THE NARRATIVE ABILITIES OF A
SEVERELY HARD-OF-HEARING CHILD

by

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ABSTRACT

Telling a narrative is a complex task that requires the integration of two types of knowledge: cognitive knowledge of the real-world and linguistically transmitted sociocultural knowledge. Different narrative types require varying amounts of cognitive and linguistically transmitted sociocultural knowledge. It is of interest to find out if the structure of various narrative types is altered when language input is impaired in cases of congenital hearing loss, where it is expected that the acquisition of linguistically transmitted sociocultural knowledge will be delayed but cognitive knowledge will not.

A 4-year-old severely hard-of-hearing child was asked to tell three different types of narratives: script narratives, personal narratives, and story narratives. The present study investigated whether or not there was a difference between the structure of this hard-of-hearing child's narratives and the structure of narratives reported in the existing literature on normal-hearing preschoolers. It was predicted that only narrative structures relying predominantly on linguistically transmitted sociocultural knowledge would be delayed in the hard-of-hearing child. It was found that the hard-of-hearing child had structurally similar script and personal narratives to those produced by age-matched normal-hearing children. However, contrary to the prediction, his story narratives were structurally more complete than those of age-matched normal-hearing preschoolers. These findings support the conclusion that only limited exposure to story narrative structure is needed in order to include components that require predominantly linguistically transmitted sociocultural knowledge.
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CHAPTER ONE
INTRODUCTION AND RESEARCH REVIEW

Introduction

Hearing loss has complex effects on the language development of children. Children with hearing loss often have limited access to a variety of important experiences that contribute to their overall communicative competence. These language experiences include: (1) language directed toward children by adults; (2) language used between adults; and (3) language used between children. Each of these experiences has various consequences to a child's language development. Speech directed by adults toward children is a crucial requirement for the development of linguistic abilities, whereas language between adults or other children overheard by a child provides supplemental information that is crucial to establishing the full range of social rules of language. These social rules are exhibited in various discourse types used in everyday communication. Overall, language development in severely hard-of-hearing children has been found to be similar in sequence but slower in rate than that of hearing children (Quigley & Paul, 1984). It would be reasonable to expect a similar, yet delayed, development in a hard-of-hearing child's narrative abilities as is found in their overall pattern of language development.

Let us consider what specific abilities must develop in order to produce complete narratives. A narrative requires that the speaker inform the listener about the topic to which he/she is referring and that the speaker organize the narrative so that the listener can follow the account. Storytelling is one example of a narrative type. Stories are used to transmit information, and preserve culture, as well as simply to entertain groups of people.
When adults create stories, they manipulate the telling of events to create effects such as surprise, suspense or curiosity. Children seem to acquire the ability to tell stories with great ease. However, storytelling is a complicated endeavour and requires that the child develop appropriate cognitive knowledge and linguistic ability.

Recently, the development of narrative abilities by normal-hearing children has received much attention. In particular, researchers have focused on the cognitive representations people have for narratives (Mandler, 1984; Stein, 1988). Such cognitive representations are commonly known as schemas. The term schema has been used to refer to the underlying structures that are used to organize knowledge. Mandler (1979) claims that "a schema is formed on the basis of past experience with objects, scenes, or events and consists of (usually unconscious) expectations about what things look like and 'what goes with what'" (p. 263). She notes that schemas are organized hierarchically, meaning that more general groups of sequenced events also contain more specific sequenced events nested within them. When a narrative is ordered, the items within the narrative are connected horizontally (serially, as sequenced events), as well as vertically (hierarchically, to the whole of which they are a part) and hence form a tight interconnected organization. The schema is the building block of cognition, and schematic knowledge, which must be learned, is used in comprehending and producing narratives. Mandler (1983) has stated that for story narratives, "a story schema is a representation of a story structure...[it] is formed on the basis of...hearing stories with common underlying structures" (p. 477). Speakers use the appropriate schema to produce a particular unit of discourse (Stein & Glenn, 1979; Quigley & Paul, 1984).
The purpose of my study is to describe the structure of narratives told by a 4-year-old severely hard-of-hearing child, A.T. It is of interest to find out how the learning of specific schematic knowledge that is dependent on language input may be altered when the input is impaired, such as it is in the case of hearing loss. Using existing research results as a basis for comparison, I will compare the narrative abilities of this child with that of normal-hearing preschoolers. I chose to focus on narrative development for two reasons. One is theoretically motivated and the other is clinically motivated.

From a theoretical viewpoint, it is interesting to determine the structural complexity of A.T.'s various narrative productions in relation to those of normal-hearing preschoolers. In order to develop narrative abilities, children must possess knowledge of causal, intentional, spatial, and role relationships, and they must be able to represent knowledge linguistically in the appropriate mode (Westby, 1984). The organization and content of narratives are influenced by a combination of cognitive and linguistically transmitted sociocultural factors. Until the age of 2 years, this child was deprived of normal language input and thus, normal linguistically transmitted social input. However, he is a cognitively normal child. His productions of aspects of narratives that rely more on cognitive development should be similar in form to those produced by normal hearing children. After being fitted with hearing aids and enrolled in an aural habilitation program, A.T.'s linguistically transmitted social input was changed. This type of linguistically transmitted sociocultural input is not typical to that received by normal-hearing preschoolers. It might be expected that those aspects of narrative productions which require linguistically transmitted sociocultural knowledge would be delayed in acquisition. This could result in
narrative productions that are structurally different from those of normal-hearing preschoolers. Such structural differences could give insight into the relative contributions of linguistically transmitted sociocultural knowledge and cognitive factors in the acquisition of narrative abilities.

From a clinical viewpoint, one important reason to study narrative productions of a hard-of-hearing child involves the issue of literacy. Hard-of-hearing children tend to have more difficulties with learning to read and write than do normal-hearing children (Quigley & Paul, 1984). The acquisition of certain narrative abilities has been found to be closely linked to literacy (Westby, 1984). Storytelling requires children to decontextualize their environment. Examples of decontextualization are: a picture of an airplane in a book is more decontextualized that the real object in the sky, and words on flash cards are more decontextualized than words in connected speech. This ability to remove oneself from the "here and now" is important in storytelling and subsequently to the development of literacy skills (Cazden, 1988). Knowledge about stories and story structure can help the reader to make predictions and inferences that guide the reading process. If hard-of-hearing children are delayed in their narrative abilities then it would follow that they may have delays in learning to read and write. Evidence supporting this hypothesis would be important to consider in the development of habilitation programs for severely hard-of-hearing children.

This thesis consists of four chapters. In Chapter One, I will present an overview of language acquisition in hard-of-hearing children. Then I will discuss various narrative structures and the cognitive and linguistically transmitted sociocultural knowledge required for their production. Next I will review the development of narrative structures by normal-
hearing children, as well as discuss the linguistic markers of narrative structure and their
development. I will end this chapter with hypotheses about A.T.'s production of various
narrative types. Chapter Two will focus on the coding and analysis of the data collected
from A.T. Chapter Three will present the results of the analysis. In Chapter Four, I will
discuss these results and make comparisons with the results of the studies presented in
Chapter One. As well, Chapter Four will provide information about how these results could
be used to develop habilitation programs for severely hard-of-hearing children.

Literature Review

Language Development of Hard-of-Hearing Children

Before discussing language development of hard-of-hearing children, it is necessary
to define the terms hard-of-hearing and deaf. Hearing is usually measured across a range
of standard test frequencies from 250 to 8000 Hz (Yantis, 1985). A logarithmic unit, the
decibel hearing level (dB HL), is used as the measure of hearing sensitivity. At each test
frequency, the hearing threshold level (HTL) is determined by finding the sound pressure
level in dB HL where the subject correctly detects a tonal stimulus 50% of the time and this
information is then plotted on an audiogram. The Pure Tone Average (PTA) of thresholds
at 500, 1000, and 2000 Hz, can be used for determining the degree of hearing loss (Yantis,
1985). A PTA between 0-15 dB HL is considered normal hearing sensitivity. Yantis
classifies degrees of hearing loss in the following way: a PTA between 16-25 dB HL is
considered a slight hearing loss, 26-40 dB HL is mild, 41-55 dB HL is moderate, 56-70 dB
HL is moderate-severe, 71-90 dB HL is severe, and 91 dB HL or greater is profound. Audiologically, the term deaf refers to an individual with a profound hearing loss.

The term deaf can also be used to mean the deaf culture. Persons with any amount of hearing loss may choose to be part of the deaf culture and be referred to as deaf people. It is not the intention of this thesis to discuss the deaf and hearing cultures. This is a controversial topic and not of direct relevance to my study (see Calvert & Silverman, 1983 for a discussion of the deaf and hearing cultures). However, I could not discuss the definitions of deaf and hard-of-hearing without bringing in another definition of deafness.

The problem is that the results of research on speech and language development of hard-of-hearing and deaf children do not fall into discrete categories according to the audiological criteria for determining whether a child is deaf or hard-of-hearing. Some studies refer to work with deaf children without providing information about the degree of their hearing loss, either aided or unaided, or about their cognitive or other related abilities. In other studies, children referred to as deaf have PTA's of 60 dB HL, which by the above definition would classify them as having a moderate-severe hearing loss. With such vague definitions for the term deaf, it is hard to evaluate the relevance of many earlier studies in this area. The studies I refer to are all reported to be of 'oral' deaf children, meaning that the children were in educational programs that concentrated on teaching spoken language as the primary means of communication. It is therefore likely that most children were hard-of-hearing, but it is possible that some were deaf.

Very little research has been done on narrative abilities in the development of the spoken language of deaf or hard-of-hearing children. Observations of these children's
language has tended to concentrate on their phonology, syntactic structures, and vocabulary development. The following studies cover a span of forty years of research. With improvements in the detection of childhood hearing loss, hearing aid technology, and educational techniques, it may be argued that the levels of linguistic ability described in the early research studies are now of questionable relevance. However, given the limited research data available in this area, these early studies must be included. In part, it is the lack of research in this area that motivated the development of the present study.


Dodd (1976) conducted a study on the speech of deaf children to determine if their phonological systems were rule-governed. The speech of ten deaf children, all 11 years old, was analyzed. The results indicated that each subject produced more than half of all the 42 phonemes produced in English. It was concluded that the phonologic systems of these children were rule-governed, but that the rules used were ones typically used by younger normal-hearing children.

Abberton, Fourcin, and Hazan (1986) studied 12 children with moderate to profound hearing losses. Their findings indicated that these children showed broadly similar patterns of phonological development compared to normal development, but they exhibited delay in
the area of consonant contrasts. Most children, though not all, had an adequate vowel system and used appropriate intonation patterns.

Presnell (1973) investigated the syntactic ability of deaf (PTA’s of 50 to 99 dB HL), and normal-hearing children, aged 5 to 13 years, by analyzing spontaneous language samples and the results of the Northwestern Syntax Screening Test (NSST; Lee, 1969). Compared to norms for normal-hearing children, significant differences were found in the rate and order of development for verb constructions. Presnell found that, in the deaf group, the most rapid rate of language development occurred between the ages of 5 and 9. She concluded that language development deviated from the normal rate and pattern of acquisition. This difference was hypothesized to be due to the unnatural order of teaching verbs by the instructors of deaf children.

Geers and Moog (1978) used an imitation task, the Carrow Elicited Language Inventory (CELI; Carrow, 1974) and the Developmental Sentence Scoring (DSS; Lee, 1974), to study 52 severely hard-of-hearing and profoundly deaf children aged 4-15 years. Similar to Presnell’s findings, the most rapid language development occurred between the ages of 4 and 9. On the DSS, the scores of more than half of the subjects were inferior to the scores of the average 3-year-old normal-hearing child. On the CELI, more than half of the deaf subjects produced more errors than average 3-year-old normal-hearing children. Qualitatively, the deaf subjects produced more structurally complex sentences, albeit with a greater number of grammatical errors than the normal-hearing children. This difference may have been due to a difference in age; that is, the deaf children ranged from 4-15 years whereas the normal-hearing children ranged from 2-6 years of age.
Relatively little attention has been given to the study of semantics in the language development of the deaf. Early research focused on the study of the development of vocabulary. Vocabulary in the deaf was found to be restricted and delayed (Templin, 1950) and contained fewer abstract and more concrete nouns (Wells, 1942) compared to the vocabulary of normal-hearing children. In later research, Jarvella and Lubinsky (1975) investigated the understanding of terms concerned with the temporal ordering of events (e.g. before, after, first, last). In six related experiments with twenty 8- to 11-year-old severely hard-of-hearing or profoundly deaf children and a control group of twenty normal-hearing children aged 8 to 9 years, they found that the performance of deaf children resembled that of much younger normal-hearing children. The hard-of-hearing and deaf children performed similarly to hearing children when the temporal order in the sentence was preserved; i.e. after clause first or before clause second. The performance of the deaf and hard-of-hearing children was inferior to that of the hearing children and only at chance level when the temporal order was reversed.

From the above review of literature regarding the linguistic development of hard-of-hearing children, the issue of deviant/delayed language has been one of the major areas of importance to the researchers. Most studies suggest that this is not an either/or question. Language is far too complex for there to be a simple answer, and it is both possible and probable that delay and deviance characterize language development in the prelingually deaf. What is not in doubt is that for most profoundly hard-of-hearing children language acquisition is slow. It would seem reasonable to expect this same delay in the development of narrative abilities by hard-of-hearing children as was found for the various language
abilities reviewed. The next section will cover the various types of narrative structures that have been proposed.

Narrative Structure

For the purpose of this study it is important to make a distinction between knowledge that is primarily the product of processing everyday experiences (i.e. cognitively determined) and knowledge that is primarily the product of linguistically transmitted sociocultural knowledge. Cognitive development is an "underground process that takes place through interaction with the world" (Grusec & Lytton, 1988, p. 15). What children know - what is available to them in terms of represented, mental information - is based on everyday experience. Real-world knowledge, for young children, comes almost exclusively from direct experience. Older children and adults can learn about the world through books, television and oral instruction, but all of these sources of knowledge require that the learners represent to themselves aspects of the world conveyed through language. These indirect knowledge sources are not as available to young children because they are less able to make use of language to construct world knowledge independent of their own prior experience. That is not to say that young children do not acquire knowledge from linguistically transmitted information, only that most of the world-knowledge young children acquire comes from their own direct experiences. It is this direct, real-world knowledge that I refer to as cognitive knowledge.

At the same time as the child is gaining real-world knowledge from direct experiences, the sociocultural world is also providing experiences. Social and cultural agents
(e.g. parents, teachers) set the context for some of the child's learning. This linguistically transmitted sociocultural knowledge is yet another knowledge system the child must acquire in order to interact appropriately with others. Sociocultural knowledge also constrains and structures knowledge about the world.

Narrative abilities are complex and require the integration of these two knowledge types. Three relevant narrative types have been described: the first is story narrative; the second is personal narrative; and the third is script narrative.

Storytelling ability is a reflection of the social values, beliefs and goals that underlie human interactions (Stein, 1988). The development of fictional storytelling schemas is influenced by a myriad of cognitive and linguistically transmitted sociocultural factors. In producing a story a narrator must draw on some knowledge about the event occurring in the story. The narrative could draw from general event knowledge, a memory of a single episode or recollection of another fictional story (Stein, 1988). According to Stein & Glenn (1982), a story can be divided into two major components:

1. The setting introduces the main characters and provides information about the time and place in which the story occurs.

2. A single episode in a story may contain only one protagonist, one goal, one attempt and one outcome. It consists of six subcategories:

   a. The initiating event is the occurrence which influences the main character into action.
b. The **internal response** of the main character usually takes the form of an emotional reaction plus a goal and may include an interpretation of the event that leads to formulation of a goal.

c. The **attempt** involves the overt actions of the main character that are carried out in pursuit of the goal.

d. The **consequence** is the outcome of the attempt, whether or not the goal is reached. This also includes any other events or states which may be the result of the attempt.

e. The **reaction** includes any emotional or evaluative responses by the main character about the outcome of his actions.

f. A **formal ending device** indicates the completion of the narrative.

The structure of a story is recursive, in that it may contain a number of episodes. Episodes can be linked together in various ways. For example, episode embedding or episode chaining can be used to connect episodes together (Johnson & Mandler, 1980; Stein & Glenn, 1979).

In producing a **personal narrative**, the second type of narrative, the speaker must draw primarily on a memory of a single episode. A coherent personal narrative is organized around a high point that is the main point of the narrative. According to Labov and Waletzky (1967; Labov, 1972), in relating an experience, a speaker organizes the verbal description to match the temporal sequence of the actual event. The structural framework of the narrative serves two functions: (1) a referential function, whereby the narrator orients the listener to what the narrative is about, and (2) an evaluative function, whereby the
narrator communicates the importance of the story. Labov and Waletzky described six structural components that serve to organize personal narratives around high points.

1. The **abstract** and **introducer** occur at the beginning to mark the start of the narrative.

2. The **orientation** provides information about the participants and the setting for the narrative.

3. The **complicating action** is a series of events leading up to and including the high point or crisis of the narrative.

4. The **evaluation** reveals the point of the narrative.

5. The **resolution** gives the end result of the actions.

6. The **coda** or **ending** serves to finish and to signal the completion of the narrative.

As with story narratives, personal narratives involve the interaction of cognitive and linguistically transmitted sociocultural knowledge; however, there is evidence that the development of personal narratives, in terms of the range of structural components present, is influenced more by cognitive knowledge than by sociocultural knowledge (Haslett, 1986). Most descriptions of narrative structure are based on a model of mainstream, white, middle-class culture (Johnson & Mandler, 1980; Stein & Glenn, 1982). In this culture, there are no special ways of telling a personal narrative, and therefore little linguistically transmitted sociocultural knowledge is required in order to produce a good personal narrative. As children become cognitively more mature, the structural complexity of their personal narratives increases.

The third type of narrative is a **script narrative**. The term **script** was adopted by Schank and Abelson (1977) to refer to a type of schema that contains information about
how common, everyday events are carried out (e.g. having dinner at home). A script can include who the participants usually are, what activities they ordinarily carry out, what the setting of the event is, and in what order the participants typically carry out their activities. A script differs from a story schema in being more concretely related to specific content. It is an encapsulation of knowledge about what happens in a particular setting. Scripts, like stories, have sequential ordering constraints. Unlike a story schema, a script consists of concrete actions, thereby restricting the elements of a script to a limited set of events (i.e. a restaurant script is always about restaurants and its description consists of concretely specified actions) (Fivush & Slackman, 1986).

As was the case for story narratives and personal narratives, producing a script narrative involves the interaction of cognitive and linguistically transmitted sociocultural knowledge. However, like personal narratives, various studies have found that the development of scripts relies more on cognitive knowledge than linguistically transmitted sociocultural knowledge. It seems that after only one experience with an event, the representation of an event is organized as a general set of expectations (i.e. a schema) such that future occurrences of the event can be expected to contain the same set of basic elements and conform to the same organization (Nelson, 1986; Fivush & Slackman, 1986).

The focus of this discussion has been on narrative structures proposed by Stein and Glenn (1982), Labov and Waletzky (1967), and Shank and Abelson (1977). There are many other descriptions of narrative structure. I have chosen to focus on the work presented by the authors above for two reasons: (1) it differentiates three well attested types of narratives; and (2) it makes different predictions about narrative development based on the relative
contributions of cognitive and linguistic sociocultural experience. Additionally, these narrative structures were proposed to describe three different narrative types; however, many of the categories in one structural description function in a way identical or similar to a counterpart category in a different narrative structure. For example, introductions and orientations found in personal narratives are similar to beginnings and settings found respectively in story narratives. I intend to analyze the script, personal, and story narratives told by A.T. using these three narrative descriptions, but I will make changes in the analysis procedures to take into account the similarities in the categories found across the narrative descriptions because I am interested in comparing differences in narrative development across the three narrative types.

The Development of Narrative Structure by Normal-Hearing Children

This next section presents information on the development of narrative structure by normal-hearing children. None of the researchers actually state the hearing status of the children in their studies; however, it is assumed that these children have normal hearing.

Script Narratives. Hudson and Nelson (1983) asked 4- and 6-year-old children to recall script-based stories presented in their canonical order or with several misordered events. Both age groups were able to recall the ordered stories in qualitatively similar ways, but only the older children were able to restore the misordered actions to their canonical form or change the interpretation of the misordered information to make sense of it in its presented form. For example, for older children, presents given at the end of a birthday party were
changed to getting party favours before going home. The younger children simply omitted the misordered events from their recall. This suggested that older children were able to use their knowledge about familiar events in a more flexible way in order to understand and organize the misordered stories, whereas the younger children relied more strictly on their underlying representation, such that when a mismatch occurred between their representation and the presented story, they simply ignored the conflicting information.

Hudson and Shapiro (1991) studied scripts, personal narratives, and stories told by preschoolers, first graders, and third graders. For the script condition, Hudson and Shapiro found that all the children used the appropriate convention of reporting scripts in the timeless present tense and using the second person perspective (i.e. *you*). Younger children followed closely the temporal sequence of the event described. Older children were more likely to explicitly sequence their scripts, add more alternative information, and provide clear endings. Preschool children seemed to have a looser conception of a script than first and third graders.

Personal Narratives. Umiker-Sebeok (1978) studied the personal narratives of 3-, 4-, and 5-year-old children within a preschool setting. Umiker-Sebeok's definition of narrative was slightly different from that of Labov and Waletzky (1967). Specifically, Umiker-Sebeok stated that "any verbal description of one or more past events" (p. 92) was defined as a narrative, as long as it clearly signalled that "something happened." Her results showed that at age 3, children produced narratives that were one or two clauses in length. These narratives often contained a complication section and an introduction, but evaluations were
rarely present. The narratives were often about events that had just occurred and were usually restricted to events that happened at school. The 4-year-olds produced longer narratives that were between two and three clauses long. They included an introduction, an orientation, and complicating actions. Evaluations were included more often than in the 3-year-olds' narratives. The 5-year-olds included all the previous components as well as abstracts and various types of evaluation. These older children's narratives contained more clauses and the narratives were no longer restricted to a school setting but included events removed from school.

Haslett (1986) studied forty children ages 4 to 7 years (four age groups of 10 children each). The children were asked to tell a story. These stories were their own accounts and were not elicited using any books or picture cards. Haslett (1986) used Labov's (1972) narrative structure to examine the development of story structure across age groups. Haslett found that older children included orientation, complicating action and evaluation elements more often than younger children. She concluded that there was a general trend toward greater structural complexity and greater hierarchical organization with an increase in age. The 4-year-olds' narratives tend to be structurally less complete than the older children's narratives. Whereas Umiker-Sebeok (1978) found introductions, orientations, complicating actions, and evaluations in the narratives of 4-year-olds', Haslett found only complicating actions present in 4-year-olds' narratives. Furthermore, Haslett (1986) found that complicating actions were not integrated: there was often a list of events, some of which were related and others of which were not. Evaluation and resolution, which contribute to text cohesion, were typically missing. The 5-year-olds' stories were more complex, but the
central plot of the narrative was still unclear because the structure of their narratives was not yet complete. The 6-year-olds demonstrated the use of direct dialogue in their narratives, the use of an evaluation to reflect the feelings of characters, and the use of surprise endings which violated expectations set up earlier in the story. The narratives of the 7-year-olds involved a series of episodes within the narrative and were even more structurally complete. As well, their narratives were more cohesive, with series of events flowing from one to the other. Generally, Haslett’s results are similar to Umiker-Sebeok in that there is a general trend for structural complexity to increase as a function of increasing age.

Like Haslett (1986), Peterson and McCabe (1983) also used Labov’s (1972) narrative structure to analyze the personal narratives of a group of children ages 3 1/2 to 9 1/2 years. They also noted definite changes in narrative structure with increasing age. Orientations, abstracts, resolutions and a richer variety of evaluations were more often included in the older children’s personal narratives. Some of the 4-year-olds in their study produced temporally disorganized lists of actions, whereas others followed the temporal sequence of experienced events but ended prematurely at the high point of the narrative. It appears that with increasing age and personal narrative experience children produce more structurally complex personal narratives.

Hudson and Shapiro (1991) found that for the personal narrative condition, the third graders included more setting statements, explicit sequencing of events, high points, and endings. The preschoolers and first graders showed less awareness of the structural characteristics of personal narratives as compared to the third graders. Nevertheless, both
the preschoolers and the first graders showed the appropriate use of past tense and first person perspective (i.e. I) to report a personal narrative, as well as the inclusion of an evaluation. The performance of the first graders contrasts with other reports (Umiker-Sebeok, 1978; Haslett, 1986) that children of this age can produce structurally complete personal narratives. Hudson and Shapiro do indicate that the method by which they elicited personal narratives may have influenced the results obtained. Specifically, they state that directly asking a child to tell a personal narrative can lead to structurally less complete narratives than those which are elicited in a spontaneous, conversational context.

Story Narratives. Stein and Glenn (1982) studied six stories generated by children in kindergarten, grade 3 and grade 6. A complete, well-formed story was generated more frequently by the older children. In addition, the inclusion of initiating events, internal responses, attempts and reactions increased with age. Typically, the third graders logically ordered part of their story, then randomly ordered subsequent actions. In contrast, the sixth graders told stories that incorporated all the episodic elements into logical and coherent plots.

Hudson and Shapiro (1991) found that for the storytelling condition, there was a gradual developmental increase in the number of structural components included. Some of the preschoolers' stories included story elements such as the use of past tense and third person perspective (i.e. he or she), a setting and initiating event. First graders included more initiating events, resolution, and endings. By the third grade, children included most of the elements associated with a structurally complete story; however, the stories still lacked
explicit reference to internal states and reactions. In summary, Hudson and Shapiro concluded that the development of narrative structure in scripts and personal narratives is relatively complete by the third grade (age 8), but the narrative structure in children's stories continues to develop. These results are reasonably consistent with those of Stein & Glenn (1982) and of Berman (1988), reported next.

Berman (1988) studied story narratives produced by Hebrew speaking children, ages 3 to 12 years. She used the picture-book *Frog, where are you?* (Mayer, 1969) to elicit the narratives. Her results indicated that preschool-aged children reported their stories using the third person perspective and reported approximately 60% of their clauses using the past tense. Berman's results also indicated that the younger children failed to relate each picture to the overall story. They simply described the events on each page and did not relate them to each other. These results were in disagreement with Hudson and Shapiro, who found evidence of story schema knowledge in the preschool years. From age 5 and up, the task of picture description was construed as "a basis for recounting a connected narrative rather than an end in itself" (p. 487). These findings are consistent with the studies by Stein and Glenn (1982) and Hudson and Shapiro (1991). It takes until the later elementary school years for children to develop a full sense of story structure.

All the above studies indicate that children's understanding of episodic structure in story production undergoes considerable development from preschool through the elementary school years. All these studies do not necessarily agree as to what structural elements are present at what age. However, general conclusions can still be made. Even preschool children are beginning to evidence knowledge of an adult-like story schema. Most
preschool-age children know settings and initiating events are important parts of a story; however, only older children have acquired the addition of reactions and endings to their stories (Page & Stewart, 1985). In order for a child to develop the elements associated with the adult conception of a "good" story, he must be given models with which to begin forming his own story schema. By gaining more experience with stories and developing better story schemas, older children produce more structurally complete story narratives.

Overview of Narrative Development. Table 1 shows an overview of the results from the various authors reviewed above. Script narratives are acquired by the preschool years. With increasing age, script narratives become more elaborate; however, the underlying schema is present at a young age. Personal narratives and story narratives develop over a longer period of time. With increasing age and experience, children produce structurally more complex personal narratives, and structurally more complete story narratives.

Linguistic Markers of Narrative Structure and Their Development

In addition to developing cognitive and linguistically transmitted sociocultural knowledge, both of which are related to the development of narrative structure, it is important to include the role of children's linguistic abilities. It is clear that without any knowledge of language structure children could not generate coherent narrative productions.

As discussed, a large amount of research has been done on the development of story schema knowledge in children. Some of the data indicates that children between the ages of 3 and 4 years are beginning to work with an adult story schema (Hudson & Shapiro,
Table 1: Overview of Narrative Development by Narrative Type

<table>
<thead>
<tr>
<th>AGE</th>
<th>SCRIPT</th>
<th>PERSONAL NARRATIVE</th>
<th>STORY</th>
</tr>
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| preschool (3-4 years)| - use implicit knowledge of script-like events (Fivush & Slackman, 1986)  
                           - rely strictly on underlying representations (Hudson & Nelson, 1983)  
                           - use timeless present tense and second person perspective (Hudson & Shapiro, 1991) | - include introductions, orientations and complications  
                           - one to three clauses per narrative (Umiker-Sebeok, 1978)  
                           - narratives often a list of complicating actions (Haslett, 1986)  
                           - use past tense, first person perspective; include complicating actions and evaluations (Hudson & Shapiro, 1991) | - use past tense, include settings, initiating events, and attempts (Hudson & Shapiro, 1991; Stein & Glenn, 1982)  
                           - use past tense and third person perspective  
                           - fail to relate each picture, in a picture-book, to the overall plot of the story; describe each page in isolation (Berman, 1988) |
| early school age (5-7 years)| - use script knowledge in more flexible ways (Hudson & Nelson, 1983)  
                           - include more optional information and clearer endings (Hudson & Shapiro, 1991) | - include abstracts, introductions, orientations complications, and various types of evaluations (Umiker-Sebeok, 1978; Haslett, 1986) | - include settings, initiating events and consequences (Page & Stewart, 1985)  
                           - begin to connect pictures, in a picture-book, to the overall plot (Berman, 1988) |
| late school age (8-13 years)| - include orientations, abstracts, resolutions, evaluations; narratives more structurally complex (Peterson & McCabe, 1983)  
                           - include complicating actions, evaluations and endings (Hudson & Shapiro, 1991) | - sixth graders include all components of a well-formed story (Stein & Glenn, 1982)  
                           - by 10 years, also include reactions and endings (Page & Stewart, 1985) | - sixth graders include all components of a well-formed story (Stein & Glenn, 1982)  
                           - by 10 years, also include reactions and endings (Page & Stewart, 1985) |
Less research has been done on the developing ability to use linguistic markers as cohesive devices to produce a coherent narrative text. The following discussion will briefly examine the development of pronominal reference and tense forms as they are used to convey cohesion within a narrative.

Before discussing pronominal reference and tense forms, definitions of the terms cohesion and coherence are needed. Halliday and Hasen (1976) view cohesion as the relationship between sentences in a text. In this view, cohesion is the relationship that exists between elements in connected sentences of a text in such a way that one word or phrase is linked to other words or phrases. Thus, an anaphoric element such as a pronoun is treated as a word which substitutes, or refers back to, another word or words. In addition to knowledge of sentential structure, listeners also have a knowledge of standard formats in which knowledge is conveyed. Coherence of a text involves this background knowledge people bring to the interpretation of linguistic elements. Coherence is also the result of sequential cohesion.

Pronominal anaphora, as a cohesive device, refers to the use of pronouns as contextual cues to indicate that sentences or groups of sentences are to be interpreted together (Bamberg, 1987). For example,

1. The boy kicked the ball.
2. Then he ran after it.

The pronoun, he, in sentence 2 refers to the boy introduced in sentence 1. Pronouns on their own have no inherent referential meaning, but rely on nominal expressions for referential meaning. Sentence 2 would have made little sense without sentence 1 preceding
The analysis of pronominal anaphora has been carried out by researchers such as Karmiloff-Smith (1981) and Bamberg (1987), who examined the development of pronominal anaphora in a story narrative context.

Adults use pronouns anaphorically to maintain reference to various characters within a story, whereas full nominal expressions are used to switch reference in a text (Bamberg, 1987). Switching reference refers to establishing a referent in discourse. Some examples of switching and maintaining reference are:

1. The boy went to sleep.
2. He woke up.
3. The dog jumped out the window.
4. He landed on the ground.

The *he* in sentence 2 refers to the boy, whereas in sentence 4, *he* refers to the dog. In sentence 1, reference to the boy is introduced and then maintained with a pronoun in sentence 2. In sentence 3, reference is switched to a new character by the use of a full nominal expression and then maintained in sentence 4. Both Bamberg (1987) and Karmiloff-Smith (1981) found that the adultlike use of pronominal anaphora is not acquired until after 9 years of age.

From the age of 7 to 9 years, children used pronouns in what Karmiloff-Smith (1981) termed a "thematic subject" strategy. According to this strategy, children reserve the use of pronouns in utterance-initial position exclusively for the main character, whereas all other characters are identified by full nominal expressions.

Children under the age of 6 years use pronouns deictically, meaning that pronouns are used to refer to characters in the immediate context (e.g. a child points to a character on the page while saying the word *he*). Karmiloff-Smith (1981) found that, for children
under 6 years old, there was no sense of connection between one picture and the next and, therefore, pronouns were not being used to create cohesion within the story.

Nominal and pronominal forms provide only one of several ways of establishing narrative coherence. Another way of creating coherence involves the use of temporal markers for ordering events, such that they can be viewed as occurring in a meaningful temporal and/or causal framework. The development of linguistic markers for ordering events temporally involves examining the use of temporal adverbs and tense forms in producing various narratives.

Temporal adverbs, such as then, next, and first, are used to achieve narrative cohesion, particularly in preschoolers' narratives (Hudson & Shapiro, 1991). Older children also use temporal adverbs; however, older children can also use more varied methods to achieve cohesion, such as pronominal anaphora.

Use of tense is an important marker that differentiates between script narratives and both personal narratives and stories. Script narratives are told in the timeless present tense, whereas personal narratives and stories are reported in the past tense. Hudson and Shapiro (1991) studied the scripts, personal narratives and stories told by preschoolers, first graders and third graders. They found that all the children reported more propositions in the past tense in both personal narratives and stories than in scripts. The preschoolers and first graders, but not third graders, used the past tense more often in their personal narratives than in their stories. Hudson and Shapiro concluded that all the children had mastered the necessary discourse conventions for tense usage in producing particular narratives, even if they were not yet able to produce structurally complete narratives.
Hudson and Nelson (1984) also reported a relationship between the use of tense and the type of narrative being told. The timeless present tense was used for script narratives and the past tense was used for personal narratives. Their results closely paralleled those reported by Hudson and Shapiro (1991).

Text cohesion analysis is another method of analyzing story narratives. This analysis involves identifying ties between phoric (presuming) elements - which include the anaphora described above - and the presumed elements from which they derive their meaning. Linguistic markers facilitate a narrative’s coherence, while at the same time, the understanding of how such markers function in narratives facilitates the use and understanding of those devices in general. For example, the use of pronouns such as he or she for maintaining reference in a story contributes to the narratives overall coherence, while also allowing a child practice in using pronouns and making the distinction between the use of he and she. The results of Bamberg and Karmiloff-Smith’s studies indicate that children as young as 3 1/2 years old are sensitive to the notion of cohesion within a story. This is an interesting conclusion when interpreted with the data on narrative development presented earlier, which suggested knowledge of an adultlike story schema by 3 to 4 years of age. It is not surprising that as children acquire knowledge of story schema they begin to incorporate knowledge of cohesive devices in order to produce more coherent stories. Young children begin to merge story schema knowledge and linguistic knowledge of cohesion, but do not consistently reflect the adult system until after the age of 10 years.
Hypotheses about A.T.'s Narratives

In the production of scripts the emphasis is on general cognitive knowledge. Personal narratives involve primarily cognitive knowledge. Storytelling relies on both cognitive and linguistically transmitted sociocultural knowledge. A child must be given models of stories in order to develop a schema for what constitutes a good story. Schemas for scripts and personal narratives follow to a greater degree from world experience. The main purpose of this study was to determine how the structure of various narrative types may be altered when language input is impaired, such as it is in the case of hearing loss.

On the basis of prior work in this area I proposed the following hypotheses:

1. A.T. will show less differentiation in his three narrative types than is shown by normal-hearing children. He will use the appropriate perspective and tense expected in each narrative type, i.e. scripts will be reported using second person perspective and the present tense, personal narratives will be reported using first person perspective and the past tense, and story narratives will be reported using third person perspective and the past tense. Due to the fact that script and personal narratives rely more on cognitive knowledge than linguistically transmitted sociocultural knowledge, A.T. will be expected to include the same structural components in these two narrative types as normal-hearing children include. However, A.T. will not include as many structural components in his story narratives as normal-hearing preschoolers include. It will be this lack of structural components in his story narratives that will lead to less differentiation among his three narrative types.

2. A.T. will produce script and personal narratives that are structurally similar to those produced by normal-hearing preschoolers. For the script narratives, he will report the
narratives using the second person perspective, the present tense, and will include temporal adverbs. A.T. will not include alternative actions, explanations, or an ending device. For the personal narratives, A.T. will report the narratives using first person perspective and the past tense, as well as include temporal adverbs, an orientation and complicating actions. He will not include an introduction, evaluation, resolution or an ending. These latter components require predominantly linguistically transmitted sociocultural knowledge for their inclusion in a personal narrative and therefore should not be present in A.T.’s narratives just as they are not present in the productions of age-matched normal-hearing children.

3. A.T. will produce story narratives that are structurally different from those produced by normal-hearing preschoolers, more specifically, he will produce structurally less complex story narratives. He will report the narratives using third person perspective and the past tense, as well as include temporal adverbs, a setting, initiating event, and attempts. A.T. will not include a beginning, internal responses, consequences, reactions, or an ending device. These latter categories require linguistically transmitted sociocultural knowledge and should not be present in A.T.’s story narratives just as they are not present in normal-hearing preschoolers’ story narratives. I also expect that A.T.’s use of the linguistic markers of narrative structure (i.e. referential devices) will be less developed than normal-hearing children, which will result in less coherent story narratives.
CHAPTER TWO

METHOD

Subject

At the time of the investigation A.T. was a four-year-old (4;9, 4 years; 9 months) boy with a severe hearing loss in the left ear and a profound hearing loss in the right ear. An audiogram of A.T.’s unaided and aided hearing thresholds can be found in Appendix A. He was first diagnosed at the age of 1;6 with a hearing loss that was assumed to be congenital. The exact cause of A.T.’s hearing loss is unknown. There is a familial history of hearing loss (a paternal uncle has a congenital hearing loss and communicates with sign language). There is also a history of recurrent otitis media and a number of upper respiratory infections in A.T.’s early years.

A.T. was fitted monaurally with a hearing aid for his left ear at 1;9. Little benefit would have been gained from amplification to his right ear due to the profound degree of hearing impairment in that ear. Wearing his present Widex ES2 hearing aid, A.T. has thresholds of 30 dB HL across the speech frequency range (500 - 4000 Hz).

Since the age of 2;4, A.T. has attended an aural habilitation clinic. At the time of the study, he was attending the habilitation clinic twice a week for 1-1 1/2 hours per session, where he participated in an extensive auditory-verbal therapy program. A typical therapy session would include an auditory component, where A.T. would practice listening and performing various tasks, such as following a series of directions; a language component, where A.T. would work on a particular area of language development, such as asking
questions; and a speech component, where A.T. would practice particular speech sounds, such as /s/ and /sh/. A student volunteer was visiting A.T.'s home once a week to work on speech and language development. He was also enrolled in a preschool program three mornings per week, allowing him the opportunity to interact with his normal-hearing peers.

A.T. was chosen as a subject for the present study because he has normal intelligence (as determined by various tests of cognitive/concept skills, which will be discussed in more detail in Chapter Four), comes from an English speaking family, and has no known additional handicaps. He lives at home with his father, step-mother and step-sister (10 months old) all of whom have normal hearing. A.T. is a bright, energetic little boy. He enjoys communicating verbally and expresses himself in full sentences. All developmental milestones were apparently within normal limits, with the exception of speech and language development. For example, at the age of 2;4, A.T. had only a thirty-word productive vocabulary and produced primarily one-word utterances. A number of assessments have been performed with him in the last year. The Peabody Picture Vocabulary Test - revised edition (Dunn & Dunn, 1981) was administered most recently at chronological age (CA) 4;8, on which he achieved an age equivalent score of 3;10. On the Test of Auditory Comprehension of Language - revised edition (TACL-R; Carrow-Woolfolk, 1985), administered at CA 4;3, A.T. obtained an age equivalent score of 3;6 to 3;9 on both the grammatical morphemes and elaborated sentences sections. At present, the audiologists at the clinic he attends judge that A.T. has "excellent potential for continued development of verbal speech and language."
Design

Three types of narratives were elicited from A.T. as follows: script narratives, personal narratives, and story narratives. In addition, story narrative data from a normal-hearing 4-year-old child (Berman, Slobin, Bamberg, Dromi, Marchman, Neeman, Renner & Sebastian, 1986: see Appendix B) was coded and analyzed in the same manner as were A.T.'s story narratives. This allowed for a direct comparison of the story narratives told by A.T. to those told by an age-matched normal-hearing child. I also wanted to obtain a language sample of A.T. and his parents interacting when I was not present. A blank tape and tape recorder were given to A.T.'s parents, who were asked to record various interactions with A.T. The data from these tapes was used as a spontaneous language sample to allow for a language analysis of A.T.'s speech.

Elicitation of Narratives

Each narrative type was elicited in a slightly different manner. A.T. was asked to recount script narratives with the question, "What do you do when ______?" The specific events he was asked to tell me about were: nursery school (he recounted this script twice); a birthday party; Halloween; the zoo; and getting his hair cut. Personal narratives were elicited with the question, "What happened when you ______?" The events I asked him to recall were: a trip he went on at Christmas; and a time he hurt himself.

The story narratives were elicited in two different ways: (1) using a wordless picture-book, *Frog, where are you?*, (Mayer, 1969), and (2) using the storybooks, *Just for You* (Mayer, 1975) and *The Berenstain Bears and the Messy Room* (Berenstain & Berenstain, 1985), as
well as sequencing cards that represented the story of *Goldilocks and the Three Bears*. The instructions for the first story-telling condition were adapted from a study of Hebrew speaking preschoolers, by Berman (1988). A.T. was told, "This is a story about a boy (I pointed to the picture on the cover), a dog (pointed) and a frog (pointed). First, I want you to look at all the pictures. Look at each picture, and when you've looked at them all, I want you to tell me the story." When he finished going through the book, A.T. was told, "So, now let's start from the beginning and you can tell Mom the story." The instructions for the other story narratives were somewhat different. However, the basic form was, "I want you to tell me this story."

Minimal verbal prompts were given during the story-telling activity involving the wordless picture-book, as interaction between adults and children has been shown to influence the narrative productions of children (Pellegrini & Galda, 1990; McCabe, 1991). A.T.'s mother was told of this and she limited herself to only neutral type prompts, the same as I used. The prompts used were adapted from work done by Berman et al. (1986). These nonspecific prompts were given only when necessary and included: silence/nod; "uh-huh"; "okay"; "yes"; "anything else"; "and" (with rising intonation); and "go on." For the script narrative and personal narrative conditions, nonspecific prompts were also used. However, at times more specific prompts had to be used. These included expressions such as, "What happened next?" or "How'd you get that?"
Materials

The book, *Frog, where are you?*, consists of twenty-four pictures depicting a boy’s search for his pet frog. The use of this book allowed me to analyze A.T.’s ability to talk about an event known to both of us and it also allowed for cross-study comparisons. This book has been used by many researchers (Bamberg, 1987; Berman, 1988) to elicit narratives from children because it allowed them to compare the ways different speakers talk about the same events. These researchers argue that the narrations offer a clear referential and communicative context by which to determine the children’s narrative abilities. The book depicts a plot filled with causal and temporal relations (see Appendix C for a page-by-page description of the book). Overall, the story is about a boy and his dog as they go searching for their lost pet frog in a forest. They encounter a number of other animals on their search and have a few adventures before finally finding the missing frog.

The story books, *Just for You* and *The Berenstain Bears and the Messy Room*, were longer, written stories. A.T.’s narratives using the word-books and sequence cards were not formally analyzed because the elicitation conditions differed from those used for the wordless picture-book condition and the resulting narratives could not be analyzed in the same way as the narratives elicited from the wordless picture-book condition. For example, the story narrative from the book, *Just for You*, was recited verbatim and the story narrative from *The Berenstain Bears and the Messy Room* involved too much parental involvement. Because these story narratives were not formally analyzed, a full description of the word-books and the sequence cards will not be included in the present discussion.
Schedule of Sessions

Testing for A.T. was done in three sessions of approximately one hour each. The sessions each took place at weekly intervals. The first session was carried out at A.T.'s home. The second and third sessions were carried out at the aural habilitation clinic A.T. attends. After the first session, it was clear that A.T. would perform much better at the aural habilitation clinic. There were too many distractions in his home. As well, A.T. found the tape recorder very interesting and sometimes refused to speak when he saw that the recorder was on. In contrast, A.T. was accustomed to doing various activities at the clinic, and there were places where I could hide the tape recorder so that A.T. would not be able to see it. For all these reasons, sessions 2 and 3 were carried out at the clinic.

In each session, A.T. was asked to carry out slightly different tasks, all of which were aimed at examining his narrative production abilities. It should be noted that the order of tasks in each session was determined by A.T., and not by the investigator. If A.T. seemed to be ready to attempt a task or if he indicated that he wanted to do a particular task, that was the task selected. All tasks were audiorecorded onto a BASF high fidelity tape using a Panasonic cassette recorder (model no. RQ-353), with an internal microphone. The distance from the subject's mouth to the cassette recorder was about 0.5 meter.

Within each session A.T. was given "rest" periods. During these non-elicitation periods he continued to be audiotaped, thereby allowing a spontaneous language sample to be collected. Various analyses were carried out on the spontaneous language sample to be sure that A.T. had the linguistic abilities necessary to permit the targeted narrative analyses. These analyses will be discussed in the description of data presented below.
Session 1. First, I carried out a brief interview with A.T.'s mother. A.T. was not present during this interview. The questions I asked were meant to give an indication of what topics might be best suited for A.T. to discuss, particularly for the script and personal narrative conditions.

Second, I played a few games with A.T. to allow him time to become reacquainted with me (I had worked with A.T. twice a week for six weeks, six months prior to this study). At this time I also asked A.T. to tell one of his favourite bedtime stories to his mother. According to his mother, one of A.T.'s favourite stories is, *The Berenstain Bears and the Messy Room* (Berenstain & Berenstain, 1985), so this story was used. The purpose of this task was to observe how A.T. and his mother interacted when reading a story.

Third, I introduced the picture book *Frog, where are you?* (Mayer, 1969). A.T.'s mother left the room as I was introducing him to the picture book. When A.T. finished going through the book, I had his mother return to the room and I asked A.T. to tell her the story. The book was in front of him all the time, so he was not required to recall the contents of the pictures from memory. As instructed, his mother used only minimal prompts.

Fourth, I asked A.T. to tell me about a trip he took at Christmas. Finally, I had A.T. tell me what he did at nursery school.

Before leaving that day, I gave A.T.'s mother a blank tape and my tape recorder and asked her to record various interactions she had with A.T. throughout the week. I hoped that by doing this I would be able to obtain a better sample of A.T.'s spontaneous language while he was interacting with his parents.
Session 2. First, I asked A.T. about a time that he hurt himself. Second, I again asked A.T. to tell me about what he did at nursery school. Third, I asked him about birthday parties, and fourth, I asked him about Halloween. Finally, I asked A.T. to tell his Dad the *Frog, where are you?* story. His father had been instructed about the use of prompts and again only minimal prompts were used.

Session 3. First, I had A.T. tell me a different story, *Just for You* (Mayer, 1975). His parents had read him this story for the previous four nights. Second, A.T. told the story of *Goldilocks and the Three Bears* using picture sequence cards. I arranged the ten pictures in the appropriate order and had A.T. tell me the story. A.T. had used these picture cards before and was familiar with the task and materials. Third, I asked A.T. to tell me about two different events: going to the zoo and getting his hair cut.

Description of Data

All tasks were transcribed manually using orthographic transcription, then they were coded and analyzed for particular narrative components. Transcriptions were made of the recordings in the following way. First I listened to each narrative. Then I listened to each narrative again and transcribed it verbatim. Next, I listened to the audiorecordings a third time to check the transcribed narratives for errors.

As a reliability check, a second coder listened to the tapes and noted errors in the transcriptions of the narratives. I then listened to the tapes again and checked the
discrepancies. We finally came to a joint decision on the discrepancies so that the final transcript, to be used for analysis, was judged to be reliable.

On the written transcript each line represented a clause and each clause was numbered. The narratives were divided into clausal units, because the clause is a linguistic unit that is easily identified and it is a convenient unit for narrative analysis. The definition of a clause that was adopted is from Berman et al. (1986). A clause is,

any unit that contains a \textit{unified} predicate...a predicate that expresses a \textit{single} situation (activity, event, state)...In general, clauses will be comprised [sic] of a single verbal element; however, infinitives and participles which function as complements of modal or aspectual verbs are included with the matrix verb as single clauses - e.g. want to go, started walking. (p. 37)

From the full transcript I identified the script, story, and personal narratives to be coded and analyzed. Scripts were narratives elicited with the phrase, "What do you do when _____?" These included scripts about nursery school, a birthday party, Halloween, the zoo, and getting a hair cut. Personal narratives were those narratives elicited with the phrase, "What happened when you _____?" These included going on a trip and getting hurt. Stories told from any of the books used were considered to be story narratives. The two stories told from the wordless picture-book were used as the data set. The other story narratives were also transcribed and the transcripts can be found in Appendix D.

Note that although these are typical procedures for eliciting narratives from normal-hearing children, there may be problems with these procedures due to A.T.'s hearing loss. With a severe hearing loss, not only are words difficult to hear, but certain morphological markers such as plurals and tense forms are very difficult to discriminate. For example, the distinction between "what happens" and "what happened" involves the discrimination of the
grammatical morphemes -s and -ed, and can influence the tense used to report the subsequent narrative. As such, the elicitation phrases used to prompt A.T. for the various narrative types may have been more difficult for him to hear and understand, thus possibly obscuring the distinction between script and personal narrative eliciting phrases.

Coding of Structural and Linguistic Components

In Chapter One, the narrative structures proposed by Stein and Glenn (1982), Labov and Waletzky (1967), and Shank and Abelson (1977) were discussed. These various structures were developed to describe three different narrative types; however, many of the categories in one structural description function in a way identical or similar to another category in a different narrative structure. For example, introductions, found in personal narratives, are similar to beginnings in a story narrative. The components of each narrative structure are outlined in Table 2, with an equal sign indicating those components which are similar across the narrative types. The coding section for A.T.’s three narrative types will be presented in a similar format to the one layed out in Table 2. Components common to all three narrative types will be described first. Then, categories found in both personal and story narratives will be described, and finally, components specific to each narrative type will be examined.

Components common to all three narrative types. All narratives were coded for the following structural or linguistic components:
Table 2: Outlines of the Components Found in Three Narrative Types: Script Narratives, Personal Narratives, and Story Narratives

<table>
<thead>
<tr>
<th>Script Narrative</th>
<th>Personal Narrative</th>
<th>Story Narrative</th>
</tr>
</thead>
</table>

**Components common to all three narrative types**

<table>
<thead>
<tr>
<th>perspective</th>
<th>perspective</th>
<th>perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>tense</td>
<td>tense</td>
<td>tense</td>
</tr>
<tr>
<td>temporal adverbs</td>
<td>temporal adverbs</td>
<td>temporal adverbs</td>
</tr>
<tr>
<td>ending</td>
<td>ending</td>
<td>ending</td>
</tr>
</tbody>
</table>

**Components found in personal and story narratives**

<table>
<thead>
<tr>
<th>introduction</th>
<th>beginning</th>
</tr>
</thead>
<tbody>
<tr>
<td>orientation</td>
<td>setting</td>
</tr>
<tr>
<td>complicating actions</td>
<td>attempts</td>
</tr>
<tr>
<td>evaluation</td>
<td>reaction</td>
</tr>
<tr>
<td>resolution</td>
<td>consequence</td>
</tr>
</tbody>
</table>

**Components specific to each narrative type**

<p>| alternative actions | -- |</p>
<table>
<thead>
<tr>
<th>explanation</th>
<th>--</th>
</tr>
</thead>
<tbody>
<tr>
<td>--</td>
<td>initiating event</td>
</tr>
<tr>
<td>--</td>
<td>internal response</td>
</tr>
</tbody>
</table>
1. **Perspective or Nominal form:** Each clause was coded for the occurrence in subject position of nominal forms: first person (i.e. *I* or the use of the child’s own name), second person (i.e. *you*), third person (i.e. *he/she, they*, definite nominals (e.g. *the* boy), indefinite nominals (e.g. *a* boy), and unmarked nominals (e.g. *boy*) or null subject.

2. **Tense:** Each clause was coded for the presence of a verbal element (present, past, or future tense) or the absence of a verbal element.

3. **Temporal adverbs:** Each clause was coded for the use of any temporal adverbs such as *then, after, next, first,* or *last.*

4. An **ending:** Each narrative was coded for the presence or absence of an ending device, which indicated to the listener that the narrative was finished.

Components found in personal and story narratives. The personal narratives and the story narratives were coded for the presence or absence of the following common structural components:

1. A **beginning** (or introduction) that signalled the start of the narrative. This could include stylized beginnings such as "Once upon a time" or an abstract, which is a summary of the narrative that is to follow.

2. A **setting** (or orientation) that contained information about participants, location, or time of the narrative. If the narrative contained enough information at the beginning for the subsequent events to logically follow, then the narrative was considered to have an orientation or setting.
3. **Complicating actions** (or attempts), which were the chronologically ordered series of events leading up to and including the main point or goal of the narrative.

4. An **evaluation** (or reaction) that revealed the point of the narrative and included the emotional reaction of the main character to the outcome of his actions. There are a number of techniques for conveying an evaluative comment (Peterson & McCabe, 1983). The use of prosodic stress, repetition of words or phrases, and lexical quantifiers such as *very, just* and *really* are all methods of making an evaluative comment. The use of any of these techniques was counted as an evaluation if it focused attention on or elaborated on the high point event.

5. A **resolution** (or consequence) which indicated whether the goal had been reached and contained information about how the experience ended. The resolution answers the question "What happened"? If there was a mention of direct attainment or nonattainment of the main character’s goal or if there was enough information as to how an event ended, the narrative was considered to have a resolution category.

Components specific to each narrative type. The script narratives were coded for the presence or absence of:

1. **Alternative actions**: marked by the use of *sometimes, usually, or or*.
2. **Explanations**: background information or elaborations to further explain why or how actions were carried out.

The story narratives were coded for the presence or absence of:
1. An **initiating event**, which was the description of an occurrence that changed the main characters environment and led him to need to achieve some sort of goal. If this change was either explicit or inferrable, the narrative was considered to have an initiating event.

2. An **internal response** was the main character's mental or emotional response to the initiating event. The statement of a goal is one component of the internal response, other components may be emotional reactions and thoughts or plans about how to reach the goal. If a goal and/or plans were explicitly or implicitly indicated in the narrative, it was considered to have an internal response.

The story narratives were also coded for the use of referential devices to maintain or switch reference between the two main characters in the story, i.e. the boy and the dog. Coding was performed as follows:

1. All introductions of the two main characters and/or reintroductions of the characters, after the mention of somebody or something else, were coded as **reference switching devices**.

2. All instances of maintaining reference to one of the protagonists, after an introduction or reintroduction, were coded as **reference maintaining devices**.

**Analysis of Data**

Once each narrative was coded appropriately, analysis of the data was performed. For each structural component or linguistic element, I give a rationale for how the presence of a structural component or linguistic element corresponds to developing cognitive knowledge or linguistically transmitted sociocultural knowledge. It should be noted that some of the components could be argued to require either linguistic sociocultural knowledge
or cognitive knowledge for their development. I have given my rationale for each component and support for my decisions comes from the literature, reviewed in Chapter One, on narrative development of normal-hearing children.

The spontaneous language sample, which included data from both A.T.'s interaction with me and with his parents, was analyzed. A.T.'s language level was estimated in terms of the Mean Length of Utterance (MLU; per Brown, 1973). From this analysis, A.T.'s stage of acquisition for pronouns, temporal adverbs, and tense was predicted. As well, A.T.'s Mean Length of Longest Utterances (MLUL) was calculated (per Wells, 1985). An analysis for various grammatical morphemes was performed and a comparison made to the predicted language stage, in order to determine if A.T. had the necessary linguistic abilities to allow a narrative analysis.

Analysis of Structural and Linguistic Components

Table 3 shows the various structural and linguistic components of the three narrative types and the knowledge type primarily responsible for the inclusion of each component in a narrative. The components common to all the narratives are perspective, tense, the use of temporal adverbs, and the inclusion of an ending device. Tense, perspective, and the use of temporal adverbs depend mainly on cognitive knowledge, whereas the use of an ending device relies more on linguistically transmitted sociocultural knowledge. All the specific structures of a script narrative require appropriate cognitive knowledge. For personal narratives the introduction, evaluation, and resolution categories require linguistic
### Table 3: Knowledge Types Needed for the Inclusion of Various Components in Each Narrative Type

<table>
<thead>
<tr>
<th>Knowledge Type</th>
<th>Linguistically transmitted sociocultural knowledge</th>
<th>Cognitive knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Components common to all three narrative types</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>use of appropriate perspective</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>use of appropriate tense</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>use of temporal adverbs</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>use of an ending device</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Components found in personal and story narratives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>introduction/beginning</td>
<td>X</td>
<td>(X)</td>
</tr>
<tr>
<td>orientation/setting</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>complicating action/attempt</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>evaluation/reaction</td>
<td>X</td>
<td>(X)</td>
</tr>
<tr>
<td>resolution/consequence</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Components specific to each narrative type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SCRIPT NARRATIVE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>alternative actions</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>explanations</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>STORY NARRATIVE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initiating event</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>internal response</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**

(X) = knowledge type also required but to a lesser degree
sociocultural knowledge, while the other components are primarily cognitively determined. Finally, for the story narrative, the beginning, internal response, consequence, and reaction categories all require predominantly linguistically transmitted sociocultural knowledge, and the setting, initiating event, and attempt categories depend mainly on appropriate cognitive development.

Table 4 shows the number of categories that involve linguistically transmitted sociocultural knowledge or cognitive knowledge for each narrative type. Note that all the narrative types involve about an equal number of categories relying on cognitive knowledge, whereas script narratives involve only one category relying on linguistically transmitted sociocultural knowledge, personal narratives involve four such categories, and story narratives involve the most for a total of five categories. Each of these categories will be described in more detail next.

Components common to all three narrative types. All narratives were analyzed in terms of the following structural and linguistic components:

1. Perspective: The criterion for perspective was defined as 75% or more of the clauses told in first person perspective, second person perspective, or third person perspective. Perspective is an important marker that differentiates all three narrative types. Researchers have found that even preschool aged children use the appropriate second person perspective for script narratives, first person perspective for personal narratives, and third person perspective for story narratives. Perspective is a cognitively determined structural component of narrative structure.
Table 4: Number of Categories Requiring Linguistically Transmitted Sociocultural Knowledge or Cognitive Knowledge in Each Narrative Type

<table>
<thead>
<tr>
<th>Narrative Type</th>
<th>Linguistically transmitted sociocultural knowledge</th>
<th>Cognitive knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Script Narrative</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Personal Narrative</td>
<td>4</td>
<td>5 (2)</td>
</tr>
<tr>
<td>Story Narrative</td>
<td>5</td>
<td>6 (2)</td>
</tr>
</tbody>
</table>

Legend:

( ) = categories that require both knowledge types
2. Dominant tense: The criterion for dominant tense was defined as 75% or more occurrences of either present or past tense verb forms out of the total number of verbs in the narrative. Tense is another important marker that differentiates between script narratives (present tense) and personal narratives or story narratives (past tense). Most studies have found that children as young as 3 1/2 years old have the necessary discourse conventions for tense usage in producing personal narratives. Correct tense usage is a cognitively determined component of narrative structure. Children do not need to hear narratives repeatedly in order to know that particular tense forms are used in reporting certain narrative types, because the tense is largely determined by the content of the narrative.

3. Temporal adverbs: The criterion for use of temporal adverbs was defined as the use of any temporal markers in at least one clause of the narrative and in an appropriate context; for example, the use of the word *first* at the beginning of a description of a chronologically ordered series of events. The use of temporal adverbs, in all narrative types, is important for establishing narrative cohesion. Children use these temporal adverbs to sequence a series of events. Young children are able to understand and remember sequences of events and, as such, the use of these temporal markers involves appropriate cognitive development. Children can hear these words many times but until they have the cognitive ability to understand the concepts of temporal sequencing they will not correctly use these terms.

4. An ending device: For a child to include a phrase such as "the end" or "that's all," he needs to have heard a number of examples of narratives with endings. Most of the research on narrative development indicates that only children who have had experience with various
narratives include an ending device and, therefore, this is a structural component that requires linguistically transmitted sociocultural knowledge.

Components found in personal and story narratives. The personal narratives and story narratives were analyzed for various structural components. Unless otherwise stated, the following elements were counted as present if there was at least one clause present in the narrative that could be counted as that component.

1. An introduction (personal narrative) or a beginning (story narrative): In order for a child to correctly use the stylized beginning "once upon a time", he would need to have heard many examples of narratives that included beginnings. The omission of a beginning component is common in preschool-aged children because they have had less experience with narratives, and thus the inclusion of this component requires linguistically transmitted sociocultural knowledge. Including an introduction or beginning also requires that the narrator be able to take another person's perspective. The narrator must anticipate the listener's needs and include an opening statement to indicate the start of a narrative. The ability to take the listener's perspective into consideration is already apparent in the preschool years (Hudson & Shapiro, 1991). Therefore, the inclusion of a beginning category requires appropriate cognitive knowledge. However, even though preschool-age children demonstrate the ability to consider another person's perspective, they do not typically include a beginning component in their narratives; therefore, I chose to count this structural element as a linguistically transmitted socioculturally determined component.
2. An orientation (personal narrative) or setting (story narrative): The clause(s) could include information on at least one of the three types of orienting information (participants, location, or time). Preschool-age children commonly supply names and places when telling a narrative. As with an introduction, to include an orientation or setting requires the narrator be able to anticipate the needs of the listener and be able to take another person's perspective. I concluded that these components require appropriate cognitive knowledge. A child need not have heard many examples of well-formed narratives in order to know that an introduction to main characters and descriptions of the surrounding environment are important components of a narrative.

3. Complicating actions (personal narratives) or attempts (story narratives): These included at least two or more clauses that were events leading up to and including the main point of the narrative. Young children often include complicating actions in their personal narratives because they are able to understand and remember sequences of events. In story narratives the attempt category is included but often co-occurs with the internal response category. Despite the fact that preschoolers do not include a separate attempt category in their story narratives, the incorporation of two components into one category still indicates that preschool-aged children know to provide information about goals and how they are to be achieved. A child does not need to hear a number of narratives in order to know that complicating actions and attempts are important components of a narrative structure. Even though there is this discrepancy as to the inclusion of these categories in children's personal and story narratives, I concluded that these structural components require appropriate cognitive knowledge for their inclusion in a narrative.
4. An **evaluation** (personal narrative) or **reaction** (story narrative): With age and more experience children include more complicated evaluative devices, the exact nature of which may be dictated by their dominant culture. However, children as young as 3 years old use various techniques, such as repetition, in order to reveal the importance of their personal narrative to the listener. Thus, evaluations require both cognitive and linguistically transmitted sociocultural knowledge. In story narratives the reaction is often omitted by preschoolers. It is with more exposure to story narratives that children learn to include the emotional reaction of the main character to the outcome of his actions. Personal narratives are a narration of a child's own experience and, therefore, the inclusion of an evaluative comment is expected in this condition more than in a story narrative, where a child is telling about events concerning someone else. From this discussion, it is obvious that there is a conflict in the literature as to the inclusion of these categories in either a personal narrative or a story narrative. If a child can include the category in one narrative type but not another, then the component must require linguistically transmitted sociocultural knowledge more than cognitive knowledge; otherwise it would be included in both narrative types.

5. A **resolution** (personal narrative) or **consequence** (story narrative): Most young children finish a personal narrative or story at the high point and do not include a resolution to the narrative. It is with exposure to the telling of personal narratives that children come to understand that a good narrative includes an encapsulation of how the events finished. Thus, this component requires linguistically transmitted sociocultural knowledge. On the other hand, preschool children generally include a consequence category in their story narratives. If a child knows there is a "cause" to a problem then they also understand that
there is an "effect." The consequence category is the effect of the initiating event. This cause and effect relationship is understood by young children (Hudson & Shapiro, 1991) and involves appropriate cognitive knowledge. As was the case with evaluations and reactions, there is a discrepancy between the inclusion of resolution and consequence categories in personal and story narratives. Therefore, I concluded that these categories require more linguistically transmitted sociocultural knowledge than cognitive knowledge for their inclusion in a narrative.

Components specific to each narrative type. The script narratives were analyzed for:
1. The use of alternative or optional actions in at least one clause of the narrative. The use of terms like sometimes or usually requires that a child have the ability to understand temporal/causal relationships. Thus, optional action markers require the child have appropriate cognitive development in order to use these markers appropriately.
2. The use of explanations: which included any clause(s) that elaborated on how or why an action was carried out. The use of explanations requires that the child have the cognitive knowledge required to elaborate on a given piece of information. Young children tend to report facts with little extra detail, as they have not yet developed the ability to build on a stated proposition.

The story narratives were analyzed for the presence of at least one clause for each of the following components:
1. The initiating event: The initiating event is the "cause" of a problem and gives a reason for telling a story. Young children have the concept of cause and effect relationships
(Hudson & Shapiro, 1991) and therefore, include an initiating event without having heard
many examples of a story narrative. This component requires cognitive knowledge.

2. An internal response: Young children generally do not include an internal response
category. As mentioned above, this category often co-occurs with the attempt category. For
a child to include the emotional responses of the main character requires that the child have
heard examples of story narratives. This component involves linguistically transmitted
sociocultural knowledge.

The story narratives were also analyzed for the use of a linguistic marker of narrative
structure that contributes to the coherence of the narratives.

1. Referential Devices: The use of referential devices aids in the thematic development of
a story, as opposed to episodic development. Referential devices are used to follow the
development of the main characters throughout the story. Whereas the structural
components included in the story narratives focused on knowledge at a macrolevel, use of
referential devices to achieve cohesion focuses on microlinguistic knowledge, in that it is
specific linguistic constituents that are used to signal story structure. For each story
narrative, the number of pronominal and nominal forms used to switch or maintain
reference to the boy and the dog were determined. More specifically:

   a. The total number of devices used to refer to the boy and to the dog;

   b. The number of devices used to switch and maintain reference to the boy as
      well as to the dog;

   c. The number of nominal and pronominal forms used to refer to the boy and to the
dog;
d. The number of devices used to switch reference to the boy and to the dog;
e. The number of devices used to maintain reference to the boy and to the dog.

Summary of Analysis Procedures

The script narratives were analyzed for six components: perspective, tense, temporal adverbs, alternative actions, explanations, and an ending device. The personal narratives were analyzed for nine components: perspective, tense, temporal adverbs, introduction, orientation, complicating actions, evaluation, resolution, and an ending device. The story narratives were analyzed for eleven components: perspective, tense, temporal adverbs, beginning, setting, initiating event, internal response, attempt, consequence, reaction, and an ending device. The story narratives were further analyzed for the use of referential devices. The following chapter gives the results for each of these analyses of A.T.'s narratives.
CHAPTER THREE

RESULTS

Results of Analysis of the Spontaneous Language Sample

The language sample (Appendix E) indicated that A.T. had a Mean Length of Utterance (MLU) of 4.35. This MLU put him at Brown's stage V (1973), where children have usually mastered the use of possessives ('s), plurals, prepositions (in, on), contractible and uncontractible copula be, articles (a, the), and various tense forms (irregular and regular past tense, present progressive). However, MLU is a crude measure of grammatical acquisition and is only useful for predicting grammatical development up to the age of 42 months (Wells, 1985). Furthermore, Wells suggests that the Mean Length of Longest Utterances (MLUL) is a better indicator of grammatical development after the age of 42 months, and is "somewhat equivalent to Brown's 'upper bound'" (p. 122). Using the five longest utterances in the language sample, A.T.'s MLUL was calculated to be 9.60. If MLUL is equated to Brown's upper bound, this calculation puts A.T. between Brown's stages III and IV, where children have usually acquired possessives, plurals, prepositions, uncontractible copula be, articles, the irregular past tense and the present progressive, but have not yet acquired the regular past tense and the contractible copula be. A.T.'s language sample revealed that he produced the following grammatical morphemes: some possessives, (numbers before examples refer to clause numbers in the language sample in Appendix E) e.g.,

1. A.T.'s camera
3. one Daddy's camera

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some plurals (*words, batteries, games*), some prepositions (*in, on, out, down*), the contractible copula *be*, articles (*a, the*), and various tense forms (past, present progressive, present indicative, future). However, A.T.’s use of these morphemes was not consistent. For example, A.T. commonly omitted articles (* indicates an omitted article), e.g.,

2. Elizabeth and my mommy have * camera
21. and after we read the book all up then try and play * computer?
51. and I played * Mickey Mouse game.

A.T. was also inconsistent with his use of the contractible copula *be* (e.g., 16. he sick) and with his tense forms. Furthermore, he often switched between tenses as he spoke, e.g.,

38. I sleep in
39. I woke up

There was also difficulty in interpreting A.T.’s language sample, particularly his use of articles. For example, quite often A.T. used [*] before a noun and it was impossible to determine if he meant *a* or *the* (e.g., 69. in [*] big hole). This is typical of normal-hearing preschoolers when they are learning to use articles.

Interpretation of portions of a number of utterances was impossible or tentative because there was no one-to-one correspondence between syllables and morphemes that A.T. was judged to have attempted (e.g., 21. he’s XX (some) flies, Appendix H, Story 1).

In terms of clauses, A.T. produced declarative (e.g., 8. I have one yellow camera) and interrogative sentences (e.g. 27., what did Elizabeth say?). With respect to question formation, A.T. produced both yes/no and Wh- questions, e.g.,

26. you know the button?
20. where your storybook?
Overall, A.T. produced syntactically complete sentences (i.e., major clause constituents - subject, verb, object - were present); however, his inconsistent use of grammatical morphemes did make his sentences less complete than normal-hearing preschoolers’ utterances. In the language sample, A.T. produced a few complex sentences. These included sentences with full infinitive clauses (e.g., 68. A.T. going to go swimming) and with adverbial clauses (e.g. 21., and after we read the book all up then try and play computer?).

Due to his inconsistent use of various grammatical morphemes and low proportion of complex sentences, A.T. was not at the same language level as a normal-hearing 4-year-old. However, it was still possible to perform the structural analyses of his three narrative types. Specifically, the analysis of the structural components present in each narrative was not affected by his inconsistent use of grammatical morphemes. Nevertheless, some difficulty with the analyses were anticipated. For example, A.T.’s inconsistent use of definite and indefinite articles necessitated a simplified reference analysis procedure (i.e., analysis of referential devices in terms of nominal versus pronominal forms, but not in terms of whether the nominal forms were marked with an indefinite or definite article). The extent to which the analyses were compromised by A.T.’s morphosyntactic production will be discussed in Chapter Four.

Results of Analysis of Structural and Linguistic Components

For each of the narrative types, I report the various linguistic and structural components that are present or absent. The results are presented as follows: first, the
linguistic components of perspective, tense, and temporal adverbs; and second, the various structural components found in each narrative type.

Methodological Considerations

Before discussing the results it is important to clarify some of the analytic decisions made in this study. The narratives were divided into clausal units using the definition of a clause from Berman et al. (1986), because this allowed consistency in cross-study comparison. Berman's definition (in its strictest interpretation) excludes any unit that does not contain a verbal element, leading to some problems in the tense analysis in the present study. I coded clauses for the presence of a verbal element (past, present, or future tense) or for the absence of a verbal element. As such, my use of Berman's definition of a clause was less rigid than her original use of the definition. In particular, I focused on the portion of the definition concerned with "any unit that expresses a unified predicate...that expresses a single situation" (p. 37). Therefore, I was able to code utterances that did not contain a verbal element as clausal units. The coding of utterances as to whether or not they contained a verbal element was not always straightforward. For example, ellipsis of a verbal element occurred in some of A.T.'s clauses, e.g.,

5. and going to somebody's house
6. Kaye's house
7. Tyler's house
8. Terry's house (Appendix F, Script 2).

Clauses 6, 7, and 8 could be counted as containing a verbal element by means of ellipsis; however, in these situations I chose to code the clauses as not containing a verbal element. In the results, the clauses that did not contain verbal elements were described. However,
in using a 75% criterion for determining the dominant tense in a narrative, only the clauses containing verbal elements were used.

Script Narratives

Over the three sessions, A.T. produced six script narratives. These narratives appear in full in Appendix F, including the prompts used by the examiner.

Table 5 summarizes the components present in A.T.’s script narratives, as well as the total number of clauses in each script. Clause numbers in the following discussion correspond to the numbering in Appendix F.

Perspective: In only one of A.T.’s scripts, Script 6, did he use pronouns, and in this case one of five clauses was reported using a first person pronoun and one using a third person pronoun. These clauses accounted for fewer than half of the clauses in Script 6. In his other five scripts, all clauses were unmarked for perspective. Therefore, of the forty total clauses in A.T.’s six scripts, two were marked, one with a first person pronoun and one with a third person pronoun, and thirty-eight (95%) were unmarked for perspective. Overall, these results indicated that A.T. did not mark perspective in his script narratives.

Tense: Many utterances in the scripts did not contain a verbal element. In Scripts 1 and 2, A.T. used more than one tense for reporting the narratives. For Script 1, one of nine clauses was reported in the past tense, four of nine in the present, and four of nine did not contain a verbal element. In Script 2, four of eight clauses were reported in the present tense, one clause was reported in the future tense and three clauses did not contain a verbal element. A.T.’s use of tense was consistent in Scripts 3, 4, and 6, where all clauses marked
Table 5: Number of Clauses Containing Specific Components in A.T.’s Script Narratives

<table>
<thead>
<tr>
<th>Script Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

**Linguistic Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>pronouns</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>first person</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>second person</td>
<td></td>
<td></td>
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<td></td>
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**Structural Components**

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**total number of clauses**

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<td>7</td>
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<td>5</td>
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</tbody>
</table>

**Script Numbers**

1. nursery school script
2. nursery school script
3. birthday party script
4. halloween script
5. zoo script
6. haircut script
for tense were reported in the present (three of seven, one of seven, and two of five, respectively). In Script 5, no clauses contained a verbal element. Overall, of the forty total clauses in A.T.'s script narratives, twenty-four (60%) did not contain a verbal element. Of the sixteen clauses (40%) that contained verbal elements, one was reported in the past tense, one was reported in the future tense, and fourteen (88%) were reported in the present tense. Using the 75% criterion for determining dominant tense, A.T.'s scripts were reported in the present tense.

Temporal adverbs: Only two of A.T.'s scripts contained temporal adverbs; therefore there was little evidence of the use of temporal adverbs. In Script 1, A.T. used the word then (e.g., 5. then, do in the police station car), and in Script 4, he used the words first and then, e.g.,

4. first Halloween
5. then Christmas
6. then Easter Bunny
7. then A.T. birthday.

In Script 4, A.T. used temporal adverbs to create cohesion within the script. He had the correct form of "telling" a script narrative in a sequential order; however, the content of the narrative was not what was expected. He had been asked to tell me about Halloween and instead he listed off all the holidays from Halloween to his own birthday. Overall, of the forty clauses in A.T.'s scripts, six (15%) contained temporal adverbs.

Endings, Alternative actions, and Explanations: A.T.'s scripts all contained actions in so far as there were verbal elements within the clauses and he did report "what you do when." In terms of specific structural components, A.T. included an ending component in
Script 3, that signalled the completion of the narrative (e.g., 8. that’s enough). A.T. did not include alternative actions or explanations in any of his script narratives.

Personal Narratives

A.T. told two personal narratives. These narratives appear in Appendix G, and include the interaction with the examiner. Clause numbers in the following discussion correspond to the numbering in Appendix G.

Perspective: Table 6 shows the components present in A.T.’s personal narratives, as well as the total number of clauses. In Personal Narrative 1, A.T. reported one of six clauses using a first person pronoun, three clauses using third person pronouns, and two clauses were unmarked in the subject position. In Personal Narrative 2, A.T. reported four of nine clauses using first person pronouns and five clauses were unmarked for perspective. Thus, for a total of fifteen clauses in the two narratives, five were reported using first person pronouns (33%), three were reported using third person pronouns (20%), and seven were unmarked for perspective (47%). From these values, it is obvious that the 75% criterion for determining perspective was not met. However, for Personal Narrative 1, before I gave the prompt for a personal narrative, A.T. spontaneously began to report the narrative in the first person (e.g. "I went skiing"; "I went grandma grandad house"). As I had not yet prompted with the question "What happened?" I could not count these utterances as part of the personal narrative. This indicated to me that A.T knew that personal narratives were to be reported in the first person, so despite the fact that A.T. did not meet the 75% criterion,
Table 6: Number of Clauses Containing Specific Components in A.T.’s Personal and Story Narratives

<table>
<thead>
<tr>
<th>Linguistic Components</th>
<th>Personal Narratives</th>
<th>Story Narratives</th>
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<tbody>
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<td>1</td>
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<tr>
<td>pronouns</td>
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<td>third person</td>
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</table>

<table>
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<th>Structural Components</th>
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<tbody>
<tr>
<td></td>
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<td>2</td>
</tr>
<tr>
<td>introduction/beginning</td>
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<td>--</td>
</tr>
<tr>
<td>orientation/setting</td>
<td>--</td>
<td>3</td>
</tr>
<tr>
<td>initiating event</td>
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</tr>
<tr>
<td>internal response</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>complicating action/attempt</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>evaluation/reaction</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>resolution/consequence</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>ending</td>
<td>--</td>
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</tr>
</tbody>
</table>

total number of clauses 6 9 40 27

Personal Narrative
1. trip narrative
2. hurting himself narrative

Story Narratives
1 and 2 are from the book
Frog, where are you?
my general conclusion was that A.T. did report his personal narratives using first person perspective.

Tense: In Personal Narrative 1, four of six clauses contained a verbal element. Of these four clauses, all were reported in the past tense. In Personal Narrative 2, four of nine clauses contained a verbal element. Again, of the clauses marked for tense all were reported in the past tense. Overall, of fifteen clauses in the two personal narratives, seven clauses (47%) did not contain a verbal element and eight clauses (53%) contained verbal elements. Of these eight clauses containing verbal elements, all the clauses were reported in the past tense. This meets the 75% criterion for past tense as the dominant tense in A.T.'s personal narratives.

Temporal adverbs: A.T. did not use any temporal adverbs in either of his personal narratives.

Narrative Components: As shown in Table 6, A.T. included orientations (e.g., 3. A.T. went skiing, Personal Narrative 2), complicating actions (e.g., 8. because A.T.'s foot came (ally), Personal Narrative 2) and evaluations,

1. Santa came
2. Santa came
3. Santa came (Personal Narrative 1)
4. and A.T. came fall up the ice
5. and A.T. came fall up, uh the ice (Personal Narrative 2).

A.T. did not include an introduction, resolution, or an ending device in either of his personal narratives.
Story Narratives

Both of A.T.'s story narratives, told using the picture-book *Frog, where are you?*, were analyzed for the components discussed in Chapter 2. A.T.'s narratives appear in Appendix H; the examiner's and parent's prompts have been included in the transcripts. Clause numbers in the following discussion correspond to the numbering in Appendix H.

Perspective: Table 6 shows the components present in each story narrative, as well as the total number of clauses. In Story 1, thirty-three of the forty clauses (83%) were reported using third person pronouns and seven clauses (17%) were unmarked for the use of perspective. In Story 2, twenty-six of twenty-seven clauses (96%) were reported using third person pronouns and one clause was unmarked for perspective. Therefore, of sixty-seven clauses in the story narratives, eight clauses (12%) were unmarked for perspective and fifty-nine (88%) were reported using third person perspective. Therefore, the 75% criterion was met.

Tense: In Story 1, twenty-nine of forty clauses (73%) contained a verbal element. Of these clauses, six (21%) were reported in the past tense and twenty-three clauses (79%) were reported in the present tense. In Story 2, twenty-five of twenty-seven clauses (93%) contained a verbal element, with three of these clauses (12%) reported in the past tense and twenty-two clauses (88%) reported in the present tense. Therefore, of the sixty-seven clauses in total, fifty-four (81%) contained a verbal element. Of these clauses, nine (17%) were reported in the past tense and forty-five (83%) were reported in the present tense. A.T.'s dominant tense for reporting his story narratives was the present tense.

Temporal adverbs: A.T. did not use any temporal adverbs in either of his story narratives.
Narrative Components: In neither story narrative did A.T. include a beginning. In both stories he included a setting:

1. frog, dog, boy
2. frog, dog, (eit mik)
6. winter time
7. in the fall time? (Story 1)

1. there’s a frog
2. frog in the glass
3. frog in the glass and dog looking at [a] frog
4. and little boy and dog sleeping on [j] bed (Story 2),

initiating event:

3. ...and frog came out
4. and he XX be gone (Story 1)

5. the frog climbing, crawling out (Story 2),

internal response:

17. and he said "whoop"
18. and, and he said "oh no"
19 and he said "run away" (Story 1)

6. and little boy says "oh no, no frog"
7. and he say "where’s frog, where’s frog" (Story 2),

attempts:

14. and, and he look in there
15. frog, frog (Story 1)

11. he say "frog, frog"
12. he’s looking at (Story 2),

and consequences:

36. and he say ‘here we are, there we are’ (Story 1)

25. and he found the frog (Story 2).
In Story 2, he also included a reaction (e.g., 27. he said ‘I will take the small one bye’) and in Story 1, he included an ending device (e.g., 40. look, the end).

Results of Analysis of the Referential Devices Used in A.T.’s Story Narratives

Table 7 shows the number and type of referential devices used in both of A.T.’s story narratives. This table can be examined in a number of ways:

1. Distribution of focus between the two protagonists: As shown in Table 6, A.T. referred to the boy more often than the dog in both stories (85% in story narrative 1, 82% in story narrative 2). Normal-hearing children refer to the boy more often than the dog (Bamberg, 1987).

2. Distribution of switching and maintaining reference: From the total number of referential devices used by A.T., including both pronominal and nominal forms, there were twice as many devices used for maintaining reference to the boy as for switching reference to the boy. In story 1, 70% of all referential devices were used for maintaining reference to the boy and in story 2, 64% were used for maintaining reference to the boy. For referring to the dog, very little data was available, but from the data presented it seemed that referential devices were used for switching reference more than for maintaining reference (100% in story 1, 66% in story 2). The pattern found for A.T. differs from that found for normal-hearing preschoolers who use more devices to switch reference to the boy or dog than to maintain reference (Bamberg, 1987).

3. Pronominal form versus nominal form: Data, from both of A.T.’s stories, revealed a clear preference for referring to the boy by use of pronominal forms. In both stories, 78%...
Table 7: Number and Type of Referential Devices Used in A.T.’s Story Narratives

<table>
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<tr>
<th></th>
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<td>MR</td>
<td>total</td>
<td>SR</td>
<td>MR</td>
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**Legend**

SR = switch reference  
MR = maintain reference
of the references to the boy were made using pronominal forms. There was little data for the dog, but the data revealed a slight preference for the use of the nominal form when referring to the dog (50% in story 1, 66% in story 2). Normal-hearing preschoolers more often refer to the boy pronominally and the dog nominally (Bamberg, 1987).

4. Distribution of forms as a function of switching reference: Whether A.T. was switching to the boy or the dog, he used an essentially equal portion of nominal and pronominal forms. In contrast, Bamberg’s data indicated that normal-hearing preschool-age children switch reference to the boy by use of the pronominal form and switch reference to the dog by use of the nominal form.

5. Distribution of forms as a function of maintaining reference: In both stories, A.T. maintained reference to the boy by using the pronominal form (88% in story 1, 100% in story 2). There was only one example of maintaining reference to the dog and it indicated A.T. used the nominal form rather than the pronominal form. A.T.’s performance was like that of normal-hearing preschoolers who show a strong tendency to maintain reference to the boy or the dog by the use of the pronominal form.

Results of Analysis of the Story Narrative Told by a Normal-Hearing 4-year-old

As mentioned in Chapter 2, the transcript of a normal-hearing 4-year-old child’s story narrative (Appendix B) was analyzed in the same manner as were A.T.’s story narratives. The results of this analysis are not presented in as much detail as the results for A.T.’s story narratives. A description of the components present and absent in this child’s narrative and
his/her use of referential devices was sufficient to illustrate similarities and differences with A.T.’s performance.

Table 8 shows the components present in a normal-hearing 4-year-old child’s story narrative. This child reported the narrative using the third person perspective (97% of clauses) and the past tense (97% of clauses). The child included temporal adverbs, initiating events, an internal response, attempts, and a consequence category, but did not include a beginning, a reaction, or an ending device.

Table 9 shows the number of referential devices used in this child’s narrative. The results indicated that the child used referential devices in essentially the same manner as the normal-hearing preschoolers described in Bamberg’s study. This child referred more often to the boy than to the dog (85%), used more referential devices for switching reference to either the boy (59%) or the dog (67%) rather than maintaining reference, used the pronominal form for referring to the boy (94%) and used both the nominal and pronominal form for referring to the dog, used the pronominal form when switching reference to the boy (100%) and the nominal form when switching reference to the dog (100%), and used the pronominal form when maintaining reference to either the boy or the dog (86% and 100%, respectively). These results and those of the components present in this child’s narrative will be compared to A.T.’s story narrative productions in the discussion chapter to follow.

Summary of the Results

In the script narratives, A.T. reported the narratives using no specific perspective,
Table 8: Number of Clauses Containing Specific Components in a Normal-Hearing 4-year-old's Story Narrative

<table>
<thead>
<tr>
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<td>tense</td>
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<table>
<thead>
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**Total number of clauses**: 35
Table 9: Number and Type of Referential Devices Used in a Normal-Hearing 4-year-old's Story Narrative

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<td>to the BOY</td>
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</tr>
<tr>
<td>nominal</td>
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<td>pronominal</td>
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</tr>
<tr>
<td>total</td>
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<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Legend

SR = switch reference
MR = maintain reference
producing only two pronouns in one of six scripts, and reported the narratives in the present tense. For the personal narratives, A.T. used first person perspective and past tense, as well as including orientations, complicating actions, and evaluations. In the story narratives, A.T. reported his narratives using third person perspective and the present tense, and he included settings, initiating events, attempts, consequences, a reaction, and an ending. For referential marking, A.T.:

1. referred to the boy more often than the dog;
2. used more of his referential devices for maintaining reference to the boy rather than switching reference and for switching reference to the dog rather than maintaining reference;
3. used the pronominal form for referring to the boy and the nominal form for referring to the dog;
4. used the nominal and pronominal forms when switching reference to either the boy or the dog;
5. used the pronominal form when maintaining reference to the boy and the nominal form for maintaining reference to the dog.

The next chapter contains a discussion of these results and makes detailed comparisons between A.T.'s narrative productions and those of normal-hearing children.
Results of the studies of the narrative development of normal-hearing children and the language development of hard-of-hearing children reviewed in Chapter One led to the following hypotheses:

1. A.T. would show less differentiation in narrative structure among the three narrative types than normal-hearing preschoolers;
2. A.T. would produce script and personal narratives that were structurally similar to those produced by normal-hearing preschoolers;
3. A.T. would produce story narratives that were structurally different from those produced by normal-hearing children; specifically, his narratives would be structurally less complex.

This chapter contains a discussion of the results and presents some conclusions regarding the narrative development of this severely hard-of-hearing child.

Before entering into a discussion of A.T.'s narrative abilities, a few words on the elicitation of narratives are needed. The structural complexity of young children's narratives is very much affected by the elicitation context. Normal-hearing preschool children reportedly produce longer and more complex narratives spontaneously in conversation than when they are explicitly asked to tell a narrative. It is obvious that the shared information of listener and speaker should affect the use of each of the structural categories (Lahey, 1988). For example, in an ongoing conversation, an introduction is necessary to capture the listener's attention and orient the listener to the story to follow, whereas in an experimental
elicitation context, the listener is already attending to the subject and oriented to the narrative to be reported. For all of his narrative productions, A.T. was specifically asked to produce a particular narrative type. Especially, for the scripts and personal narratives, the elicitation procedure used may have influenced the results. By specifically asking A.T. to tell me about a particular event, he did not need to give an orienting statement because I had already provided that for him. Similarly, for the story narrative condition, there was shared knowledge between A.T. and his parents (i.e. the book was in front of them throughout the storytelling task). However, A.T. knew that neither of his parents had ever seen the book; thus, he knew there was information he needed to convey to them that he might not have conveyed to me had he been telling me the story. The elicitation procedures for the story narrative did not influence the results obtained in that A.T. included a setting statement to orient the listeners to the story.

A.T.'s Narrative Abilities

The data presented in Table 10 summarizes the structural and linguistic components present in A.T.'s script, personal, and story narratives. While the number of narratives collected was small, it did allow a description and comparison of A.T.'s narrative abilities to those of normal-hearing preschoolers.

The results from Chapter Three can be summarized, with respect to the hypotheses formulated in Chapter One, as follows:

1. A.T. showed more differentiation among his three narrative types than was expected.
Table 10: Summary of the Structural and Linguistic Components Present in A.T.'s Narratives

<table>
<thead>
<tr>
<th>Narrative Type</th>
<th>Script Narratives</th>
<th>Personal Narratives</th>
<th>Story Narratives</th>
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**Legend:**

X indicates the presence of the component
2. A.T. produced script and personal narratives structurally similar to those produced by normal-hearing preschoolers;
3. A.T. produced story narratives that were structurally different from those produced by normal-hearing preschoolers; specifically, contrary to the prediction, the narratives were structurally more complex rather than structurally less complex.

Each of these statements will now be discussed in more detail, with references being made to the studies described in Chapter One.

Hypothesis 1: A.T. would show less differentiation among the three narrative types than normal-hearing preschoolers. Overall, A.T. displayed more differentiation among his narratives than predicted.

Perspective: As expected, A.T. did use different perspectives to report his three narratives. Normal-hearing preschoolers report script narratives using the appropriate second person perspective, personal narratives using first person perspective (Hudson & Shapiro, 1991), and story narratives using third person perspective (Berman, 1988). In comparison, A.T.'s scripts were unmarked for perspective, personal narratives were reported in the first person, and story narratives were reported in the third person. It was unusual that A.T. did not use second person perspective to mark his script narratives; however, it is worth noting that he did use perspective differently in his script narratives compared to how he used perspective in either his personal or story narratives. In the early stages of language development normal-hearing children talk mostly in the "here and now," so the referents mentioned are usually shared in the immediate context. The pronoun you is first learned
in this "here and now" context to refer to a person the child is talking to directly. The more abstract use of you, to mention people in general, is acquired later (Karmiloff-Smith, 1979). Perhaps A.T. has not yet acquired this more abstract use of the pronoun you. However, the fact that A.T. used a different method of marking perspective in his scripts, as compared to personal and story narratives, indicated that he was making a distinction between the use of various perspectives in different narrative types.

Tense: I had expected A.T. to report his scripts in the present tense and his personal and story narratives in the past tense. A.T. did use the present tense to report his scripts and the past tense to report his personal narratives. However, an interesting difference between A.T.'s story narratives and those of normal-hearing children was A.T.'s use of the present tense to report the stories. Most normal-hearing preschool children report story narratives using the past tense (Hudson & Nelson, 1984). As well, the data from the normal-hearing case provided further evidence that normal-hearing preschoolers tell stories in the past tense. However, Berman (1988) stated "the special situation of picture-book based storytelling means past or present tense is equally suitable as a temporal anchoring for the narrative" (p. 483). Of sixteen narratives by adults elicited using the Frog, where are you? story, half told the story in the past tense and the other half in the present tense (Berman, 1988). Therefore, the fact that A.T. used present tense may mean he has not acquired the discourse convention of telling stories in the past tense, or it may mean that he has chosen the more deictic "here and now" position from which to report his narrative. It is interesting to note that A.T. also reported the story The Berenstain Bears and the Messy Room in the present tense.
Narrative Components: Most surprising of all was that A.T. included so many structural and linguistic components in his story narratives. Each of the three narrative types is distinguished by the order and manner in which it is narrated (i.e. the structure). By including various structural and linguistic components in his story narratives -- which will be discussed in more detail later in this chapter -- A.T. displayed more differentiation among the narrative types than most normal-hearing preschoolers would have displayed.

Hypothesis 2: A.T. would produce script and personal narratives that are structurally similar to those produced by normal-hearing preschoolers. In general, A.T. did produce script and personal narratives structurally similar to those produced by normal-hearing preschoolers.

Script Narratives: I had expected A.T. to use second person perspective and the present tense to report his script narratives. According to Hudson and Shapiro (1991), the use of appropriate perspective and tense was evident in normal-hearing preschoolers’ script narratives. As mentioned above, contrary to my expectations, A.T. did not report his script narratives in the second person; however, he did mark his scripts using unmarked perspective and as expected he reported the scripts in the present tense.

I had expected A.T. to include temporal adverbs in his script narratives; however, I did not expect him to include alternative actions, explanations or an ending device. Hudson and Shapiro (1991) found very few normal-hearing preschool children who included any of these categories in their script narratives. A.T.’s narratives contained a few examples of temporal adverbs and one ending statement, but as mentioned in Chapter Three, no conclusions can be made as to the significance of A.T.’s use of temporal adverbs in his
scripts. Generally, A.T.'s scripts followed closely the temporal sequence of events and, as with normal-hearing preschoolers, he was reporting general knowledge about what happens. Overall, A.T.'s script narratives were comparable to those of normal-hearing preschool children.

Personal Narratives: As expected, A.T. used first person perspective and the past tense to report his personal narratives. It was unusual that A.T. did not include any temporal adverbs in his personal narratives; however, as he produced only two short personal narratives, the lack of temporal adverbs may have been a result of the small data pool.

As expected, A.T. included orientations and complicating actions in his personal narratives. Surprisingly, A.T. also included an evaluation category. In Chapter Two, I argued that evaluations required predominantly linguistically transmitted sociocultural knowledge; however, most normal-hearing preschoolers do include an evaluation in their personal narratives (Hudson & Shapiro, 1991). It may be that, afterall, the inclusion of an evaluation category requires more cognitive knowledge than linguistically transmitted sociocultural knowledge, or it may be that little exposure to personal narratives is needed for a child to acquire the linguistically transmitted sociocultural knowledge required to include an evaluation.

The various components A.T. did not include - an introduction, resolution, and ending device - were not expected in his narratives, as they required linguistically transmitted sociocultural knowledge. A.T. may not have had the opportunity to hear enough personal narratives containing introductions, resolutions, and endings to have acquired the appropriate
linguistically transmitted sociocultural knowledge needed to include these categories. As was the case with the script narratives, A.T. produced personal narratives that were comparable to those produced by normal-hearing preschoolers.

Hypothesis 3: A.T. would produce story narratives structurally less complex than those of normal-hearing children. In fact, he produced more complex story narratives. The analyses of the story narratives were the most surprising. I had expected A.T. to produce story narratives less structurally complex than normal-hearing children because he has a severe hearing loss and his language development is delayed. Much of A.T.'s language therapy focuses on vocabulary and syntactic development. Therefore, A.T.'s linguistically transmitted sociocultural environment is different from that of normal-hearing preschoolers. Stories are read with A.T. much the way they are read to a younger child. Emphasis is on the naming of pictures (for vocabulary development) and describing events or asking questions (for syntactic development) (Roser & Martinez, 1985). Appendix D (transcript 1) demonstrates such interactions between A.T. and his mother as they read a story book.

I had expected A.T. to report his story narratives using third person perspective and the past tense, as well as include temporal adverbs, a setting, initiating event, and attempts. However, contrary to the prediction, A.T. also included an introduction, internal response, reaction, and end device. As mentioned before, A.T. used third person perspective and the present tense to report his story narratives. A.T. did not include any temporal adverbs; however, he did use various cohesive devices in order to create cohesion in his narratives. In terms of the structural components present, A.T., included a setting, initiating events,
internal responses, attempts, and consequences in both of his narratives. A.T. also included a reaction category in story narrative 2 and an ending device in story narrative 1.

Overall, the inclusion of so many structural elements in his story narratives was quite unexpected. Normal-hearing 4-year-old children generally do not include as many of these categories, particularly reactions and endings. The results of my analysis of the normal-hearing 4-year-old child's story narrative revealed that he/she reported the narrative using third person perspective and the past tense, as well as including temporal adverbs, initiating events, internal responses, attempts, and consequences. Unlike A.T., this child did not include a reaction category or an ending device. The results, for the case I analyzed, were in keeping with the results of normal-hearing children reported in Chapter One.

A.T. included four categories in his story narratives that required linguistically transmitted sociocultural knowledge, according to the categories of the current study: internal responses, consequences, reactions, and an ending device. The inclusion of these categories made A.T.'s narratives structurally more complete than typical normal-hearing preschoolers' story narratives.

Berman (1988) concluded that,

The narratives of young preschool children are, so to speak, pregrammatical: Three- and 4-year-olds lack command of the precise discourse functions associated with the grammatical forms and lexical items they use; nor have they achieved mastery of the accepted ways of storytelling in their culture. Consequently, their narratives manifest considerable individual variation and numerous idiosyncratic usages. (pp. 488-489)

Other studies reviewed in Chapter One (Hudson & Shapiro, 1991; Stein & Glenn, 1982) concluded that preschoolers' produced story narratives less structurally complete than those
of older children; however, the preschoolers were beginning to demonstrate knowledge of story schema.

A question that now needs to be addressed is: Why are A.T.'s story narratives structurally more complete than those of normal-hearing preschoolers? At the sentential level, A.T. does not produce sentences that are as grammatically complete as those of normal-hearing children. As mentioned in the analysis of A.T.'s language sample, he often omits articles and various grammatical morphemes. This is not unexpected for a child with a severe hearing loss. A.T. often misses hearing these grammatical distinctions in ongoing speech and therefore does not include them in his own speech productions. It is obvious that A.T. has been able to acquire the schematic knowledge required for the production of story narratives despite his hearing loss and more local grammatical weakness. He has been able to learn to include categories such as internal responses, consequences, reactions, and endings, all of which require predominantly linguistically transmitted sociocultural knowledge. A number of explanations for these results are possible:

1. Internal responses, consequences, reactions, and endings actually require more cognitive knowledge than linguistically transmitted sociocultural knowledge; or

2. On the other hand, perhaps only limited exposure to story narratives is required in order to acquire the linguistically transmitted sociocultural knowledge needed to produce structurally complete story narratives; or

3. A.T.'s therapy sessions and everyday parental follow-up to the sessions, since the age of 2;4, have allowed him to acquire the linguistically transmitted sociocultural knowledge required to produce structurally more complete narratives. Intense one-to-one interaction
may have given A.T. advantages in the acquisition of specific language abilities over normal-hearing children; or

4. As mentioned in Chapter Two, A.T. was considered to have normal intelligence based on various tests of concept/cognitive skills. The most recent test, the Test of Kindergarten/First Grade Readiness Skills (TKFGRS; Gardner-Codding, 1987), was administered at CA 5;2 (subsequent to my collecting the narrative data). On this test, A.T. obtained age equivalent scores of 4;11, 5;9, and 5;6 on the reading, spelling, and arithmetic sections, respectively. He performed above age level on two of the three skills tested. If, indeed, A.T. is performing above age level, this could be why he performed better than normal-hearing same-age preschoolers on the storytelling task.

In terms of the theoretical and clinical reasons I proposed for carrying out this study, explanations 2 and 3 are of more direct relevance. In both his personal and story narratives, A.T. included components that I analyzed as requiring predominantly linguistically transmitted sociocultural knowledge. Even with his hearing loss, A.T. has managed to acquire these various components. The linguistically transmitted sociocultural knowledge that A.T. "missed" before the age of approximately 2 years has been acquired, probably in his aural habilitation sessions and the therapy his parents provide to him on a day-to-day basis. These findings give support to the notion that little exposure to story narrative structure is required for the inclusion of components that require predominantly linguistically transmitted sociocultural knowledge.

At this point, it is necessary to discuss how particular researchers have focused on the cognitive versus the linguistically transmitted sociocultural knowledge involved in the
development of story structure. Mandler (1984) states that "stories have an underlying, or base, structure that remains relatively invariant (p. 22), [and that] the great advantage of traditional stories for psychological study, in fact, is their relatively rigid formats. The same kinds of structures appear over and over again in the folktales of the world" (p. 18).

In Mandler's view, the schematic (mental) organization that people have for stories involves predominantly cognitive knowledge. However, the present study has taken the position that the development of story schema requires both cognitive and linguistically transmitted sociocultural knowledge. Certain elements (i.e. internal responses, consequences, reactions, and endings) require predominantly linguistically transmitted sociocultural knowledge in order to be included in a story narrative production. The results of this study indicate that, even if this is the case, little sociocultural exposure is needed for these categories to be included. It should be noted that even strong proponents of the cognitive explanation of the acquisition of the story schema do realize that "although a single experience with an event can create some expectations for the future, one cannot abstract a generalized set of expectations without repeated experiences with the class of events in question" (Mandler, 1984, pp. 17-18).

I had expected A.T. not only to produce structurally less complex story narratives, which involve macrolevel knowledge, but also to have less developed microlevel skills. Microlinguistic knowledge involves the use of various grammatical features, such as cohesive devices, which serve to distinguish information that is assumed to be shared between the speaker and the listener from information that is unique to the discourse. As mentioned in Chapter Three, A.T. did not include articles consistently in his spontaneous speech and there
was often difficulty in interpreting whether he was using a definite or indefinite article when he did include an article marker. Therefore, the referential analysis performed did not include a study of A.T.'s use of definite and indefinite articles. This analysis examined A.T.'s use of nominal and pronominal forms to refer to the two main characters in the story. Based on the study by Bamberg (1987) and the analysis of the normal-hearing 4-year-old's story narrative, I expected the following use of referential devices in A.T.'s story narrative:

1. In the picture-book, the boy and the dog are depicted in roughly the same number of pictures. Therefore, it would be expected that the two characters would receive about equal attention by a narrator. This is not the case. Children refer to the boy more often than the dog. A.T. also refered to the boy more often than the dog.

2. In theory, a narrator could first tell the "story of the boy," and then switch to the dog and tell the "story of the dog," thereby constructing a narrative consisting mainly of reference maintaining devices, with only one switch of referent. On the other hand, a narrator could choose the opposite strategy and switch from one character to the other (following the layout of the book). In terms of the total number of referential devices used (regardless of whether they are pronominal or nominal forms) preschoolers use more devices to switch reference to the boy or the dog than to maintain reference. With an increase in age, Bamberg found an increase in the number of referential devices used to maintain reference to the boy and the dog. A.T. used more devices to maintain reference to the boy than to switch reference, and he used more devices to switch reference to the dog than to maintain reference.
3. In terms of referring to each character, preschool-aged children more often refer to the boy pronominally and the dog nominally. A.T. also referred to the boy pronominally and to the dog nominally.

4. Bamberg's study indicated that children of all ages display a strong tendency to switch reference to the dog by using the nominal form. When it came to switching reference to the boy, the three age groups behaved differently: only the oldest children (9-10 years) showed a similar preference for the nominal form. Children ages 5-6 years used an equal proportion of pronominal and nominal forms when switching reference to the boy; while the 3 1/2 and 4-year-olds switched reference to the boy by the use of the pronominal form. The data from the normal-hearing 4-year-old child, whose narrative I analyzed, indicated that this child used the pronominal form when switching reference to the boy. Whether A.T. was switching reference to the boy or the dog, he used an equal proportion of nominal and pronominal forms.

5. In terms of maintaining reference, preschool-aged children maintain reference to both the boy and the dog by using the pronominal form. A.T. maintained reference to the boy using the pronominal form and maintained reference to the dog using the nominal form.

Of these five points, the fourth one was the most revealing in terms of describing A.T.'s ability to use pronominal anaphora. In Chapter One, the use of the "thematic subject" strategy (Karmiloff-Smith, 1981) was discussed. According to this strategy, narrators follow a pronominalization strategy by which they reserve the use of pronouns in utterance-initial position exclusively for the main character, which Karmiloff-Smith termed thematic subject.
In terms of how normal-hearing preschoolers use the nominal and pronominal forms for switching reference to the boy, Bamberg (1987) came to the conclusion that these children, pick a thematic subject, and predominantly refer to this character by use of pronominal forms, whereby it does not matter whether they switch reference to this character or maintain reference. The pronoun used to fulfill this function is not so much an anaphoric device, in the sense that it presupposes previous linguistic mention, but rather it functions as a zero: No assessment of a possible choice between two (or more) referents is to be made...a pronoun functioning as a referential switching device automatically encodes the boy - and only the boy. (p. 76)

A.T. had a more developed ability for switching reference to the boy. He used the pronominal and nominal forms equally. This indicates that A.T. was moving toward the adult-like strategy of using pronouns anaphorically. He still used the thematic subject strategy, but was beginning to move away from only pronominal reference to the boy (i.e. the main character). When switching reference to the boy, A.T. did use the nominal form. This was evidence that A.T. was beginning to use the anaphoric strategy. A.T.'s use of referential devices helped to make his narratives more coherent. A.T.'s use of referential devices as well as his inclusion of more structural and linguistic components than expected, indicate that A.T. produced structurally more complex story narratives than did normal-hearing preschoolers.

Directions for Further Research

The present study indicates that a severely hard-of-hearing child (1) showed the ability to differentiate between three different narrative types, (2) produced script and personal narratives structurally similar to those produced by normal-hearing children, and (3) produced structurally more complete story narratives than those of normal-hearing
preschoolers. Due to the small corpus considered in the present study, it should serve as a preliminary effort in examining the narrative abilities of severely hard-of-hearing children. Further research is warranted. It would be valuable to obtain information from a larger data pool. Studying a larger number of subjects would also clarify the extent to which A.T.'s surprising abilities may be related to his above-average mental abilities. This information would allow for more complete descriptions of the narrative abilities of severely hard-of-hearing children, and thus allow for better conclusions as to the cognitive and linguistically transmitted sociocultural knowledge required in the development of narrative abilities.

Summary and Clinical Implications

I set out to analyze the narratives of a 4-year-old severely hard-of-hearing boy. The results revealed a number of differences between A.T.'s narrative abilities and those of age-matched normal-hearing preschoolers. In some aspects, A.T. seemed delayed in narrative development (e.g. use of unmarked perspective in reporting script narratives) whereas in other aspects A.T. appeared more developed than normal-hearing preschoolers (e.g. number of structural components present in his story narratives and his use of referential devices to produce more coherent story narratives). In Chapter One, a review of the language development of hard-of-hearing children indicated that many researchers have found that hard-of-hearing childrens' language development deviates from the normal pattern of acquisition (Presnell, 1973; Geers & Moog, 1978). The results from this study also indicated that the development of narrative abilities of a hard-of-hearing child deviated from that expected for normal-hearing preschoolers.
Several clinical implications can be drawn from these results. The fact that hard-of-hearing children have reading and writing achievement skills below those of normal-hearing peers is a well known fact (Quigley & Paul, 1984). Historically, these problems have been ascribed to difficulties with understanding and producing English syntax and with having a reduced vocabulary. While this is true in part, other obstacles have also been noted. In addition, there may be insufficient associative (e.g. inferencing skills), divergent and connotative (e.g. use of figurative language), hierarchical, and grammatical links among various concepts the hard-of-hearing child has acquired (Wilson, 1979; Giorcelli, 1982 - as cited in Quigley & Paul, 1984). It is now more accepted that hard-of-hearing children "not only have difficulty with reading and writing at the lexical and sentential level, including their usage within context, but also at higher levels" (Kretschmer, 1989, p.28).

There are a number of theories regarding reading that have been proposed. These include bottom-up (Vygotsky, 1978), top-down (Goodman, 1976), and interactive theories (Anderson, 1977). Recently, it has been proposed that the "interactive theories provide better explanations for more of the established empirical data than do bottom-up or top-down theories" (Quigley & Paul, 1984, p. 104). These interactive theories allow both types of processes (bottom-up and top-down) to occur and to interact. Some of the variables that are important for the development of reading, in an interactive theory, include vocabulary, syntax, figurative language, schematic knowledge (including story structure), and inferencing. This study has shown that a hard-of-hearing child has better developed story structures than normal-hearing preschoolers. This strength could be used to help the hard-of-hearing child acquire the other prerequisites needed for developing reading abilities.
Storytelling could be used as a part of language therapy to "teach" structural components of stories in conjunction with a focus on morpheme development. A therapist could read a story to a child and then discuss the story according to the structural components using factual questions. For example,

**Setting:** Who were the main characters in the story?

Where did the story take place?

When did the story take place?

**Attempts:** What were the main goals of the characters?

How did they achieve their goal? What did they have to do?

Each of these questions is specifically directed toward an understanding of a particular component of the story structure. In this way, a child will become more familiar with the story structure and will have a better understanding of how stories work. By having the child answer the questions in a structured manner, the habilitationist could focus on the use of various grammatical forms (e.g. articles and tense. In answer to the first question proposed above, the following type of sentence could be used: *The main characters in the story were _____*).

Assuming that hard-of-hearing children acquire these categories quite readily, storytelling could also be used to target specific speech goals. By using a knowledge schema that the child has already acquired, more of the child's attention can be focused on various speech and language goals. For example, by telling a story with a lot of /s/ words in it the child would get lots of practice with this particular sound.
Narratives can be used as yet another tool for habilitationists to better describe a particular child's language abilities. Too often, therapy with hard-of-hearing children focuses on those areas where a child is deficient in development (i.e. vocabulary, syntax). Habilitationists commonly use both formal devices (e.g. the Peabody Picture Vocabulary Test; Dunn & Dunn, 1981) and informal devices (e.g. language sample analysis) to describe a hard-of-hearing child's language abilities. These tests only indicate the microlevel linguistic abilities of the child. Story structure analysis helps describe a hard-of-hearing child's macrolevel linguistic abilities. If a hard-of-hearing child has good storytelling abilities it would seem that it is the habilitationists challenge to build on these skills. As mentioned previously, stories can be used to "teach" other grammatical and speech skills; however, they can also be used as a therapy task that boosts the child's confidence and self-esteem. Performing a task that a child is good at may help the child to perform better on more difficult tasks. At times, the tasks that a child performs well are as important as tasks in which the child is focusing on a weak area of language ability.

Oral language is an interactive vehicle for the development of reading and writing. Children who hear stories learn story language and structure. Through stories, children learn to attend to language and respond to its meaning in new situations. Children's oral language proficiency is reflected in their growth in reading and writing. A strong oral language base facilitates literacy learning. Incorporating storytelling activities into an aural habilitation program for severely hard-of-hearing children may enhance their oral language abilities, and thus aid them in their acquisition of reading and writing abilities.
BIBLIOGRAPHY


APPENDIX A

AUDIOLOGICAL INFORMATION ON A.T.

FREQUENCY IN HERTZ (Hz)

Legend

X= unaided thresholds in the left ear
O= unaided thresholds in the right ear
A= aided thresholds in sound field (left ear aided with a Widex ES2 hearing aid)
V= volume of hearing aid at user setting
APPENDIX B

STORY NARRATIVE OF A NORMAL-HEARING 4-YEAR-OLD-CHILD

1. when he was taking a nap
2. a frog was getting away
3. and then, and then he saw nothing
4. (when) he, (when) he woke up
5. and then the dog put his head in the bowl
6. and he, he looked in the shoe
7. and then he put it on
8. then dog jumped out of the window
9. and he started playing around
10. then he got angry
11. and the bees started chasing him

[E: and the bees started chasing him. Oh, and what about the boy?]
12. he fell down
13. the boy got on that XX
14. and then he looked in there
15. and then the deer comed
16. and he fell on him
17. and he looked through the bushes
18. and he fell on the deer
19. and he started running
20. and then there was a cliff
21. and then they both fell straight down into the water
22. and then he splashed right in
23. and then they started swimming
24. then they found this log
25. XX (then he got to it)
26. then he swam over to the log
27. he said "shhh"
28. then they got over (the log)
29. they saw two frogs
30. he looked and
31. the frogs they had
32. a little frog they had
33. this is it
34. the frog they had
35. and then, he found the frog

(Slobin et al., 1986; I have included only those clauses that these researchers used in their analysis procedures. E refers to the experimenter.)
APPENDIX C

PICTURE-BY-PICTURE DESCRIPTION OF FROG, WHERE ARE YOU?

1. Boy, dog, and frog are in bedroom; boy and dog are watching frog who is in a jar.
2. Boy and dog are asleep in bed; frog is stepping out of the jar.
3. Boy and dog are awake and look at the empty jar from the end of the bed.
4. Boy looks in one of his boots; dog sticks his head in the jar.
5. Boy and dog are at the window; boy is calling and dog has head stuck in jar.
6. Dog is falling from window ledge; boy is watching him fall.
7. Boy is down on the ground below the window holding dog; dog is licking the boy's face and there is broken glass on the ground.
8. Boy is calling toward the forest; dog is sniffing at a line of bees coming from a hive at the edge of the forest.
9. Boy is calling into hole in the ground; dog is barking at the bee hive.
10. Boy is holding nose as if in pain; a little animal is at the hole entrance; dog is leaning against the bee hive.
11. Bee hive is on the ground and the bees are all exiting; boy is up a tree looking in a hole.
12. Boy is on his back on the ground; an owl is at the entrance to the hole in the tree; the bees are chasing the dog, who has run past the boy.
13. Boy is holding his hand above his head as if to fend off the owl, who is flying above him; boy is at the bottom of a large rock.
14. Boy is calling from top of the rock; he is leaning against some things behind the rock that look like branches.
15. Boy is on top of a deer's head between its antlers (these were what looked like branches in the previous picture); dog is almost entirely behind the rock.
16. Deer is running towards a cliff with boy on his head; dog is running beside deer watching boy.
17. Deer stops at edge of cliff; boy and dog are falling over the cliff towards a body of water.
18. Boy and dog splash into the water.
19. Boy is sitting in the water with the dog on his head; boy has hand to his ear as if listening to something.
20. Boy is leaning against a log and saying "sh" to the dog who is now in the water.
21. Boy and dog look over to the other side of the log.
22. Boy and dog are on top of log; two adult frogs are on the other side.
23. Nine baby frogs have joined the adult frogs.
24. The frogs are on top of the log facing toward the water; boy and dog are walking through the water away from the log; boy, who has one of the baby frogs, is looking backwards towards the family of frogs and waving.
APPENDIX D

TRANSCRIPTIONS OF THREE STORY NARRATIVES TOLD BY A.T.

Note for all transcripts:
All words in () paranthesis were transcribed with low confidence. All passages in [] brackets are either transcriptions of adult interaction, or else asides that A.T. began and the adult then had to bring him back on task. These asides were not included in any of the analyses performed. All remarks in {} brackets are information added in order to make sense of a particular utterance. XX refers to words or phrases that were not understood and were unable to be transcribed from the recording. In the transcripts A refers to A.T., M refers to A.T.'s mother, D refers to his father, and C refers to myself.

1. The Berenstain Bears and the Messy Room

[M: You tell me what's happening in the pictures. You tell me the story?]
1. he's cutting all the grass
2. like little boy doing skiing

[M: Oh that's not skiing, that's a skateboard]
3. he's on a skateboard
4. the little boy skiing...skateboard
5. going way down skateboard
6. and he's cutting all the grass
7. and, um, he has all the windows
8. and he has doors
9. and all butterflies
10. and all the flowers
11. and tatos

[M: What are those called?]  
12. tomatoes
13. and he has flowers
14. where's the flowers?
15. where's flower Mom?
[M: The flowers are right there. And you know what, those are tulips.
C: so what else happens in the story? What’s next?
M: You tell Mom what’s happening in the story?]

16. he’s playing piano
17. and he’s eatting a cookie
18. what’s he doing?

[C: What’s she doing?]

19. don’t know

[M: Where is she? Is she in the bedroom? Where is she?]

20. she in down there

[M: Down there in the....]

21. room

[M: basement]

22. basement
23. what that say?
24. what, what’s this?

[M: What does this word say? {read words on various jars in the picture}
C: What else?]}

25. Oh what a mess clean-up

[M: Is that what the Mom says? How come it’s all messy?]

26. because he’s painting the book

[C: She’s painting the book
C: What’s he doing?]

27. he’s making an airplane
28. making oh what a mess

[C: what’s next? what happens next?]

29. uh oh, oh what a mess all over Mom
[M: What happened? Did she open the door? And what happened after she opened the door?]

30. and all the toys came ou, out

[M: They all came out on top of her. Oh my goodness. What happens next?]

31. and mad
32. and clean up one room
33. look he’s cleaning up

[C: that’s right. Next?]

34. and he said "cap away"
35. and Mommy XX
36. and she will break the toys {pronounced hoys}

[M: What did she tell them?]

37. she’s going to break the toys {hoys}
38. and he’s cleaning up
39. oh what a mess
40. and look he step on it

[M: Oh my goodness. What’s wrong up here? What happened up there?]

41. owy bad

[M: And then she stepped in some...What’s that? (pause) Some glue? Is she happy now?]

42. sad

[M: She’s sad? I think she’s a little more than sad. What is she?]

43. she mad
44. and she fell down
45. and she XX
46. and look she whip it

[M: She’s throwing all the broken toys away? She’s saying, "That’s going in the garbage."]

47. why?
[M: Cause she’s angry. The room’s all messy. "Yeah, if you don’t clean up your room I’m going to put it all in the garbage." And what are the kids doing?]

48. talking "Dad"

[M: They’re yelling for Dad? What are they yelling for Dad for?]

49. crying

[M: They’re crying? Because why?]

50. Because he’s putting all the toys away

[M: Oh, cause Mom’s going to throw out all the toys and they’re crying. C: So, then what happens?]

51. Dad said "quiet, QUIET"

[C: What’s Dad doing here?]

52. quiet

[C: What do you think he’s saying?]

53. quiet

[M: What’s he doing here?]

54. don’t make oh what a mess

[M: Oh is he telling them don’t make a mess?]

55. and he’s putting all the toys that Mom said
56. he’s making oh what a mess

[M: Oh is that what she’s saying - "it’s not my fault it’s his fault, he’s making oh what a mess?"
C: So, now what do they do?]

57. he’s making...
58. what’s he making?

[M: What’s the word say?]
59. he not put the toys
60. making...

[C: That's for cleaning up and putting the toys in, right? It's a toybox.]

61. yeah
62. and he cleaning up
63. look, what's happening?

[M: Oh, those are wood shavings.
C: That's from making the toy box.]

64. and he seen it

[C: And now how does their room look?]

65. nice

[C: It's not oh what a mess, is it?]

66. no

2. Just for You

1. Just for you
2. I wanted to XX just for you but it was too slippery
3. I want to clean the floor just for you but, but the water all over the place
4. But, the water too slippery like the eggs.
5. I wanted to put the dishes away just for you but the floor too wet
6. I want to the grocery store just for you but the bag too rip
7. I want to..I want eat my breakfast just for you but not crusts
8. I want to go nappy just for you but the bed too bumpy
9. I want to mow the lawn just for you but they are too small
10. I want
11. On the way home he got hungry
12. apple
13. I want to sit on the table just for you but the TV too loud
14. I want to collect my toys back up just for you
15. I'm ..I'm ..all dirty
16. I want to be clean just for you
17. And he gives her a hug
18. Just for you
3. Goldilocks and the Three Bears

(told using 10 sequence cards)

1. Walking all over the house
2. and she saw the breakfast
3. and eating the breakfast, uh, hu-awt {acts out touching something hot}
4. and she going, going upstairs
5. and she found a bed
6. and she sleeping
7. and she said, and he said "my breakfast all gone"
8. and he saw sleep on her bed
9. and she wake up
10. and she see
11. That's all.
APPENDIX E

SPONTANEOUS LANGUAGE SAMPLE FOR A.T.

1. A.T.'s camera
2. Elizabeth and my mommy have camera
3. One Daddy’s camera
4. and one Mommy’s camera
5. and this one here’s Elizabeth’s camera

[C: Get away from the camera A.T. Don’t go play with it. It’s not my camera. It’s Elizabeth’s camera.]

6. your camera’s gone?

[C: Your camera’s gone?]

7. yours

[C: I don’t have one.]

8. I have one yellow camera
9. [a] toy camera
10. it’s yellow.
11. what my Mommy Daddy doing?

12. my Dad not feeling well.

[C: Your Dad’s not feeling well?]

13. hm?

[C: Your Dad’s not feeling well? What’s wrong? Does he have a cold?]

14. no, he’s sad.
15. he’s XX

[C: What happened?]

16. he sick.
17. he has the [a]. headache.
[C: Oh, a headache. Yuck.]

18. they have water.
19. drink.
20. where your story-book?

21. and after we read the book all up then try and play computer?

[C: We can play on the computer.]

22. and we play Elizabeth’s tapes
23. and with words on there
24. hey?
25. and the train and the button
26. you know the button?

[C: I know how to play with the computer. A.T., put it away we can’t play with it just yet, though.]

27. what did Elizabeth say?

28. it upside down?

[C: hmm]

29. what?

[C: Right side. No, it’s stuck. Oh...]

30. number two
31. I will try number two.

[C: No, that’s not going to work.]

32. yeah, broken.

[C: Hmm. No, it’s gotta go the other way around. Maybe the batteries are low or something.]

33. hey, no batteries.
34. there’s no batteries.
35. that too big.
36. A.T. get tape
37. A.T. go get more tape.

[D: A.T., what did you do this morning?]

38. I sleep in
39. I woke up
40. and I eat my breakfast
41. and I get dressed
42. and, um, Carol came

[D: Pardon?]

43. Carol came

[D: Carol?]

44. and what time after Carol
45. napping

[D: What did you do with Carol?]

46. Nappy

[D: No. What did you do?]

47. I played games
48. what [?] trouble game
49. and...
50. and...
51. and I played Mickey Mouse game
52. with, with, all the people
53. and with the car
54. and A.T. do adult
55. and A.T. told Mommy "Mommy, how do you do this?"
56. and Mommy said "Adult do it, only adult help you"

{A.T. is refering to using the tape recorder. When I showed it to him his Mom told him that he was not to touch it and when he asked how to use it she told him that only myself or herself could turn it on or off and use it}

57. and Carol came home
[D: Anything else you did today?]

58. No
59. came back home
60. then come inside
61. then go eat XX
62. then, then, then eat supper
63. this one?
64. napping
65. then put jamas on
66. then nappy
67. then long nappy

68. A.T. going to go swimming

[C: Where you going swimming?]

69. in [a] big hole

[C: uh-hu]

70. and go XX

[C: With who?]

71. swimming pool

[C: With who? Who are you going with?]

72. with my mom

MLU = 4.35.
**Bold numbers** refer to the utterances used to calculate MMLU.
MLUL = 9.6.

Solid line breaks indicate the start of a new conversation.
APPENDIX F

TRANSCRIPTIONS OF A.T.’ S SCRIPT NARRATIVES

SCRIPT 1:

[C: A.T., I want you to tell me what you do when you go to nursery school.]

1. went to Nancy
2. with all the children

[C: When you go to nursery school with Nancy what do you do?]

3. take the people
4. bad pe, people XX
5. then, do in the police station car
6. and XX XX
7. and XX here
8. and make the XX
9. and make in water table

SCRIPT 2:

[C: You go to nursery school, right?
A: I went nursery school with, uh, Nancy.
C: uh-hu
A: and with the rest of my friends
A: but Elizabeth
C: What happens when you go to nursery school with Nancy? What do you do when you’re at nursery school?]

1. play, play bally
2. answer the phone
3. and be the doctor
4. and, um, AT came home to Holden’s house

[A: Do you like Holden?
C: uh-hu]

5. and going to somebody’s house
6. Kaye’s house
SCRIPT 3:

[C: Have you been to a birthday party before?
A: after the easter bunny {A.T.'s birthday is after Easter}
C: What do you do when you go to a birthday party?]

1. (eat) cake
2. and take birthday hats
3. and the balloons
4. and like all those balloons on the picture {pointing to a picture on the wall which has balloons in it}
5. and the (dog) he will come out for a song

[C: Anything else at birthdays?]

6. Nope

[C: nope?]

7. that enough

SCRIPT 4:

[C: How about Halloween?
A: Halloween pumpkin
C: Uh-hu. What else would you do on halloween?]

1. and it's dark out
2. and all different kind of animals XX
3. then Christmas
4. first Halloween
5. then Christmas
6. then Easter bunny
7. then A.T. birthday
SCRIPT 5:

[C: When you go to the zoo what do you do?]

1. zebra
2. and monkey
3. and elephant
4. and fishes {acts out swimming and blowing}

SCRIPT 6:

[C: Where do you get your haircut?
A: Auntie Karen’s house
C: and what does she do when you get your haircut?]

1. long, long
2. and long
3. and cut, cut, cut
4. and I don’t want long, long hair
5. and she goes "hey, you’re cutting my hair"
APPENDIX G

TRANSCRIPTIONS OF A.T.'S PERSONAL NARRATIVES

PERSONAL NARRATIVE 1:

[C: At Christmas time you went on a trip. You went camping or skiing?
A: I went skiing and
A: grandma, granddad house
A: I went grandma, granddad house
C: uh-hu. What happened?]

1. Santa came
2. Santa came
3. Santa came

[C: What’d you do?
A: ah
C: what’d you do?]

4. played piano
5. and when A.T. XX
6. with the Christmas

PERSONAL NARRATIVE 2:

[C: Can you remember a time when you got hurt?
A: owy
C: So, tell me about your owy? You said you had an owy? What happened? How’d you get an owy?]

1. from skiing

[C: From skiing? What happened?
{A.T. showed me all his cuts and bruises}
A: XX put those here
A: can pick it off
A: another one
A: have owy more
A: what?
C: How’d you get it?]
2. from skiing
3. AT went skiing
4. and all the snow

[C: And what happened when you went skiing?]

5. because the...
6. because AT’s foot came (ally)
7. and AT came fall up the ice
8. AT came fall up, uh the ice

[C: Did you fall then?]

9. Yup
STORY 1:

1. frog, dog, boy
2. frog, dog, (eit mik)
3. [?] little boy and frog came out
4. and he XX be gone
5. he looking out of the boot

[A: and where's his sock?
A: where's her sock?
A: where's her sock?
C: I don't know where his socks are? Where are his socks? Hmm. He's not wearing any?]

6. winter time?

[C: No, it's summer time.]

7. in the fall time?

[C: What happened next?]

8. he's falling out
9. crack, try and (crack) here
10. the little boy trying fall out crack
11. that little boy trying to do?

[C: A.T., what's going on?]

12. he's XX (some) flies
13. and little boy says "oh-no... frog"
14. and, and he look in there {meaning the hole in the ground}
15. frog, frog
16. and look he (di ha) frog in there
17. and he said "whoop" {when gopher came out and hit boys nose}
18. and, and he said "oh no"
19. and he said "run away"
20. and [a] little boy look in there {the hole in the tree}
21. and he came (ba auw) {meaning big owl}
22. and dog running away

[A: and he doing...
A: What's he doing? {A.T. holds arm up to imitate what the boy is doing}]

23. he doing "oh no"
24. and, and, he saying "frog, frog"
25. and reindeer coming

[A: Hey, what you doing?
M: Here, sit down properly. Tell Mom the story. What's happening? What's happening?]

26. he's climbing on the reindeer
27. and reindeer going run
28. and (he's) falling off

[A: and what's happening?]

29. and he came (fall) him off
30. and he falling off
31. and he crash into XX
32. crash
33. water

[A: and he do...
A: what's he doing?
A: What's he doing? {immitates the little boy cupping his ear to listen}
A: Mom, what's he doing?
M: I think he's listening?
A: Why?
M: I don't know why?]

34. and he saying "sh...quiet"
35. the dog be quiet
36. and he say "here we are, there we are"
37. he says bye
38. and look he says bye
39. bye, bye
40. look, the end
STORY 2:

1. There's a frog
2. frog in the glass
3. frog in the glass and dog looking at [a] frog
4. and little boy and dog sleeping on [a] bed
5. the frog climbing, crawling out
6. and little boy says "oh no, no frog"
7. and he say "where's frog? where's frog?"
8. and he coming out
9. and it crack it
10. and he say "frog, frog"

[D: I didn’t hear you. What did you say?]

11. he say "frog, frog"

[D: What next?]

12. he's looking at
13. and she took turn nose
14. and frog isn't there {points at hole in the ground}
15. and frog isn't there {points at beehive}
16. and little boy saying "frog in there" {points at hole in tree}
17. and he fall off it, tree
18. and owl flying (out of tree)
19. and (lean) on backward reindeer
20. and running faster and faster and XX he fall off

[D: Then what happened?
A: Turn the page.]

21. he crashed in water
22. and he hears [a] frog
23. and he saying "sh"
24. and he say "there's the frog"
25. and he found the frog
26. said "hi frog"
27. he said "I will take the small one, bye"