say.
   e. because children normally are given instruction on how to formulate sentences.

11. Children throughout the world show similarities in their early two-word expressions
   a. because all parents teach their children to talk in the same way.
   b. because all languages can be traced back to one mother language.
   c. because all children talk about well-known objects and people in their environment.
   d. because children in the two-word stage talk a great deal about space and time.
   e. because all children have the same experiences.

12. Children usually produce consonants like /s/ and /z/ later than they do /b/ and /d/
   a. because having the upper front teeth is necessary to pronounce /s/ and /z/.
   b. because /b/ and /d/ are used more frequently in our language.
   c. because "baby" starts with /b/.
   d. because "da-da" starts with /d/.
   e. because it is harder to control the tongue for /s/ and /z/. 
13. **A successful conversational speaker knows**
   a. how to produce all words distinctly.
   b. when to take a turn.
   c. how to use a large vocabulary.
   d. how to get another person's attention and keep it.
   e. how to use as many complicated sentences as possible.

14. **To increase a child's basic vocabulary adults should**
   a. explain at least one new word to the child every day.
   b. expand the child's own utterances by enlarging on the child's ideas.
   c. play nursery rhyme tapes to put the child to sleep.
   d. ask the child easy questions that can be answered with "yes" or "no".
   e. keep the child isolated from children who can't talk well.

15. **Children learn conversational skills (i.e., listening, turn taking, considering a listener's point of view)**
   a. by listening to television.
   b. by attending a nursery or pre-school at least two days a week.
   c. by listening, talking, and interacting with others in a variety of communicative situations.
   d. from older brothers or sisters.
   e. by being cued at school when to talk and when to listen.
Choose the one "best" answer to the following questions:

1. Children usually say their first words between
   a. 4-8 months of age.
   b. 6-10 months of age.
   > c. 9-15 months of age.
   d. 16-20 months of age.
   e. 21-25 months of age.

   Between 12-18 months of age children acquire and use their first set of ten words. First words typically are labels. The majority of these words are names for objects or persons, or classes of objects or persons. (McCormick & Schiefelbusch, 1990, pp. 73-76; Owens, 1991).

2. The average age for a child to start combining words meaningfully (i.e., "more cookie", "doggie bark") is
   a. between 6-10 months of age.
   b. between 11-15 months of age.
   > c. between 16-20 months of age.
   d. between 20-24 months of age.
   e. between 24-30 months of age.

   Young children start to put words together meaningfully during their second year near the time when they have developed a 50-word vocabulary. These two word utterances convey at least two main ideas (i.e., "big dog"), and are different from utterances like "all gone" or "no more" which are viewed as single words (Owens, 1992; Stick,
3. A child's spoken language ability usually depends on
   a. the amount and quality of speech heard from parents and/or caretakers.
   b. whether the child is a boy or a girl.
   c. the birth order of the child in the family.
   d. opportunities to watch TV shows.
   e. the number of brothers and sisters in the family.

The speech used by parents/caretakers provide the models for a child's spoken language. Stewart, 1973, found that the amount of verbal stimulation that a mother gave directly to her child was highly correlated with measures of the child's linguistic competence (Coggins, 1991; Hart, 1985; Sachs in Berko-Gleason, 1989, Stewart, 1973). It is important children have parental/caregiver models (Bernstein, 1988).

4. "Normal" spoken language development usually occurs when
   a. parents/caregivers ask a child a lot of direct questions.
   b. children are exposed daily to people with a variety of speaking abilities.
   c. children only hear "correct" speech.
   d. children communicate daily with other people.
   e. children have opportunities to read books.

   Practical and useful communication, both verbal and nonverbal, lets the child feel they can control their surroundings (Coggins, 1991; Hart, 1985; Sachs, in Berko-Gleason, 1989). The more they feel success in controlling people or objects, the more they continue to develop speech to do so. In other words, children learn
to talk by talking! (Paul and Elwood, 1991).

5. Children of similar ages, no matter where they live in the world, acquire language in a similar order regardless of their culture
   a. because they are born with similar human abilities.
   b. because we live in a global community where events and actions in one nation influence people in other nations.
   c. because they tend to use the same kinds and types of utterances.
   d. because all grammars are alike worldwide.
   e. because all languages are spoken.

Language in humans is dependent on being part of a society in which learning to speak is a social activity. No matter what language they are learning to speak, all children use the same kinds and types of utterances (Berko Gleason, 1989). Languages have certain universals including phonology, grammar, semantics, and pragmatics. Lenneberg, 1967, says, "Language is species specific and species uniform". It appears at around the same time and in the same manner no matter where the child lives, (i.e., all children learn to ask for something, all learn to say a form of negation 'no'). It's a continuous process, from cries and babbling up to the first words (Bernstein, 1989; Owens, 1990).

6. To what extent is information communicated nonverbally in face-to-face conversation?
   a. up to 50% of the information may be translated through nonverbal means.
   b. up to 40% of the information may be translated through nonverbal means.
c. up to 60% of the information may be translated through non-verbal means.
d. up to 30% of the information may be translated through non-verbal means.
e. up to 70% of the information may be translated through non-verbal means.

Up to 60% of the information may be translated through non-verbal means (Owens, 1990). General reference for nonverbal (Coggins, 1991).

7. Caregivers can best help a child develop language by
   a. using comments and expansions to validate the child's utterances.
   b. using short, simple utterances.
   c. ignoring the child who does not use acceptable speech.
   d. giving the child specific directions on what to do next.
   e. correcting a child who does not use acceptable speech.

When mothers think the child's utterance has meaning, or act as if the utterances has meaning, it gives the child the idea that language has value and meaning. Such adult behaviors encourage children to repeatedly engage in verbal behavior (Coggins, 1991, Mann in Berko-Gleason, 1989; Norris & Hoffman, 1990; Pease, Berko-Gleason, & Pan in Berko-Gleason, 1989). Comments and expansions have been reported to be most closely linked to child language growth (Barnes, et al., 1983).

8. A three-year-old child who says "wed" for "red" and "tat" for "cat"
   a. probably has a speech problem that should be treated.
   b. probably does not need speech correction.
c. probably speaks that way because it sounds cute.
d. probably thinks a "w" is an "r" and a "t" is a "c".
e. probably is imitating a TV cartoon character.

If these are the child's only phonological errors, the child probably does not need speech correction as the errors are developmentally age appropriate (Bernthal & Bankson, 1988; Bernstein, 1988; Nebraska-Iowa Articulation Norms).

9. Parents who continuously correct their three-year-old's mispronunciations may have no noticeable effect on the child's speech
   a. because the child may ignore the parent.
   b. because the child may be stubborn.
   c. because the child may not be developmentally ready to correct the speech problem.
   d. because the child may not be making a conscious effort to change.
   e. because the parent may be "correcting" at the wrong time.

   If the child is not cognitively and/or motorically ready to produce the correct speech sounds, correction will not have any noticeable effect. Self-monitoring must be the basis for a child to acquire correct phonology (Bernstein, 1989, p. 106; Stick, 1991).

10. Most children learn how to form sentences
    a. because they are born knowing sentence rules.
    b. because children imitate adult speakers.
    c. because parents consciously teach their children words.
    d. because parents focus on what children say.
    e. because children normally are given instruction on how to
formulate sentences.

Children normally do not need formal instruction to correctly form sentences if they have had correct speech models. It's only when those models are not available, or when a child cannot hear them, that problems develop (Bernstein, 1989; Tiegerman, 1989, Owens, 1991; Tager-Flusberg in Berko-Gleason, 1989).

11. Children throughout the world show similarities in their early two-word expressions
   a. because all parents teach their children to talk in the same way.
   b. because all languages can be traced back to one mother language.
   c. because children talk about well-known objects and people in their environment.
   d. because children in the two-word stage talk a great deal about space and time.
   e. because all children have the same experiences.

Children in the two-word stage talk a great deal about objects and people that are present in their environment. They began labeling objects and people, and gradually put the two together: e.g., Teddy ball, Mommy hat, baby bottle, (Bernstein, 1989).

12. Children usually produce consonants like /s/ and /z/ later than they do /b/ and /d/
   a. because having the upper front teeth is necessary to pronounce /s/ and /z/.
   b. because /b/ and /d/ are used more frequently in our language.
c. because "baby" starts with /b/.

d. because "da-da" starts with /d/.

> e. because it is harder to control the tongue for /s/ and /z/.

The phonemes /b/ and /d/ are simpler sounds and /s/ and /z/ require more control of the fine motor skills involving the articulators which include the tongue (Bernthal & Bankson, 1988; Bernstein, 1989)

13. A successful conversational speaker knows

a. how to produce all words distinctly.

> b. when to take a turn.

c. how to use a large vocabulary.

d. how to get another person's attention and keep it.

e. how to use as many complicated sentences as possible.

Conversation implies a partnership, two or more people taking turns at both speaking and listening. A successful conversationalist also needs to be able to rephrase and/or repair an expression if the listener does not comprehend it (Lahey, 1988; Owens, 1992; Tiegerman, 1988).

14. To increase a child's basic vocabulary adults should

a. explain at least one new word to the child every day.

> b. expand the child's own utterances by enlarging on the child's ideas.

c. play nursery rhyme tapes to put the child to sleep.

d. ask the child easy questions that can be answered with "yes" or "no".

e. keep the child isolated from children who can't talk well.
When an adult expands the child's own utterance meaningfully, a child gradually begins to understand the relationships between and among words, i.e. an object action phrase, 'Daddy go', could become modifier object action phrase, 'my daddy go', or modifier object action modifier, 'my daddy go fast' (Bricker & Schiefelbusch, 1990; Norris and Hoffman, 1989, Owens, 1991).

15. Children learn conversational skills (i.e., listening, turn taking, considering a listener's point of view)
   a. by listening to television.
   b. by attending a nursery or pre-school at least two days a week.
   c. by listening, talking, and interacting with others in a variety of communicative situations.
   d. from older brothers or sisters.
   e. by being cued at school when to talk and when to listen.

   One learns to converse by doing so. Interacting with others in all forms is pertinent to adequate social discourse (Lahey, 1988; Owens, 1992; Peace, Berko-Gleason, & Pan in Berko-Gleason, 1989; Schiefelbusch, 1986).
APPENDIX C

KNOWLEDGE BASE
KNOWLEDGE BASE

Check at least one answer for each of the following statements. These statements are about topics frequently discussed in child development books.

1. Very young infants recognize their mothers' voices as being distinct from voices of other women.
   Already know____  Don't Know____  Want more information____

2. The first year of life is a very important period for language development.
   Already know____  Don't Know____  Want more information____

3. Parents usually play a key role in the acquisition and development of their child's language.
   Already know____  Don't Know____  Want more information____

4. A child’s productive or expressive vocabulary is not always the same size as the child’s receptive (comprehension) vocabulary.
   Already know____  Don't Know____  Want more information____

5. Social interaction is a necessary step in learning to talk.
   Already know____  Don't Know____  Want more information____
6. The use of English word forms and grammar develops in a reasonably predictable order.

Already know Don't Know Want more information

7. What, where and who questions are easier for children than when, how and why questions.

Already know Don't Know Want more information

8. When children first learn to add /s/ to "cat" to make "cats", they often add /s/ to "foot" to make "foots".

Already know Don't Know Want more information

9. Non-verbal communication is vital to learning to talk.

Already know Don't Know Want more information

10. Most people assume babies learn to speak because they must communicate in order to get what they want or need.

Already know Don't Know Want more information

11. A child learns the meanings of words by hearing them over and over again in different sentences with varying tones of voice, facial expressions, and body language.

Already know Don't Know Want more information
12. Understanding language is far more important for a toddler than actually speaking it.

13. Communicative signals (i.e., smiling, pointing, reaching, pulling, crying, gesturing, babbling, and grasping) precede meaningful vocalization; parents/caregivers should respond to these as intentional communication.

14. Three out of 10 children have middle ear infections that cause temporary hearing loss.

15. Expecting a response and waiting for a response are critical elements in developing turn-taking skills.
CONSULTATION EVALUATION
CONSULTATION EVALUATION

1. My knowledge of the value of nonverbal communication has increased.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

2. My knowledge of how children develop verbal communication has increased.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

3. My knowledge of childhood development has increased.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

4. My understanding of the importance of verbal language to later academic success has grown.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

5. I can apply knowledge and strategies I learned in consultation sessions.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

6. I feel more comfortable as a parent because of the consultation sessions.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___
7. The consultation sessions have made me feel more competent as a parent facilitating my child's language development.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

8. I think the consultation sessions will help me communicate more effectively with other children.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

9. I met with the speech-language pathologist as often as necessary.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

10. The speech-language pathologist recognized and considered my ideas and concerns.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

11. The consultation sessions confirmed that I know how to help my child develop language.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

12. As a result of the consultation sessions, I have been able to demonstrate to others how to best help my child develop language.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___
13. As a result of the consultation sessions, I work with my child more often and more effectively.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

14. The consultation project was a valuable use of my time.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

15. My child's language abilities have improved since I started the program.

Strongly Disagree ___ Disagree ___ No Opinion ___ Agree ___ Strongly Agree ___

Comments:
APPENDIX E

FIELD STUDIES
FIELD STUDIES

Three dyads were used in the development of some of the procedure outlined in the methods chapter of this paper. The first, Dyad A, was a 30-year-old mother of three children interacting with her 41-month old daughter. The child was the second of three; she had male siblings 25 months older and 16 months younger. The family was chosen because of the mother's willingness to participate in the study when the original family scheduled cancelled at the last minute. Both parents are University of Nebraska graduates; the mother taught two years before her children were born. Child A was tested on July 31, 1992 at the Barkley Memorial Center. Her standard score on the Peabody Picture Vocabulary Test-R (PPVT-R) was 124, and her Reynell Development Language Scales standard scores were: Verbal Comprehension, 123, and Expressive Language, 113.

On August 6, 1992 the researcher videotaped the dyad at play in their home. Three practice consultative sessions between the mother and the researcher were held during September and October, 1992, including an initial session in which positive and negative mother/child interactions were identified. Since Child A was so high-functioning, the focus for the other sessions was general language development strategies the mother could use with her slower developing youngest son. On October 17, 1992, Child A and her youngest brother who was showing signs of delayed language, were tested with the Preschool Language Scale-3, (PLS-3) (Zimmerman, Stiner, & Rond, 1992) which had just been published in a standardized form. Child A's total standard score was 130 with 126 for Auditory Comprehension and 127 for Expressive Communication. The researcher recognized there had been a time lapse from the initial July assessment procedures, and, in addition two consultation
sessions has been held before the PLS-3 was administered. The objective was to gain an idea of the relationship between the new PLS-3 and the Reynell. The younger brother, at 2.3 years of age, had a total standard score of 90 with 101 in Auditory Comprehension and 80 in Expressive Communication. The last consultative session involved teaching the mother strategies she could use to facilitate his language development.

A language sample was taken of Parent A and the younger brother August 3, 1993. The child, now 3.1, used several multiword utterances although some were unintelligible. This may have been due to only using the built-in microphone on the camcorder. The tape is being used as a practice tape for transcription and coding training.

DYAD B

The researcher ran field tests with Dyad B between August 8-20, 1992 in Oregon. The process was informally done in a home setting, but many consultative opportunities were available with the 28-year-old college educated mother of two boys. The oldest, a 35-months-old male, showed evidence of delayed language development. He was chosen because he met criteria indicating risk for a speech/language disorder, and because of the family's concern about the existence of a language delay. Relevant medical history included open heart surgery with extended ventilation eight days postnatal, respiratory infections, multiple middle ear infections, two auditory tubal procedures, and a mild conductive hearing loss.

Child B was assessed using both norm referenced and informal measures. Procedures included taking language samples with different conversational partners and settings; administering the PPVT-R, (1981); the Preschool Language Scale-Revised, (PLS-R) (Zimmerman, Stiner & Rond, 1979); the Verbal Language Development Scale (VLDS) (Mecham, 1971); the Bzoch & League Receptive-Expressive Emergent Language Scale, (REEL) (Bzoch & League, 1980) and the Bankson &
Bernthal Quick Screen of Phonology (Bankson & Bernthal, 1990). The Reynell was not available in Oregon.

The assessment instruments used were valuable. The mother believed the REEL scale and the Parent Pre-Test and Knowledge Base (an earlier draft of Appendices C & D) caused her to think about components of her son's language. She commented that he could understand much more than he could express as she filled in items on the scale. This was confirmed by a two year spread, 4.0 to 2.0 between Language Comprehension and Verbal Ability on the PLS-R; and a PPVT-R standard score in receptive vocabulary of 98 compared to a standard score of 69 on the Bankson & Bernthal Quick Screen of Phonology. Child B earned a standard score of 106 on the PPVT-R, Form L. On the PLS-R his total Language Quotient was 103, but there was a marked difference between the receptive and expressive domains. The Auditory Comprehension score was 24, equaling an Auditory Comprehension Quotient of 137 and an Auditory Comprehension Age of 48 months. This contrasted with a Verbal Ability score of 8, Verbal Quotient of 68.8, and Verbal Age of 24 months.

The investigator stayed with the family for 11 days which provided opportunities for informal observation, investigator-child interactions, and consultation with the child's family. The VLDS was completed after these observations. With 19.5 total points, Child B had a 2.39 language age equivalent according to the scale's data tables. Excessive use of nonspecific pronouns was noted on the protocol and in the language samples. REEL scores were Language Quotient, 94; Receptive Quotient, 103; and Expressive Quotient, 86. The last quantitative instrument used was the Quick Screen of Phonology, an abbreviated form of the Bankson-Bernthal Test of Phonology (Bankson & Bernthal, 1990). Child B's standard score was 69, which was in the second percentile. The validity of this screening can be questioned because the 35-month-old child was
exactly 1 month under the lowest norms given for the test.

Two language samples for Child B were transcribed, one taken with the mother and one with the researcher. The latter, with a total of 447 utterances, was subject to SALT analysis. He used non-specific words 49 percent of the time. The child exhibited verbal language avoidance tactics (i.e., back-channeling and frequent conversational turnabouts) and excessive nonspecific language. During the 12-day observation period, he used specific nouns only for his mother, father and the two family dogs. Other relatives, grandparents, etc., were referred to as /dIs/. He often looked like he wanted to say a name when it was modeled, but would wait for the adult conversational partner to repeat the word (i.e., "Grandpa," or "Mary" with a questioning inflection). Subsequently he would shake his head affirmatively and say, "Jep".

Strengths noted in the child's communication were mostly pragmatic. He used many nonverbal devices, but did show frustration when he could not communicate his wants or needs. He evidenced good receptive vocabulary for everyday tasks, a relatively long attention span, and excellent manual manipulative skills with Duplo blocks and other toys. Two overall goals were cooperatively established with the mother during the visit. Counseling and demonstration training were initiated. One goal was to expand and give meaning to the child's own utterances, other was the elimination of adult models of improper overgeneralization of /i/ as a final phoneme, (i.e., the final phoneme of /horsI/ being used for other nouns, /r sI/, /tr kI/, and /b sI/), and the last goal involved using a more accepting manner towards the child's verbal efforts. It was recommended the child be tested for speech-language services after his third birthday in September. He has since qualified for special services by the local school district in Oregon.

DYAD C
A third study was initiated during the fall of 1992 with a 33-year-old mother and her 45-month old son. This mother of three children has a high school education. Her oldest daughter, age 7, was receiving speech-therapy for a lateral lisp at the time. Child C reportedly had otitis media problems on numerous occasions starting at the age of two months. Many episodes were discovered when he was at a physician for a regular well-baby check-up. He appeared to have a high pain tolerance. The researcher noted, after a home visit, that Child C tended to use an inappropriately loud voice. An attempt to screen his hearing with a portable audiometer during the initial home visit was not successful. No hearing loss was noted, but the validity of the testing situation was questionable.

In December, 1992, Child C had a hearing screening done at the Educational Service Unit (ESU) mobile health van. The registered nurses detected a mild hearing loss in both ears at that time. The researcher then arranged for the child to have a complete hearing test with the Educational Audiologist from the ESU. At the second testing Child C's hearing reported "normal despite fairly flat tympanograms".

Child C was assessed at the Barkley Memorial Center on September 24, 1992. Two language samples of mother/child interactions were also taken, one during the Barkley assessment and other two days later at the subjects' home. The mother-child dyad played with varied materials, some furnished by the researcher and some belonging to the family. The child's standard scores were: PPVT-R, 92; Reynell Verbal Comprehension, 108, and Expressive Language, 94. The researcher had taken the parent-child language sample after a break in the middle of the assessment session. After playing with his mother, the child did not cooperate and the remainder of the Reynell could be completed. It was completed the next day at researcher's home.
Protocol notations on both days revealed excessive loudness during the child's spoken language, even when the researcher asked if he could talk softer because his voice hurt her ears. To check the relationship between the Reynell and the PLS-3, Child C also was tested with the latter on October 17, 1992 at his home. His standard score total was 106 with 102 in Auditory Comprehension and 108 in Expressive Communication. Again it was noted that he used an excessively loud voice and had some difficulty staying on task. Due to child illness and conflicting schedules, consultation with Mother C was limited.

SUMMARY OF FIELD STUDIES

Conclusions were reached after the field studies:

1) The assessment should be done at the Barkley Memorial Center with the PPVT-R followed by the new version of the PLS-3. The parent may be invited to watch through the one-way window after completing the Pre-test and Knowledge Base.

2) The parent should be asked to bring several familiar items, but additional play materials used at the Barkley Memorial Center and during the home videotaping should include researcher chosen stimuli for consistency.

3) The researcher developed Pre-test and Knowledge Base appear effective for initiating discussion during later consultation sessions.

4) Care needs to be exercised when initially explaining the study to the primary caregiver, particularly concerning the time commitment necessary.

5) The consultation period should be lengthened to three or four months to allow for scheduling problems.

6) Putting a microphone on the child should be considered not only due to possible unintelligibility, but also because of a child's softer voice.
APPENDIX F

WORKING DEFINITIONS
WORKING DEFINITIONS

Definitions used by the researcher in working with caregivers and in training coders.

Acknowledgements - adult accepting, reinforcing child utterances OR giving disapproval, null responses, or rejecting the child's utterances...mother's are more inclined to indicate acceptance when she understands what the child has said (confirmatory evidence) (Cross, 1984) See also backchannel and turnabout

Backchannel - acknowledges and/or encourages child to continue (i.e. head nods, 'uh huh", repetitions, expansions, (Duchan & Weitzer-Lin, 1987)

Child-initiated - (child-centered) the adult makes a change to meet the needs of the child rather than requiring the child to respond at some level of complexity predetermined by lesson plans or activity guides (McDade & Varnedoe, 1987; Norris & Hoffman, 1990)

Children who are not very intelligible - < 45% intelligible, > 55% unintelligible (Kaiser, et al., 1990)

Cloze procedures - similar to "filling in the blanks", usually done orally by an adult so the child can fill in the needed information. "Dolly, I will...your....so it will look...." Norris & Hoffman (1990)

Coaching - professional relationship that provides professional companionship, demonstration of new strategies, technical feedback, and analysis of application over time to a colleague (parent/PCG) in need (Marvin, 1990)

Steps: Knowledge/theory base
   Plus demonstration
   Plus practice/feedback
   Plus help developing a coaching plan (Showers, 1983)
Collaboration - voluntary interaction between professionals having a parity of knowledge and skills - the interactions are directed by a mutual philosophy, respect and goals with stated roles and responsibilities for a mutually agreed upon plan (Marvin, 1990)

Collaborative Consultation - an interactive process that enables teams of people with diverse expertise to generate creative solutions to mutually defined problems - includes the parity and mutual responsibilities implied in collaborative, and the implied eventual termination of the consultant's input (Marvin, 1990)

Comments - sometimes termed models, expatiations, and semantic extensions, are utterances that provide new semantic information regarding a previous utterance - Child: Daddy shoe - Mom might respond - Yes, (acknowledgement) that's daddy's shoe (expansion) It's a big shoe, isn't it? (comment) (McDade & Varneoe) - Of all the adult interactive behaviors, comments and expansions have been reported to be most closely linked to language growth (Barnes, Gutfreund, Satterly, & Wells, 1983) Marvin says comments take pressure off the child because the child doesn't have to respond unless they want to as opposed to a question.

Communicative acts - include all words, word approximations, conventional gestures (pointing, nodding, showing, head shaking), action responses, and solicited eye gaze responses that followed attention calls (Girolametto) see also turn and missed turn opportunity

Consultation - an indirect service that directly influences students/clients

Contingently responsive - the parent should describe what they are doing or what the child is doing, (be cohesive with the
previous utterance).

Declaratives - comments, can be used as an index of the amount of speech directed to the child which is positively associated with rate of language development (Cross, 1984)

Directives - convey the intent of a command, a demand on the listener to perform

Expansions - repeat the child's utterance using a higher level language (i.e. Child: Brush hair Adult: That's right, you need to brush your hair dolly) Norris & Hoffman; Scherer & Olswang, 1984, say that language-learning children are more likely to spontaneously imitate expanded utterances than any other form of adult verbalization. The adult listens to the child's incomplete or reduced utterance and expands it by adding relevant grammatical, semantic, and/or phonological details. (Hanrahan & Langlois, 1988). They are contingent verbal responses that repeat the child's prior utterance while adding relevant grammatical and, sometimes, semantic details (Fey, 1986).

Expatiations - involve the use of the child's utterance in a slightly different context with slightly different context (i.e. Child: Brush doll's hair Adult: brush your hair too and brush Jenny's hair) (Norris & Hoffman, 1990) The adult listens to the child's utterance and extends some aspect of the child's topic by adding relevant information (Hanrahan & Langlois, 1988) Contingent responses to the child's utterances that extend some aspect of the child's meaning by contributing some new, but relevant, information (Fey, 1986).

Expectant waiting - a less direct form to elicit child turn-taking, often used with puzzled looks (Duchan-Weitzner-Lin, 1987)

Extensions - add new ideas within the same topic, so that the play is extended to include new actions and events - Adult: Right,
we need to brush it and then put on her hat (Norris & Hoffman)

Facilitative interaction style - the adult allows sufficient time for the child to initiate and process, initiates less than one third of all topics, uses minimal direct questions to initiate topics, uses direct questions for no more than one fourth of topic continuation, questions for no more than one fourth of topic continuations, and uses requests for clarification when needed (Wetherby & Rodriguez, 1992, who quoted Miranda & Donnellan, 1986)

Following the child's lead - focus on the child's topic of interest to establish joint attention, this is reinforcing. A host of skills can be taught incidentally if the child is attending. (Jones & Warren, 1991) The three fundamental steps in child-oriented approaches are to wait for the child to initiate some behavior, to interpret that behavior as meaningful and communicative even if it was not so intended, and to respond to the behavior in some communicative manner that is assumed to facilitate language development (Fey, 1986).

Imperatives - sentences that command or control - found by Newport et al., (1977 and Cross, and Furrow et al., (1979) to be negatively associated with children's gains in syntactic development. (Cross, 1984) Example, "Stop that," "Close the window", these are the most straightforward form by which a speaker may request a service or prohibit an act. It can be embedded in an interrogative indirectly, "Can you close the window?" (Garrard, 1989). Garrard says there is not sufficient information to warrant an absolute statement that mothers' directives are detrimental to all children

Interactive model - incorporates naturalistic intervention approaches and techniques (Tannock & Girolametto, 1992)
Language - a socially shared code, or conventional system, that represents ideas through the use of arbitrary symbols and rules that govern combinations of these symbols (Bernstein, 1989)

Language Delayed - children with at least a five-word expressive vocabulary and an expressive or receptive language delay of at least eight months with respect to their C.A. (Kaiser, et al., 1990)

Limiting, controlling constraining - semantically they refer to a particular communicative exchange and should not be construed as necessarily always having a negative impact on language development. Limiting, didactic questions, may be used at early developmental levels to being certain to extend a child's response so there is cohesion of the conversation. (Garrard) Constituent questioning - questioning that specifies the type of information that needs to be provided, i.e. agents, action, objects, etc...includes Wh-questions..N&H

Limiting questions - can be questions with answers, tag questions, and leading questions that are controlling because they place boundaries on their partner's responses. Examples: Questions with answers, 1) question with informative answer - What's that, a cow? 2) question followed by directive -What does a cow say? say 'moo' 3) question followed by leading question - What's that? Is it a camel? Tag questions, these serve to maintain conversation and listener interest but are constraining because they encourage the listener to give either an affirmative or negative answer -That's a horse, right?, Do you have a dog, humm? Come inside, okay leading questions, speaker does not provide the answer, but predicts how the listener will respond yes-no question, Is that a dog? wh-question What's this? Incomplete sentence prompt This is a
...? summons question You know what we'll do? (Garrard, 1986; McDonald & Pien, 1982, Olsen-Fulero, 1982)

Mean Length of Longest Utterances (MLUL) - calculated on the five longest utterances occurring in the observation (Barnes, et al., 1983)

Mirroring - the adult observes and then reflects the child's nonverbal motor expression (Hanrahan & Langlois, 1988)

Modeling - adult provides a model for the child

  Postscript modeling - adult produces model after the child's production, by rephrasing and/or extending

  Cuing - adult provides model prior to the child's act based on what is thought to be the child's intent, using parallel talk, comment, label, or request (all Duchan & Weitzner-Lin, 1987)

Nonverbal responses - gazes, facial expressions, hand and body postures, and other gestures indicate reactions such as joint focus, agreement, and surprise (Norris & Hoffman, 1990)

Overlap - a segment of one speaking turn that occurs simultaneously with another...a simple error in transition timing

Owl - Observe, wait, and listen - Later adapt your position, repeat pleasurable routines, arouse your child's curiosity, tempt your child, imitate and interpret...Keep it Short, often and simple (S.O.S.) from the Hanen Early Language Program

Parallel talk - adult talks about what the child is doing from the child's perspective, also called modeled dialogue (Norris & Hoffman) The adult talks out the child's activity, what he is doing, during a joint or shared activity (Hanrahan & Langlois, 1988)

Questions, yes/no - use to focus on the child's interests, also high correlations to child's growth rates in using verbal auxiliaries, and verb phrases (Cross, 1984)

Rate - normal rate, evidence inconclusive (Cross, 1984) The normal
speaking rate has a range of about 115 to 165 words/minute or 162-230 syllables/minute with a mean of 196 (Peters & Guitar, p. 141)

Recast sentences - are really just a specific form of expansion. Instead of repeating the child's own sentence and filling in mission semantic and grammatical details, recast sentences change the basic sentence modality or voice of the original (i.e., "This dolly is sick" might be recast as an interrogative, "Isn't she sick?"). Active sentences like "The god is eating the weenie" can be recast into the passive voice "The weenie is being eaten by the dog." (Fey, 1986)

Reflecting - the adult listens to the child and repeats non-punitively what the child has said (Hanrahan & Langlois, 1988)

Refrigerator procedure - having parents record a list of all the different words the child says over a week's time. Can have two columns, one for the words and the other for the meaning intended by the child in using the word. (Miller, 1983)

Relational terms - specific types of prompts: additive (and...); temporal (and then, first); causal (because, so, since, so that); adversative (but, except); conditional (if, unless); spatial (in, next to) (Norris & Hoffman, 1990)

Repetitions - self repetitions can be appropriate or not depending on child's level and what type of repetitions are used...exact self-repetitions may impede child language growth (Cross, 1984)

Responsive Interaction - to enhance quality and richness of parent-child communication to stimulate child language development, it does not use verbal and nonverbal prompts - philosophy = "communication, and not correction, facilitates language growth" (Kaiser quoting Weiss, 1981)

Responsive Interaction content - Silence, Observation,
Understanding, Listening (SOUL); reaction strategies - vocal monitoring, expansion, mirroring; descriptive talk - parallel talk, self talk, on-topic modeling, latency, pausing and sustained attention, matching child's complexity level (Kaiser)

Request for clarification - asks for more specific information to clarify the message for the receiver (Norris & Hoffman)

Routines - familiar routines are good to use with the noninteractive child to promote interactions and turn-taking. The repeated exposure to the routine, in which the parent scaffolds the dialogue and the action, allows the reticent child to ease into participation by assuming first part and then more of the responsibility for carrying out the event. A routine is highly structured and invariable, contains repetitive cycles, is short and predictable, has reciprocal roles for participants (Duchan & Weitzner-Lin, 1987)

Scaffolding - consists of verbal and nonverbal prompts or other assistance provided by an adult to enable the child to communicate the expanded message...Brunner likens this to the scaffolding of a building that is later removed (Norris & Hoffman, 1990)

Self talk - The adult talks about the objects or actions from his/her own perspective; (Norris and Hoffman, 1990) The adult talks out his/her own participation during a joint activity with the child (Hanrahan and Langlois)

Semantic contingency - parent responds to nonverbal indications (gestures, gaze - as well as verbal utterances - regarding what the child has in mind at the time...positively associated with progress in a number of aspects of children's language development, particularly at the early stage when children first produce structured, multiword utterances (Cross, 1984;
Semantically contingent remarks - are direct responses to what the child said which are appropriate to the purpose and intent of the child's message (Norris & Hoffman, 1990); content of what the mother says depends upon what the child has just said or done or is in the process of doing (Duchan & Weitzner-Lin, 1987; Schiefelbusch, 1984).

Time Delay Procedure - adult assesses routines and steps of an activity the child often selects, but needs help doing. Adult notes when child is at the point when the adult usually needs to assist, but does not immediately assist, rather uses an exaggerated pause (raised eyebrows, quizzical look). Child responds or teacher provides least assistive prompt, etc. (Marvin, 1989) Also involves wait time for the child to respond in conversational situations.

Total Number of Words (TNW) - "Word" is defined by the presence of a blank character between valid alphanumeric entries. Numeric characters, i.e., 345, 232, etc. are counted as words. (Miller & Chapman, 1990)

True questions - sometimes termed "real" questions (McDonald & Pien, 1982; Olsen-Fulero, 1982) are not controlling. The listener may supply the requested information, provide more detail than requested, or reciprocally request information from the speaker. True questions seek information about which the speaker does not have a specific answer in mind. They may be either wh- questions or questions followed by yes or no responses if the speaker genuinely seeks that information. - What did you have for lunch? (Garrard, 1986)

Turn - one or more communicative acts (and accompanying nonverbal behaviors) emitted by one partner that were not separated by a
communicative act of the other partner or by a pause of more than 1 s. Continue — was assigned to all turns that acknowledged, commented, or elaborated on the partner's preceding activity or turn. Child: puts doll to bed Adult: Is the baby sleepy?; Child: baby sleepy, Adult: covers the baby, (offers a blanket) (Girolametto)

Turnabout — acceptance which includes new information, accept + question or comment. Turnabouts prevent "dead-end contracts" (MacDonald & Gilette, 1984) in which the exchange pattern ends after two turns as in a exchange (Duchan & Weitzer-Lin, 1987). Turn-taking cues — indicate that more information is warranted...might be repeating the child's utterance with an expectant pause, providing an acknowledging comment with rising intonation (Norris & Hoffman)

Turn-taking ratio — a measure of dyadic turn taking, the percentage of turns used in 10 minutes (Girolametto, 1988, Mahoney & Powell, 1988) also involved simultaneous turn taking (overlaps)

Type-Token Ratio (TTR) — Based on the ratio of the number of different word roots to the total number of words from the first 50 Complete and Intelligible Utterances. If a speaker has less than 50 Complete & Intelligible Utterances, TTR is based on the Complete & Intelligible Utterances.

Verbalization — Includes the child's expression of true words or word approximations (Rossetti, 1990).

Vocalization — Includes the child's production of sounds and sound combinations that are not true word attempts (Rossetti, 1990).
APPENDIX G

A. CODING RULES FOR
UTTERANCES/MORPHEME

B. TRANSCRIPTION RULES
CODING RULES/IDEAS

TURN-TAKING RATIO

A. Turn-taking as a frequency measure = a ratio based on the percentage of turns for each dyadic member in a 20 minute time segment.

1. Turn is "one or more communicative acts (and accompanying nonverbal behaviors) emitted by one partner that are not separated by a communicative act of the other partner or by a pause of more than 1 s" (1 s = 1 second of time, Girolametto, 1988b, p. 159).
   a. A Communicative Act is "An interactive behavior that consists of a gesture, vocalization, or verbalization that is directed toward the adult and that serves a communicative function" (Wetherby and Prizant (1993), in the Communication and Symbolic Behavior Scales examiner's manual).
   b. Turns can be verbal or non-verbal. If a turn by the child is only non-verbal, if needs to be marked [ct] [nv]. All child turns simply marked [ct] should have contained a verbal utterance containing some verbalization. Vocalizations are to be marked as [nv] unless they are used with a verbalization. Rossetti's definitions of the two terms are to be followed. "Verbalization includes the child's expression of true words or word approximations. Vocalization includes the child's production of sounds and sound combinations that are not true word attempts" (Rossetti, 1990, p 11). It is not necessary to mark non-ver. It is not necessary to mark non-verbal adult turns as [nv]. Just the [at] marking is enough.

Procedure: Mark script for Adult Turn [at] and Child Turn [ct] first. Figure ratio of child to primary caregiver by dividing the
child's turns by the PCG's turns. If the child's turns are higher, divide the PCG's turns by the child's turns. Then proceed to mark the independent variables that follow.

CONTINGENT RESPONSES - FOLLOWING THE CHILD'S LEAD

Following the child's lead (FCL) with semantic contingency is defined as an adult responding to a child's nonverbal indicators (e.g., gestures, gaze) as well as to verbal utterances.

The adult responds to what the child has said, is attending to, or presumably has in mind at the time. The child controls the topic. The adult focuses on the child's topic of interest to establish joint attention. The three fundamental steps in child-oriented approaches are to wait for the child to initiate some behavior, to interpret that behavior as meaningful and communicative even if it was not so intended, and to respond to the behavior in some communicative manner that is assumed to facilitate language development (Fey, 1986).

Comments, also called descriptions, models, or expatiations, are adult utterances that provide new semantic information regarding a child's previous utterance. Expatiations involve the use of the child's utterance in a slightly different context with slightly different context. Use of these devices is often incorporated in following the child's lead with responses and comments. The procedure would be to count frequencies of the following categories: (1) The adult responds contingently and follows the child's lead either verbally or nonverbally, (2) The PCG acknowledges child's topic of focus, but then redirects to another topic and/or PCG ignores child's lead.

Procedure: Figure the percentage of PCG turns in relations to the total number of adult turns [fcl]/[at].
SELF TALK AND PARALLEL TALK

Self talk - The adult talks out his/her own participation during a joint activity with the child. Example - "I'm building a long road. My cars can go on the road."

Parallel talk - The adult descriptively talks out the child's actions, usually during a joint or shared activity. The adult speaks in active terms from the child's perspective. Example - "Oh, you have Duplo blocks. You are using red, blue and yellow ones to build... You've built a long road for the car."

Procedure: Count frequency of Self Talk and Parallel Talk used by the adult. Divide [SPT] by the total adult turns [spt]/[at].

EXPANSIONS AND EXTENSIONS

Expansions repeat the child's utterance using a higher language level. The adult listens to a child's incomplete or reduced utterance and expands it by adding relevant grammatical, semantic, and/or phonological details or adds new ideas within the same topic so that the play is extended to include new actions and/or events. If a child said, "Kitty big," the mother might add, "The big kitty wants a bowl of milk."

Transformations are a specific form of expansion. Instead of repeating the child's own sentence and filling in mission semantic and grammatical details, recast sentences change the basic sentence modality or voice of the original (e.g., "This dolly is sick" might be recast as an interrogative, "Isn't she sick?"). Active sentences like "The dog is eating the weenie," can be recast into the passive voice "The weenie is being eaten by the dog." (Fey, 1986).

Extensions add new ideas within the same topic, so that the play is extended to include new actions and events. (e.g., Adult, "Right, we need to brush it and then put on her hat").

Extra thoughts...
An e/et cannot follow a child's nv turn, it must follow a verbal turn. On the other hand fcl can follow either a nv or v child turn. The PCG cannot extend or expand their own speech according to the above definition they have to E/ET the child's utterance.

**Procedure:** Count the number of expansions and extensions in the script and divide that total by the total adult turns [e/et]/[at].

**LIMITING OR TRUE QUESTIONS**

Limiting questions can be questions with answers, tag questions, and leading questions that are controlling because they place boundaries on their partner's responses. Examples: **Questions with answers,** 1) question with informative answer - What's that, a cow? 2) question followed by directive -What does a cow say? say 'moo' 3) question followed by leading question - What's that? Is it a camel? **Tag questions,** these serve to maintain conversation and listener interest but are constraining because they encourage the listener primarily to give either an affirmative or negative answer -That's a horse, right?, Do you have a dog, humm? Come inside, okay **leading questions,** speaker does not provide the answer, but predicts how the listener will respond **yes-no question,** Is that a dog? **wh-question** What's this? **Incomplete sentence prompt** This is a ...? **summons question** You know what we'll do? (Garrard, 1986; McDonald & Pien, 1982, Olsen-Fulero, 1982)

True questions, sometimes termed "real" questions are not considered controlling. The listener may supply the requested information, provide more detail than requested, or reciprocally request information from the speaker. True questions seek information about which the speaker does not have a specific answer in mind. They may be either wh- questions or questions followed by yes or no responses if the speaker genuinely seeks that information.

- Did you play with Susie's kitty today? Did Ms. Brown make hot dogs
for lunch? What did you have for lunch? (Garrard, 1986) Other examples are: "Did you have hot dogs for lunch at pre-school?" (asked by a mother who does not want to fix the same item for supper); "Did you see my new fishing hat?" (asked by the dad who has misplaced it).

Procedure: All PCG questions should be marked [at] and coded for question type with either a [oq] for open question or [cq] for closed question.

Note: All coding should follow the complete utterance and all codes that apply should be used. An example follows:

Adult - Set the table [at].
Child - Do I use the soup bowls [ct]?
Adult - Yes, use the pretty new soup bowls [at] [e/et].
Adult - Can you reach the good silverware [at] [oq].
Child - I think so [ct].
Adult - I see you are getting the silverware down [at] [spt].
Adult - I am getting the bowls down for you [at] [spt].
Child - Okay [ct].
Adult - {The adult is watching the child lick off a dirty spot on the silverware} What are you doing now [at] [cq].

= {child hangs his head} [ct] [nv].
Part B.

TRANSCRIPTION RULES

SALT Transcript-Entry Conventions Used

Highlights follow:

a. In general if you cannot understand a speaker's utterance after listening to it three times, consider it to be partly unintelligible or completely unintelligible. Use XXX for verbalizations and QQQ for vocalizations that are unintelligible.

b. Use : (colon) to end a speaker turn so that a three-utterance turn will not be interpreted as one utterance; and to indicate pause time.

c. Use = (equal) to signify pause time.

d. Use = or + for transcriber comment lines.

e. Use { } for comments within utterance,

f. Use * to indicate omission of a mandatory phoneme or syllable.

g. Use < > to indicate conversational overlaps.

i. Use ^ to indicate an utterance interrupted by the other speaker, and a > to indicate a paused turn by the speaker.

Note: Usually if a turn is not completed and it ends with a > or ^, the beginning of the rest of the turn on the next line will not be capitalized. This was done to aid in coding turn change.

j. Use { } for comments during transcript entry. If used on a separate line, it will be called a "nonverbal utterance"

k. End of entry punctuation marks are . ! ? ^ . Lines which begin with $ = : ; - are special character lines and do not require final punctuation.

l. Use - to indicate time.

m. Codes are entered within [ ]'s.

n. All morphemes were coded according to SALT Entry Conventions.
Appendix H

INSTITUTIONAL REVIEW BOARD
APPROVAL
LINCOLN PUBLIC SCHOOLS
APPROVAL
August 31, 1993

S. Jeanne Giles, M.S.
Special Education & Communication Disorders
318 Barkley Memorial Center
UNL 0738

IRB # 040-94-EX

TITLE OF PROTOCOL: Effecting Change by the Use of Consultative Coaching with the Primary Caregivers of Language Delayed Preschoolers

Dear Ms. Giles:

The IRB has reviewed your Exemption Information Form for the above-titled research project. According to the information provided this project is exempt under 45 CFR 46:101B. You are therefore authorized to begin the research.

It is understood this project will be conducted in full accordance with all applicable sections of the IRB Guidelines. It is also understood that the IRB will be immediately notified of any proposed changes that may affect the exempt status of your research project.

Sincerely,

Ernest D. Prentice, Ph.D.
Vice Chairman, IRB

EDP/abk
August 4, 1993

Ms. S. Jeanne Giles
301 Barkley Memorial Center
Lincoln, NE 68583-0738

RE: EFFECTIVE CHANGE BY THE USE OF CONSULTATIVE COACHING

Dear Ms. Giles:

Your request to conduct research in the Lincoln Public Schools is hereby approved. You are asked to coordinate your project with Mr. Tom Fortune in our Special Education Department.

Participation of staff and students is voluntary.

Sincerely,

William T. Workman
Assistant to the Superintendent

cc: Tom Fortune
Appendix I

SAMPLE CODED SCRIPTS

A. DYAD A Data Point 18
B. DYAD B Data Point 18
$ Doris Randy
+ Child, 3 years 8 months DOB 4-24-90
+ Intervention session Data Point 18
+ 1-15-94 at Barkley Memorial Center
+[FCL] following the child's lead
+[S&PT] self talk/parallel talk
+[OQ] open question
+[CQ] closed/limited question
+[E&ET] expansions/extensions
+[CT] child turn
+[AT] adult turn
+[V] verbal response
+[NV] nonverbal response

+ Interrater on script 99%
+ Interrater on utterance coding 98% 5-2-94
+ checked J. Giles 5-10-94 and 6-2-94

- 11:21

+ At the beginning of the tape Randy was making a game out of some
of the props we have just finished with on the PLS-3.

D And then the blue one [at]>
D that how they go [cq]?
R Umhum, they put 'em, make straight [ct].
D Oh all of them are handle/s when we cut that to be
  straight [at] [fcl] [e/et].
R Umhum [ct].
D I see, now I/'ll know how to do it [at] [fcl].
R <XXX> [ct].
D <All the handle/s> have to be even [at].
R {He was pounding} [ct] [nv].
D There they went [at] [fcl].
D Now I/'m gonna [at]^
R This thing {QQQ} [ct].
D All the handle/s have to be line/ed up in a row [at]>
D Is that right [at] [cq]?
R Umhum [ct].
D So they/'re all face/ing the same way [at].
R {tosses the ball} [ct] [nv].
D Oh, you really toss/ed that hard [at] [spt]!
- 11:22
R Yeah, but that book there [ct].
R {points to the toy tub} [ct] [nv].
D Do you want to play with those [at] [cq]?
R No, play with these {turning back to the ball and cups} [ct].
D Are these suppose/ed to be put the same way [at]?  
R No, but that one [ct]
D That one/’s a little crook/ed {adjusts it} [at] [fcl] [e/et].
R There we go [ct].
D There, you got them all the same way [at] [fcl] [e/et].
R {hit the cups by bowling with the ball} [ct] [nv].
D Oh wow, you about hit me with those [at] [fcl] [spt] [e/et].
R <Ha, big> wack [ct]!
D <Okay> real hard that one was [at] [fcl] [spt].
D Okay [at] [fcl].
R But why don’t you let me do it {takes over the building} [ct]?  
D I will let you do that [at] [fcl].
R {puts the cups in a tower} [ct] [nv].
D You make them real straight [at] [spt].
D They/’re not crook/ed [at].
R {knocks them down again} [ct] [nv].
D Whee [at] [fcl].
R A ball there [ct].
D I got the ball [at] [spt].
D You gonna put them up since you do such a good job [at] [cq]?  
R Yeah {starts rebuilding} [ct].
D First the yellow one, then the blue one [at] [fcl] [spt].
D The orange one [at] [fcl] [spt].
R {changes the cups around} [ct] [nv].
D Pink [at] [fcl] [spt].
D Yeah, see how good those are [at] [fcl] [spt].
D they/’re all nice and straight, they/’re not crook/ed [at] [fcl].
R {backs up to look around} [ct] [nv].
R We're missing one more {holds up one finger} [ct].
D No we have five [at] [fcl].
- 11:23
R {tosses the ball and misses} [ct] [nv].
D Missed that one [at] [fcl] [spt]!
D {She laughs} [at] [nv].
R {laughs, and tosses directly and knocks them down} [ct] [nv].
D {Catches the ball} Got them [at] [fcl] [spt].
R XXX back [ct].
D Whee [at] [fcl]>
R There you go [ct].
D You tossed them so hard, <you'll have> to chase them all over the floor [at] [spt].
R <No> {takes charge again} why don't ya let me do it [ct].
R Why don't ya let me do it that way [ct].
D You do a very good job [at] [spt].
R {keeps building} [ct] [nv].
D Red, orange, with the blue one [at] [fcl] [spt]>
D then you put the yellow one [at] [fcl] [spt]>
D and then the pink one [at] [fcl] [spt].
D That's sort of like a little tower made out of cup/s [at] [spt].
R And then this will <be the top> [ct].
D <There's sit/3s> the ball [at].
D That's the top of the tower [at] [fcl] [e/et].
R {tosses the ball} [ct] [nv].
D {Catches the ball} Missed that one [at] [spt]!
R {They laugh} [ct] [nv].
D {line above} [at] [nv].
R {knocks the cups down} [ct] [nv].
D Oh wow they hit me [at] [spt].
R XXX [ct].
D Not so hard they're gonna hit me [at]!
R But I didn't [ct].
D {puts a cup out} [at] [nv].
R No, why don't you let me do it [ct].
D I just line/ed them up for you [at] [spt]>
D that way you can put them all on top of each other.
- 11:24
R {builds} [ct] [nv].
D All those handle/s are real straight and even so when you hit them
    with the ball [at] [fcl] [spt]>
R {tosses the ball} [ct] [nv].
D they fly [at] [fcl]!
R Unhum, they go whooo whooo {demonstrates with his hand} [ct]!
D Okay, it's your turn to build them up again [at] [spt] [fcl].
R {notices Te and Ro are nearby} [ct] [nv].
R There Mommy and Rollin [ct].
D Oh they might be in another room somewhere wait/ing [at].
D Okay [at]? 
D They can't come in here cuz it's our turn to play [at] [spt].
D We're play/ing with these cup/s [at].
R {knocks them down} [ct] [nv].
D Wow, the yellow one went the farthest [at] [fcl] [spt].
D {pointing} See, that one went farther than the red one [at] [fcl] [spt].
D Are you go/ing to build them up [at] [oq]?
R {pulls out the top of the popoids} Look this goes with that {puts it on the popoids} XXX [ct].
D Look what I see in there today [at]!
D that looks awfully cute {trying to reach the doll}>
D can I see that Randy [cq]?
R Look [ct].
- 11:25
D That little doll with the blond hair [at].
R Look [ct].
R {shows her a boxed item} [ct] [nv].
R Mama [ct].
D {She looks at the box, but takes out the doll} Well we going to play with something like that [at] [cq]?
R It big [ct]!
D Well, look at this [at].
D That looks like a little boy doll [at].
R {moves it's arm} He can move [ct].
D He moves his arm/s [at] [spt]>
D and he move/s his leg/s [spt]>
D he/'s got a red shirt on that match/3s your red pant/s [spt].
R Umhum [ct].
D He/'s got jeans on and he/'s got blue eye/s like your blue eye/s [at] [spt].
R No, but I have red eye/s [ct].
D You have red eye/s [at] [fcl] [cq]?  
R Umhum, him don't [ct].
D He/'s got green pant/s on [at].  
R Umhum {pulls the shirt and pants apart more} [ct].
D Oh a swimming suit on I think [at].
R Yeah [ct].
D Umhum [at] [fcl].
R That right [ct].
R Mama we can dress him like this [ct].
D Yes, unhuh [at] [fcl].
R We could take everything off {starts to remove the doll's clothes} [ct].
D Well alright [at] [fcl].
D Would you like to dress him [at] [oq]?
D You'll have to lift his arm/s up just like you do when you take
   the shirt off [at] [spt].

   11:26
R {pushes the doll's arms up} XXX there we go [ct].
R There {he's working hard} (this) is [ct]>
D That's just like dress/ing Tamera [at] [fcl].
R Umhum [ct].
D Unhuh, you have to pull the shirt off of the arm/s [at] [spt].
R {keeps working at getting the doll's clothes off} [ct] [nv].
R Here [ct]!
D Off of the head [at].
D {points} Pull 'em off by the hand/s here [at].
D Grab his shirt hand/s so you can get them off of the arms, just
   like you take your/z off [at] [spt].
D Right here [at]>
R {keeps working} [ct] [nv].
D there ya go [at] [fcl].
D Can you get it [at] [oq]?
D Don't tear the shirt [at].
R {He's almost got the shirt off} [ct] [nv].
D You can/'t tear your when you get them off [at].
R %Ummm [ct].
D Let/'s pull it right here [at].
R %Ummm [ct].
D Here, pull it right here [at].
D See if the arm *ll come out of there now [at] [spt].
R {pulls hard} [ct] [nv].
D Oh my, there/'s one [at] [spt].
R Now mama do that one [ct].
D Okay {loosens part of the shirt} now can you get it off his head
or is his head too big [at] [fcl] [oq]? = {Someone opens and closes the door just as R finally gets it off}
D There [at]!
R There one thing [ct].
D Umhum [at] [fcl].
- 11:27
R Now him can put his arm down and him pant/s {starts to take the
pants off} [ct].
D Umhum [at] [fcl].
R Uh {works to get the clothes off} think it will like dress/ing
Tamara [ct].
D Yes it is {the pants are finally off} there [at] [fcl].
R Now him all like that [ct].
D Unhuh [at] [fcl].
D Now what do you think he/'s go/ing to do [at] [oq]?
R I don't know [ct].
D Huh [at] [oq]?
R I have straight/en him hair out [ct].
D Oh yes [at] [fcl].
R {finishes the doll's hair} [ct] [nv].
D {talking for doll to R} How are you, how are you [at] [cq]?
R {laughs} him do move him feet {experiments with the doll's legs}
[ct].
D He move/3s his leg/s to get your shirt [at] [fcl] [spt]>
D look/3s like he/'s go/ing to try walk/ing.
D Gonna stand on one leg [at] [fcl] [spt].
R Him <stand> [ct].
D <XXX XXX> [at].
D Oh he/'s balance/ing on one foot [at] [fcl] [spt]>
R Him stand XXX [ct].
D Just like you do sometime/s you balance on one foot [at] [fcl] [e/et]> - 11:28
D you pick one foot up and stand on the other foot.
R Look inside there [ct].
D Well what do you think that is in there [at] [oq]? R I don't know, can/'t come off [ct].
D Well look, it/'s his belly button [at].
R Umhum [ct].
D Unhuh {laughs} [at].
D Yeah [at]>
R Mama [ct]>
D You have one [at] [spt]!
R How about we change him back [ct]? D Should we get him dress/ed [at]>
D Does he need to get dress/ed again before he get/3s cold [at] [fcl] [cq]? D {hands R the doll's pants} there/'s his pants [spt].
R {tries a leg} Him have to put that feet down [ct].
D Oh we got to change his leg/s a little bit [at] [fcl] [e/et].
R Now help him to get them in the right feet [ct].
R {tries from another angle} I help him get them XXX on [ct].
D Guess they have to be in the right place [at] [fcl].
R Yeah that, I got mine in the right place [ct].
D Yes, when you get your/z on you have to put the right leg in the right place, and the left leg in the left place, don't ya [at] [e/et]>
- 11:29
D so they go on good.
D Cuz they both can/'t go in the same hole in your pants [at].
R {He's been working on the doll dressing} [ct] [nv].
D There's one foot {helping pull it out} [at] [fcl] [spt]!
R [ct] [nv].
D Now ya gotta get this foot in there [at] [fcl] [spt].
R [ct] [nv].
D Dressing baby/a are kinda hard sometime/s [at]!
R {stands the baby on its head} Umhum [ct].
D You have to stand them on their head/s [at] [spt].
R Yeah that how I get dress/ed [ct].
D Do you stand on your head sometime/s when you get dress/ed [at] [fcl] [cq]?
R Umhum, there we go [ct].
D There {getting the shirt} [at] [fcl] [spt].
R Got him head and [ct].
D Okay, this go/3s over his head [at] [fcl] [e/et].
R XXX now {holding the doll upright} mama put him suit on [ct].
D Going to be hard to do [at] [fcl] [cq]?
R {pulls} Yeah [ct].
D Get his pant/s pull/ed up real good [at] [cq] [spt]?
R Umhum [ct].
D Okay [at] [fcl].
R Him head can go right down, uh [ct].
- 11:30
D Okay, ya have to put one arm in this hole [at]>
D {holds his arm out} Can you do this [cq]?
R Yeah {keeps working on the doll's clothes} [ct].
D He does/n't bend his arm very well, does he [at] [cq]?
R Uhtum [ct].
D He does/n't have any elbow/s, there {one arm is in} [at] [spt].
R Uht, umhum and the other arm in this hole [ct].
R And baby/'s kinda hard to get dress/ed [ct].
D He/'s not help/ing you very well is he [at] [fcl] [cq]?
R Untum, we have to pull him shirt down [ct].
D Yes, in the front and the back [at] [fcl].
R {He is arranging the shirt} [ct] [nv].
D Is it pull/ed down the back good [at] [fcl] [cq]?
R Umhum, {turns it around to check} yep [ct]!
D Yep, his hair/’s kind a messy again too [at] [fcl].
D We made his hair messy [at] [spt].
R {starts to straighten the doll’s hair} [ct] [nv].
D There, you’/ve really made him pretty [at] [fcl] [spt].
D He sure is happy to play with you [at].
R Umhum [ct].
D What do you think that his name is [at] [oq]?
- 11:31
R I don’t know [ct].
D What would you call him [at] [oq]?
R Him either call him Wes, huh, uhuh, {QQQ QQQ QQQ} [ct].
D Does he stand on his head [at] [cq]?
R Umhum [ct].
D See shirt/’s the same color as your pants [at].
R Umhum, him cup hand {gives the doll a cup} [ct].
D He/’s got a cup hand [at] [fcl] [e/et].
R {puts a cup in the other hand} [ct] [nv].
D Maybe he can hold the cup and drink [at] [e/et].
D Think he can [fcl]? 
R {turns the doll right side up again to give him a drink} maybe [ct].
D Whoops does that one work [at] [fcl] [cq]?
R {keeps working on getting the doll to hold the cups} [ct] [nv].
D There, he/’s hold/ing two cup/s [at] [fcl] [spt].
R Umhum, him look/ing something to drink [ct].
D He/’s look/ing for something to drink [at] [fcl] [e/et].
R Whoop [ct].
D I'll bet he had Pepsi in that cup [at] [e/et].
- 11:32
R I'm gonna change him back [ct].
D Okay [at] [fcl].
R Get him, his dressing XXX [ct].
R [starts shaking the pants off] [ct] [nv].
D You're shaking him awfully hard to get them pants off [at] [fcl] [spt].
R Umhum [ct].
R They're wiggle/ing [ct].
D I'll catch him, there [at] [fcl] [spt].
R There him pants [shakes out the pants] [ct].
R Then him shirt [starts on the shirt] [ct].
R Lift arm/s up [ct].
D Lift you're arm/s up [at] [fcl] [spt].
D He has to have his arm/s up to get that shirt off [at] [fcl].
R [He is working hard on the shirt removal] [ct] [nv].
D You have to get his finger/s out of there [at] [fcl] [spt].
R [keeps working] [ct] [nv].
D He does/n't move his elbow/s [at].
R Him have no elbow/s [ct].
- 11:33
D They don't move like your elbow/s [at] [fcl].
R But we have elbow/s [ct].
D Yes, we have elbow/s right here [touching his elbow] but his arm
does/n't move like that [at] [fcl] [e/et].
R Here, [hands her the shirt to hold on to] and I'll take him head
off [ct].
D Okay [at] [fcl].
R [finally gets it off] It all messy again [ct].
R {starts straightening the hair} [ct] [nv].
D It sure is [at] [fcl].
D When we take his shirt off, we really mess his hair [at] [fcl] [e/et].
R What is here [ct]?
D Well look and see [at] [fcl].
R {pulls the swim suit down} Belly button [ct].
D A belly button {laughs} [at] [fcl] [e/et].
R Mama, a him like this and sometimes [ct].
R {turns the doll over to swim} [ct] [nv].
D Well, he'/s swimming [at] [fcl] [spt].
D Can he swim [at] [fcl] [cq]?
D Show me how he can swim [at] [fcl].
R {does} [ct] [nv].
D That'/s right he has to move his arm/s [at] [fcl] [spt].
R Want Mama do it [ct].
D And he has to kick his feet too like this Randy when you swim [at] [e/et].
R {takes the doll again} I will do the arm/s [ct].
D And I'/ll do the feet [at] [fcl] [spt].
D Okay, now he'/s really swimming [at] [fcl].

- 11:34
R Him all wet [ct].
D All wet [at] [fcl].
R Now him better get some dry clothes on [ct].
D Okay [at] [fcl].
R This is <him pants> so [ct]>
D <Umhum>[at] [fcl].
R {starts pulling pants up} Uh, uh [ct].
R Too, something kinda hard to get dress/ed [ct].
D Yes, some baby/s are [at] [fcl].
R But him, him is'n't real [ct].
D No he'/s not real, just a doll [at] [fcl] [e/et].
R Hmm {finishes pants} now and um up {pushes arms up} [ct].
R Arm have to be up {pulls the pants up even further} [ct].
- 11:35
R Uh, uh it have to be pull/ed up again [ct].
R {keeps pulling} Uh, there we go {stands doll up} [ct]!
D Very good [at] [fcl].
D Shall we just leave the shirt off for awhile [at] [cq]? 
R No on, I got 'em {fools around with the hair} the [ct]>
D That hair'/s nice and soft, is/n't it [at] [fcl] [cq]? 
R And put him shirt right on while it messy [ct].
D Put his shirt on while it'/s messy cuz were gonna get his hair
    messy when we put his shirt on [at] [fcl] [spt] [cq] [e/et]?
D Maybe you'/ll fix his hair later [at].
R Uhh, uhh {really pulls hard on the shirt} [ct].
D Whoop, we drop/ed him [at] [fcl] [spt].
R {laughs and gets the doll} But I pick/ed him up [ct].
D Yes [at] [fcl]>
D Here'/s a (here'/s a) sleeve where the arm go/3s [at] [spt]>
- 11:36
D we have to twist it just a little bit, there.
R {tries to get the arm in} Unh [ct].
D It go/3s right in here [at] [fcl]>
D in that sleeve hole [at].
R Unh [ct]!
D Shirt/s are awfully hard [at].
R Unh yep [ct].
R {works} Unh [ct].
D {helps} gotta find this sleeve hole [at] [spt] [fcl].
R Unh {they both are trying to get the arm in} [ct].
D Can you get his arm moved around there so he can get it in that sleeve hole? [cq]?

R Unh [backs up].

D Okay, I think you can do it now [spt].

D You pull that down [fcl] [spt].

R [wrestles the shirt down] I like that.

R [smooths the shirt down] I like it.

D He's nice looking now, and he's warm.

R Umhum.

D Umhum.

R And this {pointing to the swimming suit} is wet.

D Oh his swimming suit's still wet, but he put clothes over his swimming suit.

R Umhum.

D Okay.

- 11:37

R And I'll like this.

D [finds the hat] His hat.

R [puts hat on] Hump, hump! I put it on backward.

D You put it on backward [fcl] [spt] [e/et].

R Hump [stands the dressed doll up and grins at it].

D There [spt].

R [watch the tongue, that means concentration for R] That his hat!

D He sure looks nice.

R Him want him hat, and him [turns hat], whoops.

D You going to turn the hat around to help? [fcl] [spt].

D Here put it on that way.

D You can still see him [cq]?

R Umhum [shows her].

D There you fixed it just fine.
R Unh, {drops doll} whoop [ct]!
R {knocks the doll against the floor and flips hat off} Him don't want no hat [ct].
D Okay, I'll take the hat off and put it back in there [at] [fcl].
R Umhum {see popoid lid} and him's gonna wear this hat {puts the lid on the doll's head} [ct].
D Oh that's a funny hat [at] [spt].
D That look's like a lid to the popoids [at].
R Whoops, ha ha, here come him {spanks doll} [ct].
- 11:38
R Again {spanks doll} see {pulls down pants to show swimming suit} [ct].
= {D pats the doll's bottom}
R And I'll show you what 'em, in back [ct].
R Him got a {shows the crack in the doll's butt} [ct].
D XXX XXX yeah {she was having a time keeping a straight face} umhum [at] [fcl].
R I pull my pant/s down to go pee [ct].
D Unhuh [at] [fcl].
R Unhum [ct].
R Maybe him need his hat [ct].
D You gonna put his hat back on him now [at] [fcl] [spt].
R {puts the hat on the doll} [ct] [nv].
D Now he's all dress/ed up to go out in the cold [at] [spt]>
D he's got his hat on.
R Umhum, him go/ing right in there [ct].
D Go/ing, you're go/ing to put him in the popoids [at] [fcl] [spt] [e/et].
R {scrunches the doll in the popoids} Him does XXX [ct].
R Maybe, (maybe) I'll all him stuff can [ct].
R I can with {does something with the popoids} [ct]>
Here, he's going to walk to me, then he's going to go walk to you [at] [fcl].

There he comes [at]!

Him hat come {hides the hat} [ct].

- 11:39

Him hat gonna hide [ct].

Randy [at]>

Him have to hide [ct].

he's walking to you [at].

{Giggles and takes the doll} [ct] [nv].

{laughs} Walk to grandma [at] [fcl] [spt].

{walks the doll to grandma} [ct] [nv].

Wow, very good {turns the doll around} [at] [spt].

Here he comes, back to you [at] [spt].

Hum, hum, hump, hump, hum woo [at].

{giggles and turns him around again} [ct].

Randy's gonna walk him to grandma, here he comes [at] [fcl] [spt]!

Randy's making him walk [at] [spt].

{gets him over to grandma} [ct].

He got me [at] [fcl]!

Umhummmm [ct].

turns doll around again and straightens his clothes} [at] [nv].

Look {points to the doll's tummy} [ct].

His tummy's showing, the tummy is showing {tucks the shirt down} [at] [fcl] [spt].

Yeow [ct].

Walking to Randy [at] [spt]>

{gets his hands ready} [ct] [nv].

gonna walk to Randy [at] [spt].

Got you Randy {tickles R} [at].
R {Giggles} [ct].

- 11:40

d {takes doll back to walk and tickle R again} He/’s walk/ing to
  Randy, {QQQ QQQ QQQ} [at] [spt].

R {gets doll and falls back} [ct] [nv].

R I fell, I got him [ct]!

D Yes [at] [fcl].

R {Getting up} Mama make me fell [ct].

D Okay, gonna walk to grandma now [at] [cq]?

R It have to go in there {picks up a popoid} [ct].

D Okay [at] [fcl].

R {starts walking the doll} [ct] [nv].

D Walk to grandma [at] [fcl] [spt]>

D Randy/’s gonna make him walk to grandma [at] [fcl] [spt].

R {He’s getting there} [ct] [nv].

D Walk, walk, walk, come on, got me [at] [fcl] [spt]!

R Unh [ct]!

D He’/s go/ing to run to Randy [at] [spt].

R {giggles} [ct].

D He runs [at] [spt]~

R {giggles} <I did/n’t see> him [ct]~

D <you want to see him run again> real fast [at] [cq] [e/et]?}

R {giggles} XXX that {gets doll and runs it to D} [ct].

D Oh you XXX XXX you flew almost to grandma [at] [fcl] [spt].

D You made him fly over here [at] [fcl] [spt]>

D his feet were/n’t even touching the ground, he was fly/ing [fcl]
  [spt].

R Now walk [ct].

R {demonstrates with his hands} [ct] [nv].

D Just walk [at] [fcl] [cq]?

R Unhum [ct].
D Just walk grandma to make him to walk slow [at] [spt].
R Unhum [ct].
R If I say go, them him run [ct].
- 11:41
+ Coder A's data turned in on 3-24-94
$ Mother Kyle
+ Child, 3 years 9 months DOB 7-13-90
+ Follow-up Session - Data Point 18
+ 4-22-94 at the Barkley Memorial Center
+[FCL] following the child's lead
+[S&PT] self talk/parallel talk
+[OQ] open question
+[CQ] closed/limited question
+[E&ET] expansions/extensions
+[CT] child turn
+[AT] adult turn
+[V] verbal response
+[NV] nonverbal response

+ Transcript interrater = 99%, utterance coding interrater = 98%
+ Checked J Giles 5-17-94

- 3:59 {the time is really 4:59, I didn't switch the camera for daylight savings time yet}

= {They are getting organized with my Sesame Street Farm set}

M Let's put the rest of the stuff up here [at]

M Let's put it all <up here> [at].

K The other way {puts it up} [ct].

M The tractor [at] [fcl] [cq]?

K Eeeeee Eeeeee {he's bringing a horse up the table leg and making it's noise} [ct] [nv].

M {takes it} And the horse [at].

K Beep beep beep beep {another animal arrives} [ct].

M I see Big Bird {takes him} [at] [spt]!

M I wonder what happen/ed to Ernie [at].

K {grinning, brings up another figure} [ct] [nv].

- 4:00

M Huh, that's Burt [at] [fcl].

K {he's slowly sneaking up another figure, his "huh" gasp is actually between her next three words} [ct] [nv].

M Huh, there's < > Ernie [at] [fcl].

K <Huh> Oink oink {he is making pig noises} [ct].

M Kyle's got a pig [at] [fcl] [spt].

K {QQQ} {This animal must be dangerous} [ct] [nv]!

M An alligator {it's really a baby dinosaur, but Pam takes it and
sets it in the farm yard} [at] [cq]?

K Fence {brings it up} [ct]!

M You do have the fence Kyle {they start to arrange it} [at] [fcl]

[spt].

K Mommy [ct].

M It looks like we need more fence Kyle [at].

K {he turns to get some more} Some [ct].

M Oh thank you Kyle [at] [fcl].

K Mom tractor {he bring the tractor up} [ct].

M Tractor, thank you [at] [e/et] [fcl].

- 4:01

K Mom {holding up the box} [ct].

M Is the box empty now [at] [cq] [fcl]?

K Nope {gets some more items} [ct].

M Nope [at].

K {places a car on the table} [ct] [nv].

M Huh [at] [nv]!

K Where go [ct]?

M You got the car [at] [fcl] [spt].

K Me go, outside [ct].

M Where you go/ing [at] [fcl] [oq]?

K Ah, out [ct]!

M Out where [at]?

K Outside [ct].

M Outside [at] [e/et].

K XXX XXX [ct].

M Will you be back today [at] [cq]?

K {he's working to get a vehicle out of the barn area} Yuh [ct].

M How soon will you be back [at] [oq]?

K {QQQ} {walks Big Bird back over to the barnyard} [ct] [nv].

M You're back right away [at] [spt].
K Gosh, gosh, my truck {takes the tractor and the cart} [ct].
M And the tractor [at] [fcl] [cq]?
K Yep [ct].
M And the cart [at] [cq]?
K Unhum {he's working to hook the cart to the tractor} [ct].
- 4:02
K Hum XXX {he's lost something} Mom a shoe {looks for something} [ct].
M Burt'/s got those funny socks on [at]>
K {he's distracted from his search and takes Burt, but sits him down} [ct] [nv].
M and that {pointing} [at].
K Go [ct]!
M Now where you gonna go [at] [fcl] [oq]?
K Hunt cow [ct]!
M Hunt the cow/s [at] [e/et] [cq]?  
K Eat [ct]!
M What'/s gonna eat [at] [e/et] [cq]?
K {digs in the box for the food} Hay [ct].
M Hay, the cow'/s gonna eat hay [at] [e/et] [cq]?
K Yeah, two hay/s [ct].
M Two hay/s, I only see one hay Kyle [at] [spt].
K {he goes to the box and finds some more hay} [ct] [nv].
- 4:03
M Huh {She takes the hay and starts to count} one {hooks it on the winch} [at]>
K Mommy XXX {puts something in the barn hay loft} [ct].
M {hooks the second one on} two hay/s [at] [fcl].
M Mom put two hay/s on the {turns the winch} crank, on the winch [at] [spt].
K Eat {puts an animal in to eat} [ct].
M And I can take it <upstairs> [at] [spt].
K <{QQQ}> {eating noise} [ct] [nv].
M The dog/’s eat/ing the hay Kyle [at] [fcl] [spt].
K {He’s working in the hay loft} Mommy need down {then he turns the
  crank himself} [ct].
M You/’re turn/ing it down [at] [fcl] [spt] [e/et].
K Moo {makes the cow jump over the fence} [ct].
M The cow jump/ed the fence [at] [spt] [fcl].
K {pulls the hay on the winch rope closer to the cow} [ct] [nv].
M Careful, don’t ya break it [at].
K {moves cow a bit closer} Food [ct].
K Um {puts the horse halfway over the fence} Heeee Heeee [ct].
M That poor horse [at] [fcl].
M Burt/’s gonna help him [at]>
M oh oh {as Burt knocks the fence down}. K
K Me hay cow {starts to move his cow} [ct].
M Well let/’s open up the fence {starts to open it} [at] [spt].
K Help {he just has an animal jump the fence} [ct].
M The cow help/ed the horse [at] [fcl] [e/et] [cq] [spt]? K
K XXX XXX Ahh neeee [ct].
M {takes Burt or Ernie out of the fence to talk while K is getting a
car with Big Bird in it} [at] [nv].
K [ct] [nv] {line above}. M
M Big Bird, Big Bird [at] [fcl]>
K Mmmm {driving noises} [ct] [nv].
M where are you go/ing Big Bird [at] [oq]? K
K Go go home [ct].
M You/’re go/ing where [at] [oq] [fcl]? K
K Uhuh XXX [ct].
M To get the cow/’s some juice to drink [at] [cq]? K
- 4:05
K {___ ___ ___} {a variety of driving sounds as he comes back and unloads} [ct] [nv].

M Where did you get that at, Burt, Ernie, Big Bird [at] [fcl] [oq]?

M Where did you get the milk [at] [oq]?

K At my place [ct].

M At your place [at] [cq] [fcl]?

K Yep [ct].

M Wow [at]!

M Do you milk cow/s at your place [at] [cq]?

K Yep [ct].

M How many cow/s do you have [at] [oq]?

K {holds up five fingers, but picks up Big Bird and says} three [ct].

M Three cow/s [at] [e/et] [cq] [fcl]?

K Yes [ct].

M What color a cow/s do you have {as she handles a cow} [at] [oq]?

K This [ct].

M Just like this one [at] [e/et] [cq]?

K Yep [ct].

M Or do you have a different color [at] [cq]?

K Cow [ct]!

M Just {pause} you can/’t take my cow/s [at] [fcl].

K {he starts to drive away with the cow} [ct] [nv].

M Big Bird, you can/’t take my cow [at] [fcl].

- 4:06

K {he takes them over to the yellow cart, the horse whinnies} Eeeee [ct] [nv].

M Big Bird that/’s my cow [at] [spt].

K No me cow [ct]!

M No no Big Bird [at].

K Yes am me, and me [ct].
M Are you just gonna borrow my cow [at]?
K Yuh [ct].
M Oh, okay [at]>
M You'll bring him back tomorrow [at] [cq]?
K Yeah {he's working on transportation during this whole episode} [ct].
M Can you feed him tonight [at] [cq]?
K Yeah [ct].
M And give him plenty of water [at] [cq]?
K Yeah [ct].
M See ya tomorrow [at].
K Cow, cow hay {QQQ} {he has the hay square too} [ct].
K {walks cow over to M} Cow hay bong [ct]!
M Huh ah [at]!
K Cow hay [ct]!
M Oh you got some hay for the cow [at] [fcl] [e/et].
K Eat [ct].
M Did you get that at your place or for my place [at] [cq]?
K Your/z [ct].
M My place [at] [cq]?
- 4:07
K Yep [ct].
M Well what are you go/ing to do with my hay [at] [cq]?
K Feed cow [ct].
M You're gonna feed the cow [at] [cq] [fcl] [e/et]?
K Yuh [ct].
M Don't you have hay at your place [at] [cq]?
K No [ct].
K Up us pee okay [ct]?
M Okay [at].
K Ah and up {he wants the cow up} [ct].
M You gonna take the cow up [at] [fcl] [spt] [e/et].
K {uses the winch to try to put the cow up but the cow falls} [ct] [nv].
M He fell down Kyle [at].
K {He's trying to hook the cow securely} [ct] [nv].
M Mom turn it up {she turns while he holds the cow on the cable} [at] [spt]?
M We'll work together [at].
K Pee pee pee pee pee {this is his newest favorite word} [ct].
- 4:08
K No [ct]>
K Ernie unhook fence, oh {starts working on the fence} [ct]!
M Big Bird, I seem to be missing my horse [at]>
M have you seen him around [at] [cq]?
K Yeah, yep [ct].
M Did you take him to your place again [at] [cq]?
K Nope [ct].
M Oh good [at].
K {has her horse behind the barn} [ct] [nv].
M Oh there he is {brings the horse over} [at].
K Cow {puts the cow in the hay loft} [ct]!
M {walks a figure over} You silly animal/s [at].
K Eeeeee {the horse whinnies again, K puts more animals in the hay loft} [ct] [nv].
M They don't go up there Kyle [at] [fcl].
K Yeah huh {puts more up} [ct].
M {she laughs at him} they'll fall down [at].
K {adds more} Uhhh my mom, mommy [ct].
M Can I have my puppy [at] [cq]?
- 4:09
K {takes an animal (maybe the puppy) that she has been walking
around} Mamma stairs [ct].

M Upstairs [at] [fcl] [cq] [e/et]?

K Yeah [ct].

M That's the hay loft [at] [spt].

K {works the winch and then gets her hand out of his way} [ct] [nv].

K Mommy us {he might switch here and turn it the other way} [ct].

M You're lower/ing the hook [at] [fcl] [spt]>

M now you're take/ing it up [at] [spt].

K Mommy, up in [ct].

M Up in, you're gonna put it up in there {points} [at] [e/et] [fcl] [cq]?

K {turns in down and she straightens it} [ct] [nv].

M It's down [at].

K {grabs a cow and hooks him on} Cow [ct]!

K {sums another in} Cow/s cow [ct]>

K 'em hide [ct].

- 4:10

M Burt's call/ing his animal/s [at] [spt].

K Hide, am hide [ct].

M They're hide/ing [at] [fcl] [e/et].

K Yeah [ct].

M From Burt [at] [cq]?

M When do they think Burt's gonna get them [at] [oq]?

K No Ernie [ct].

M Oh Ernie's go/ing to get them [at] [fcl] [e/et].

M Well what's Ernie go/ing to do with them [at] [oq]?

K Yeah, {QQQ} {finds the horse and runs it away} eeee eeee [ct] [nv].

M Horse run/ing away [at] [fcl] [spt]?

K Yep [ct].

M What about the pig/s [at] [oq]?
K Eeeee eeeee {runs back and up on the roof} [ct] [nv].
M The pig/s come out the front door {she runs the pigs around too}
   [at] [spt].
K Mom no [ct].
M Oh look at the pig, he/’s hide/ing {puts the pig on his side in
   the pen} [at] [spt].
K {puts the horse in the pen to hide} him me too [ct].
M Oh oh here come/3s the cow [at] [spt].
M Where/’s the cow gonna hide [at] [oq]?  
K {grabs the cow and puts him down} house [ct]!  
M {takes the cart and turn it over} Here, let him hide in here [at]
   [spt].
M here put the cart, have him hide behind there [at].
K No {looks} [ct].
   - 4:11
M Ooo I don’t like <the cowboys> {holds up the cowboy} [at] [spt].  
K {grabs the cowboy} <Huh> {puts the cowboy by the cow} [ct] [nv].
M Oh oh here come/3s the <sheep> [at] [spt].
K Ooo [ct].
M Here come/3s the sheep [at].
M Here come/3s the sheep, where/’s he gonna hide {bouncing on the
   table} [at] [oq]?
K <Ooo> [ct].
M Oh where/’s he gonna hide [at] [oq]?
K Mommy dead {holding up the cow who apparently was on his side}
   [ct].
M What happen/ed to the cow [at] [oq] [fcl]?
K Shot {holding up the cowboy who has a gun} [ct].
M The cowboy shot him [at] [cq] [e/et]?  
K Yep [ct].
M And the cow/’s [at]
K XXX [ct].
M Does that mean dead [at] [cq]?
K Umhum [ct].
M That naughty cowboy [at]?
M Are we gonna have a funeral for the cow [at] [cq]?
K Yep [ct].
M Okay [at].
K Oh oh cow, XXX [ct]!
M We better put the cow in here [in the pen] [at].
K Mommy dead {holding up the cowboy who is dead now too} [ct].
M Is the cowboy gone now [at] [fcl] [cq]?
K Yep [ct].
M Okay [at].
M We better have all the animal/s come to his funeral you think {moving other animals into the pen} [at] [cq].
M Where/'s the other sheep [at] [oq]?
- 4:12
M {taking some out of the hay loft} Kyle/'s got more animal/s in here [at] [spt].
K In, let me {reaching into the barn} [ct].
K Eeeee {takes an animal out, closes the barn, but drops an animal} [ct] [nv].
M Oh oh everybody/'s here [at]>
M Where/'s Big Bird [at] [oq]?
K {shows her where Big Bird was} [ct] [nv].
M Oh there he is [at] [fcl].
K {puts some more animals in the pen} [ct] [nv].
M Okay, everybody/'s here for the funeral [at] [spt]>
M How about the cow that died [at] [cq]?
K No [ct]!
M No [at]?
K {K reaches down to get two cowboys and makes them fight} Hah hah [ct]!

M But everybody came for the funeral [at].

K Ow, ow {The cowboys hit each other} [ct].

M The cow/'s all better [at] [cq]?

K No {puts three items on the table} Hah hah ha [ct]!

M Well if the cow/'s all better, we better get back to our chore/s [at].

K Ow, hi [ct]!

M Big Bird we have hay to put up in the loft [at].

K Yeah [ct].

M Can you help me [at] [cq]?

- 4:13

K Yeah [ct]>

K no cow [ct].

M You/'ve got to take care of the cow [at] [fcl] [cq] [e/et]?

K Yeah [ct].

M How 'bout you Ernie, can you help me with the hay [at] [cq]?

K {Puts the cow with the hay} [ct] [nv].

M The cow/'s gonna help me with the hay [at] [cq] [fcl]?

K Yep [ct].

M We need to put it up in the loft [at].

K Uhuh us [ct].

M Up in the loft {repeated slower} [at] [e/et].

K {puts the cow and the hay together in the pen with the command} Eat [ct].

K {some of the fenced animals were getting too close to the table edge and M was trying to get them back on it} Help, help {they're falling out} [ct]>

M Oh {as she moves the pen back} [at] [fcl].

K Help mommy [ct].
M Where's Ernie, Big Bird let me help you [at] [fcl]!
M {she knocks Big Bird down} Oh, oh oh are you alright Big Bird [at] [cq]?
K {takes the cow down to rescue him} Me [ct].
M Are you okay [at] [cq]?
K Me [ct].
- 4:14
M Big Bird, are you okay [at] [cq]?
K Yep [ct].
M That cow take care of you [at] [cq]?
K Mommy {bends down, then holds his foot up} shoe tie [ct].
M Shoe tie/ed [at] [fcl] [e/et] [cq]?
K Umhum [ct].
M {ties his shoe} [at] [nv].
K {tells Jeanne} Mommy tie [ct].
M Mommy tie/s your shoe [at] [ept] [e/et].
K Umhum [ct].
M But Kyle put/3s his shoe/s on [at].
K {sees that the big camcorder is there and goes to put the lens cap on} [ct] [nv].
+ This kid is fascinated with machinery.
M Comere [at].
K It no on [ct].
M Not on, okay [at] [fcl] [e/et].
K No [ct].
K {counting} One two, oh cow [ct]!
M Huh {gets an animal to talk} what happen/ed Burt [at] [cq]? 
K {takes the animal down} XXX [ct].
M {another animal says} Do you need some help cow [at] [fcl] [cq]?
K Yep I XXX [ct].
- 4:15

K {picks up all the animals and Burt} Ah XXX XXX [ct].
M Kyle {holding two lambs} you know these lamb/s are twin/s [at].
K Twin/s [ct]?
M Twin/s, they/’re just alike [at] [e/et]>
K {takes the lambs} alike [ct]>
M twin/s [at].
K {hops them over to the car} go [ct]!
M Are they baby/s, twin/s [at] [cq]?
K {Fingers some more animals} Go [ct]!
M Well Kyle, these two are alike [at]>
K {drives} {QQQ} [ct] [nv].
M that mean/3s they/’re twin/s [at].
K Oop [ct].
M Kyle, these are alike [at].
M Does that mean they are twin/s too [at] [cq]?  
K Umhuh [ct].
M Yeah [at].
K {he is going over to look at something else} [ct] [nv].
- 4:16

M Comere Kyle [at].
M Huh, oh oh the cow fell off [at]!
M Oh oh huh.
K {runs back to help} [ct] [nv].
M Who/’s gonna help [at] [cq]?  
K Horsie [ct].
M Ernie, Burt, who [at] [cq]?
K No horsie {shows her} [ct]!
M Oh the horsie [at] [fcl] [e/et].
K Eeeeeee {horse to the rescue} [ct].
M Oh mom was worry/ed [at] [spt].
K (he looking at the cow) [ct] [nv].
M The cow look/3s fine [at].
K (puts the cow and another animal back in the pen) [ct] [nv].
M Oh good thing we had the horse [at].
M Ooo Mr. Cowboy [at] [fcl].
K Ooo (he has one cowboy shoot the other cowboy) [ct]!
M He shot him [at] [spt].
K Umhum this [ct].
M Is he gone [at] [cq]?
K Yep this [ct].
M Is he sick [at] [cq]?
K Umhum [ct].
M Okay [at].
M Should we take him to the hospital do you think [at] [cq]?
K Umhum Mommy XXX this [ct]!
- 4:17
M Open the door [at] [cq] [fcl]?  
K (drives the car to the hospital) Um yeah [ct].
M Kyle/’s got the twin sheep [at] [fcl] [spt].
K Look, look, look (moves the figure into the pen) [ct].
M Burt/’s not feelin’ good [at] [spt].
K (puts Burt in the tractor) [ct] [nv].
M Can you gonna take him to the doctor [at] [cq]?
K (starts to drive) Yeah Mom this [ct].
M Okay [at]>
M drive careful [at].
K (runs into something) XXX XXX [ct].
M Fell over [at]>
M Shut the door/s [at].
= {They shut the barn doors}.
M {talking for a figure} Big Bird do you need help [at] [cq]?
K Nope [ct].
M Call me when you know how he is do/ing, okay [at] [cq]?
K Okay {drives behind the barn} [ct].
M {walks her figure around the other side} Are ya there yet Burt Bird [at] [cq]?
- 4:18
K No [ct].
M {walks figure back} Okay [at].
M Boy I hope Burt/'s okay [at].
K {gets down on his knees and look in the barn} XXX XXX [ct].
M {opens and closes the barn door} [at] [nv].
K Come shut XXX XXX [ct].
K {sees and picks up the tape recorder} XXX Jeanne/'s/z [ct].
M Knock knock {knocks with hand} knock knock {knocks with hand}
   knock knock [at]!
K {comes back to the barn, looks through, and laughs} [ct] [nv].
M Is Burt there [at] [cq]?
K Yeah [ct].
M Is Burt here [at] [cq]?
K Yeah [ct].
M How/’s he doin’ [at] [cq]?
K Bump [ct].
M Is he feelin’ better [at] [cq]?
K Yep [ct].
M I was wonderin’ if he could come over to my farm [at] [spt].
K {he has some animals/people in the barn} Ahhh [ct] [nv]!
M {gets tired of waiting at the door and closes it} [at] [nv].
K XXX XXX XXX [ct].
- 4:19
M {starts putting hay in the hay loft} [at] [nv].
K Oh oh {he’s having a problem in the loft} [ct].
K Ahhhh {comes around to the front of the barn to look} [ct] [nv]!

M The hay fell out Kyle, along with Burt [at] [fcl].

K {works the crank} Mom [ct].

+ To transcript interrater 4-30-94

+ Transcript interrater reliability 2235/2256 = 99%

+ To coder 5-2-94, completed 5-7-94