

STORY COMPREHENSION, RECALL AND GENERATION IN THE HEARING
IMPAIRED

Rashmi (P.G.)

Reg.No.M9012

DISSERTATION IN PART FULFILMENT FOR THE SECOND YEAR M.Sc.
(SPEECH AND HEARING), UNIVERSITY OF MYSORE, MYSORE-6.

ALL INDIA INSTITUTE OF SPEECH AND HEARING: MYSORE -6.

1992

amma and appa

You're part of my life that gives me reason
for tomorrow and the confidence to find it.

smitha

A sister is a sharer of laughter and tears
she is a listener who doesn't mind lending an ear
she is a buddy who always sees you through

Thank you, for being all these to me.

CERTIFICATE

This is to certify that the Dissertation
entitled: STORY COMPREHENSION, RECALL AND
GENERATION IN THE HEARING-IMPAIRED is the
bonafide work in part fulfilment for M.Sc.,
in Speech and Hearing, of the student with
Reg. No.M9012.

Mysore

1992



Director

All India Institute of
Speech & Hearing
Mysore-6

CERTIFICATE

This is to certify that the Dissertation
entitled: STORY COMPREHENSION, RECALL AND
GENERATION IN THE HEARING-IMPAIRED has been
prepared under my supervision and guidance.

Mysore

1992



Dr. P. Karanth
GUIDE

30-4-92

DECLARATION

This Dissertation entitled: STORY COMPREHENSION, RECALL AND GENERATION IN THE HEARING-IMPAIRED is the result of my own study undertaken under the guidance of Dr.P.Karanth, Prof. Lang. Pathology, AIISH, Mysore, and has not been submitted earlier at any University for any other Diploma or Degree.

Mysore

1992

Reg.No.M 9012

ACKNOWLEDGEMENTS

- * First and foremost, I would like to extend my heartfelt thanks to my guide, Dr.P.Karanth
"Strong and guiding
Understanding and giving
But most of all
Loving and tolerant
You're the loveliest lady I know".
- * My sincere gratitude to Dr.(Miss) S.Nikam, Director for giving me a chance to undertake this dissertation.
- * I am greatly indebted to Mrs. Uma S, Mrs. Vasantha and Ms.Rekha for all the help and valuable suggestions without which this work would not have begun.
- * I would also like to extend my thanks to Mrs.K.Rajalakshmi, Mrs.Geetha D Rao, Mrs.Prema K.S. for helping out with the pilot study.
- * I am thankful to the staff and students of
 - Institute of Speech and Hearing, Bangalore
 - Sunaad School for the Hearing-Impaired, Bangalore
 - R.V.Integrated School for the Deaf, Bangalore
 - Government Higher Primary School, Ajjibettifor providing data for the present study.
- * Thanks to suma, for being there for me to confide in and to offer me the friendly support I so often needed.
- * Thank you, Pragna,the, "Ever hopeful
Filled with dreams
Bright new brand new
Hopeful schemes

for making me see the silver lining in every cloud that passed my horizon.
- * "Warm and bubbly and full of niceness
Irresistibly appealing in every way" Thanks Nandu, for seeing the sunny side of things always and making me face the obstacles head on.
- * "A winner is always a part of the answer
A loser is a part of the problem
A winner has always a programme
A loser has excuses"
Thanks Hari,for making me see the difference and helping me to realise what I am.

Contd.....

- * "For those who were there
To hold my hands
To listen to me
or just give me a smile and word of advice
To keep me going"

Suju, and Shanth's, how can I ever forget the moral support you provided?

- * Last but not the least, my deepest gratitude to akka whose nimble fingers actually flew to finish this manuscript in record time.
- * Finally, I also thank Deepu and Shyamalatte - those I can count on to understand and who just by being nice and thoughtful made my worries fade away.
- * And thanks a million, -jyoti, not only for sharing my moments of joy but for pulling me out of my gloomy moods every other day.

**

TABLE OF CONTENTS

	<u>Page No.</u>
INTRODUCTION	1 - 6
REVIEW OF LITERATURE	7 - 55
METHODOLOGY	56 - 67
RESULTS AND DISCUSSION	68 - 89
SUMMARY AND CONCLUSION	90 - 91
BIBLIOGRAPHY	(i) - (xviii)

INTRODUCTION

A word is dead
When it is said
Some say.

I say it just
Begins to live
That day

- E.Dickinson

Language is such an integral part of our lives that we take it for granted - to use it in our everyday activities without giving thought to the miracle it really is. Wittgenstein has said that "the limits of my language mean the limits of my world", the assumption being that we can only know what we can put into words. But this is not true as we experience thousands of things which cannot be put into words. Thus, language may not form the limits of our world but it gives us new vicarious experiences in terms of poetry, novels, humor, lectures, lyrics, and conversations. These experiences however may be limited by the grip we have on the symbolic handle of language.

"Language is the clothing of life and no child should go naked into the world" (Dan Fader). Development

of children's oral language abilities is critically important for several reasons. The reading and writing proficiencies are based on competencies of oral language. Knowledge of and intuitions about spoken language provide the keys for unlocking or decoding written language. It is the chief means by which a child satisfies the profound human need to express himself and to respond to others in co-operative efforts toward common goals.

Oral narratives play an important role in the child's language development. Routinized early picture book experiences continue into school years where early reading and writing curriculum include narrative tasks. These provide a means of assessing discourse units beyond sentence level, provide information regarding ability of the child to logically order ideas, relate past experiences to present events, use appropriate linguistic devices to create a cohesive text and take into account the needs of a naive listener or reader. Narrative text is a rich source of data for analysis of language of children with or without language disorder. It reveals requirements of regularity in structure as well as dynamics of interacting variables. As Westby (1984b) has aptly said "oral narrative is a part of the continuum which moves from learning to talk to talking to learn".

One of the sources of narrative text "stories". Everyone loves to hear a story-children most of all. From time immemorial much of societies accumulated wisdom has been passed along generations through stories. They are basically used to entertain listeners. When adults make up stories, they manipulate events so as to create effects of surprise, suspense or curiosity (Brewer, 1985). The entertaining components are built into the story in a way which is called as "twist of the event" by Snyder (1984). Stories may be made up as they are being told or may be recollected from others tellings, from real life interactions, picture aards, teleseries, etc.

The first stories which children tell are those which they have heard repeatedly and which can be cued from pictures in a book. Gruendel (1980) says that 8 year olds are able to create full blown interesting stories. At around 5, normal children can tell interesting stories that contain moat of the components specified in the story grammar (Westby, 1984? Appelbee, 1978? Stein and Gleun, 1979). The story grammar is an attempt to formally describe the internal organization of or structure of the story as is generally encountered. The 5 year old children may begin with a setting, build a problem to be solved, describe a goal and solution and offer an ending. But they

do not identify with the character and do not include statements about thoughts and feelings (Botvin and Sutton-Smith, 1979). At until 11 years, they are not able to maintain multiple episodes.

[The development of fluent language performance in the hearing-impaired has long been the central concern in their education. Studies have been done as to find out the language capacities of the deaf. Hess (1972) reports that they find it difficult to acquire negative sentence forms. The reports of various studies show consistent syntactic and semantic usage but at an underdeveloped level. Smith (1972) has shown the increase in complexity of syntactic structure as age increases in a hearing-impaired child but says it is not on par with that of a normal peer. Stoutenburgh (1971) when comparing the normal and hearing-impaired of 9-14 years of age found 24% improvement in production in the normals. The hearing-impaired used more simple sentences in terms of syntax and lexicon. The narrative tasks have been made use of in the deaf also. The hearing-impaired child has even more need of stories than normal child since a story binds, together ideas, vocabulary and previous experience.

The story production, comprehension and recall show age related trends as in the normal peers albeit at a slower rate.

Basic constituents of stories might be made explicit for language delayed, disordered as well as normal children not only to airL comprehension but to serve as a means of ordering their comments when telling a story. The available evidence of child's narrative may be used by clinicians as a guide to the kind of information in a story that children may or may not be expected to retain. Poor recall of central story events by children who seem to possess sufficient language comprehension ability for the task might raise the possibility that the child's previous world experience with these events is limited or is different from that of most children.

This study provides a detailed description of how the hearing-impaired, one of the important sub-group in our clinical population comprehend, recall and generate cohesive sentences in a continuous narrative form. For comparison with normals, normal hearing children of the same age group studying in normal school were selected. The hearing-impaired came from 2 set-ups an integrated

school for the deaf and a special school for the deaf. Based on the literature it was hypothesized that hearing, impaired would show qualitative as well as quantitative differences in responses, as compared to their normal peers.

REVIEW OF LITERATURE

" If you are a dreamer, come in.
If you are a dreamer, a wisher, a liar
A hope-er, a pray-er, a magic bean buyer.
If you're a pretender, come sit by my fire.
For we have some flax golden tales to spin".

So says she! Silverstein. The young and the old and the middle aged - who is not affected by a beautifully built narrative story? stories differ from other narratives in terms of their high entertainment value (Brewer and Lichtenstein, 1982). Whenever a story is being told for effective communication, a speaker has to produce a series of sentences that are related logically and structurally. Suppose we tell an individual "Tell me a story". This elicits responses from almost every one even if some degree of prompting is needed in some cases. This provides us with an uninterrupted flow of discourse. Since the utterances are not unrelated but are organized around a central topic they allow us a glimpse of how individual at various ages organize text. The narrative discourse demonstrates complexity and possibilities for describing predictable performance. It provides a rich

source of data for analysis of verbal utterances of individuals with and without disorders. It also reveals the requirements of regularity in structure as well as the dynamics of interacting variables.

An important role is played by the narratives beginning with early routinized picture book experiences (Snow et al. 1984) and continuing into early school years where they are prominent in the curriculum of reading and writing experiences. They are pervasive in home as well as school settings and may act as links between the two also. The central role of stories continues through secondary schooling also where a majority of writing tasks call for the generation of narrative discourse (Appelbee, 1984).

The development of story structure in normal children over years has been an important topic for research. We can also compare the normals with the language disordered children (Heldberg and Fink, 1985; Klecan-Aker, 1985; Liles, 1985; Ripich and Griffith, 1985; Roth and Spekman, 1986). This will help us to design assessment tools which are sensitive to specific linguistic difficulties. Another purpose is to study the efficacy of narrative training

procedure. Gordon and Braun, 1983 showed that by teaching the child, basic elements in the story, generation ability can be improved.

What are stories?

Stories are a string of causally and logically related utterances centered around a topic. They portray a number of characters which interact in various situations. The characters may have certain plans to carry out a particular action which may be interrupted by world events and actions of other characters. Stories basically contain intentional acts but there may be statements referring to causally driven events, states and conversation between characters.

Stories historically have served a variety of functions. They are used to preserve cultural values, as instructional devices and rich sources of entertainment. These are the social-semiotic functions. In addition to these, the internal structure of the story adhere to some regularities called the story grammar which may predict an individual's comprehension and prediction capabilities.

The basic story schema, according to Brewer and Lichtenstein (1981) consists of surprise, suspense and

curiosity. Narratives with an initiating event and outcome (suspense structure), critical event and resolution (surprise structure) and significant event and resolution (curiosity structure) only will be called stories. Kintsch and Greene (1978) conclude that story schemata are culture specific while Handler et al. (1980) say that there exists a universal schema for stories.

In order to understand a text/discourse or narrative, we should first of all comprehend the sentences which make them up. This understanding depends on the constituents of sentences such as the individual words, their connections to other words in the sentence and is at the same time influenced by the knowledge of world and knowledge of one's own language. The linguistic devices used by an individual to maintain the relation within a narrative are called cohesive devices (Halliday and Masan, 1976). They are basically five - conjunction, coreference, substitution, ellipsis and lexical cohesion. The last four are also called 'anaphora'. They take meaning from the preceding part of the text or from the context.

Ex: He, she, one, they, it etc.

Ellipsis refers to deletion of information available in an immediately preceding portion of the text (for ex: Do you like to dance? I do).

Lexical cohesion refers to a synonym or a superordinate used to refer back to a previously noted referent (ex. suddenly, a Lion appeared. The beast let out a terrifying roar).

Anaphora pronouns or definite articles are used to refer back to a previously established referent (Gina is sick today. She has the flu).

Cataphoric reference pronouns or demonstratives which direct the listener to coming elements of the text (ex. After he warmed up, Tony was unstoppable).

Using these devices, we can relate elements of discourse text. This process is called cohesion. It is a mandatory characteristic of a story.

When an individual tells a story he has to inform his listener about the topic to which he is referring and also organize it in such a way so the listener can follow the account. This process of story telling is called referencing. Then comes the second operation which involves calling the listener's attention to the relative importance of the referents. This is called focussing. The initial focus on one feature or topic is topicalization. Once the

topic is established, new information is added and the previous one is sustained. This stage is the topic maintenance stage. But at the same time, the story teller also should know what he is talking about. The perspective taking process indicates speaker's sense of events, the point of view taken by different characters, motivation of participants, the way in which different event components are related together and how listener may view the different aspects of the text/discourse. The final stage in story telling-listening interaction will be the processing by the listener.

Stories have been classified as simple and multiple episodic by Stein in 1978. Simple stories contain a setting and an episode (which consists of sequential happenings, causal and simultaneous occurrences). Klecan-Aker et al. (1978) say that stories consist of,

- a) Heaps - Labelling or describing events at random. There is no central theme. Talk about whatever captures attention at that moment in time.
- b) Sequence - Have a central theme. Describe or label actions or events around the theme eventhough no logical relation between events are present.

- c) Primitive narratives - An initiating event, attempt and consequence around a central theme.
- d) Focussed chain - all the above as in c. + story grammar components + weak ending.
- e) True narratives - all as in c. + an ending which is directly related to problem.
- f) Miscellaneous - any story which does not fall into other categories.

Story structure/grammar:

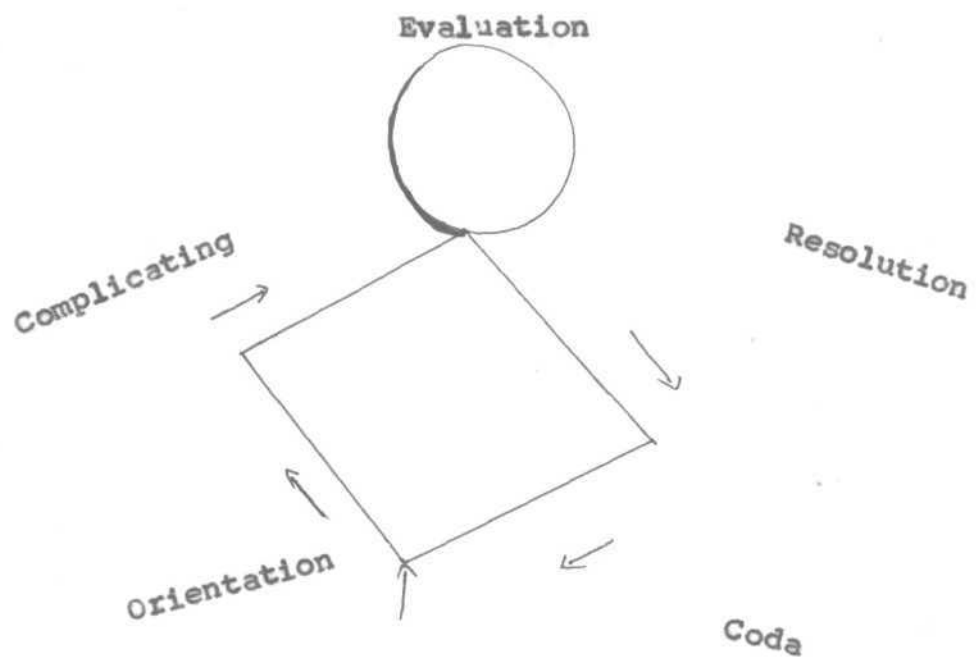
A text is a unit of language in use but not a grammatical unit. It is not defined by its size. It does not consist of sentences but is realized by or encoded in sentences. The most popular approach to global meaning of text has been to compare texts and sentences and suggest that these two should be analysed in the same way. On this view, just as there are sentence grammars which specify the words which constitute a sentence in a language, there exist text grammars which indicate a well-formed text/discourse. Such analysis has been applied to stories also. They are called as story grammars (Handler and Johnson, 1977; Rumelhart, 1975; Thorndyke, 1979). The notion of story grammar was formulated by Lackoff (1972) who proposed

that ideas of Propp (1928-68) on the 'morphology of the folk-tale' could be recast in the form of a rewrite-rule grammar also.

Story grammar is a formal rule system which is used to describe the regularities in story structure. Lavett (1974) says that people may have explicit knowledge about the story structure. This is nothing but the 'psychological reality'. At the same time, we also have to consider a story's psychological validity or the extent to which constituents of a story influence the processing regardless of the ability to bring such knowledge to awareness. In the processing of a story, the 'context' also comes into focus. It's a source of background information which illuminates unexplained shifts in topicalization. It also serves as a label for extracting extragrammatical factors such as setting, topic, social characteristics of participants (age, ethnic identity, education and social class). These factors are not specified because they are assumed to be known to the speaker and listener and their effect is direct and predictable. If the context is socially dynamic and changes within an ongoing situation, the speaker and listener may fail to understand and even miscommunicate.

The story grammar is thus the underlying organisation of macrostructure that identifies a sequence of sentences as a story than as a random amalgam. It is thus the structure of a story as a whole. There are several story schemata used in comprehension, encoding of simple narrative stories (Rumelhart, 1975, 1977; Kintsch, 1977; Kintsch and Van Dijk, 1975; Mandler, 1978; Handler and Johnson, 1977; Stein and Nezworski, 1978; Thorndyke, 1977, 1978, etc).

In 1967, Labov and Waletzky analysed discourse features and explained elements of stories like - Orientation, complicating action, evaluation, result/resolution, Coda indicates end of story. Labov in 1972, explained the analysis in the following manner.



He used the above structure to distinguish between literary and nonliterary forms of narratives. This was used in identification of the presence or absence of key component in a narrative as well as interpretation of the text. In 1977, Labov and Fauschel added another component called the 'abstract'. Abstract and orientation are pragmatic devices that aid understanding. Orientation gives background information. Abstract is a capsule version of the story to follow at the beginning.

Rumelhart (1975) explained a story called 'Margie's story' using a story grammar approach. It is as follows:

1. Margie was holding tightly to the string of her beautiful new balloon.
2. Suddenly a gust of wind caught it.
3. And carried it into a tree.
4. It hit a branch
5. and burst.
6. Margie cried and cried.

The number refer to units of story analysis or propositions. They correspond to morphemes in the analysis. The internal response is not explicit in the story but must be inferred. The story structure was suggested to contain

Story - setting + episode

Setting - State (one or more units)

Episode - event + reaction

Event - episode/change of state/action

Reaction - internal + overt response

Overt response - action/attempt (one or more units)

Attempt - plan + application

Application - Preaction + action + consequence

Preaction - Subgoal + attempt

Consequence - reaction/event

In a tree structure approach,



Thus the story is basically broken into setting and episode. The setting produces protagonist and other characters, provides background information, sets the time and locale describes personal traits, states, habitual actions and dispositions. 'Episode' consists of 5 categories.

* Initiating event - an event changing the state of affairs in the environment causing a subsequent response from the protagonist.

- * Internal response - Covert emotional/affective responses of the protagonist, his goals, wishes and desires.
- * Attempt - Motivated by the internal response. Overt action of protagonist to satisfy goals.
- * Direct consequence - whether or not the protagonist achieved his goals and significant changes due to attempt.
- * Reaction - How the protagonist and others feel think or behave as a response to direct consequence.

Rumelhart (1977) later suggested that a story can be broken down into 3 components -

- initiating event and desire to obtain a superordinate goal
- a TRY schema, methods of obtaining the superordinate goal. May have sub-goals.
- the outcome/result of whether the goal was obtained or not.

In addition to this, a representation of the constituents is formed at different levels. The above 3 are at the highest level of the hierarchy and sub-goals are at a lower level.

Mandler and Johnson (1977) proposed a grammar which involves a setting followed by one or more episodes. Each episode has a beginning, reaction of a character to the event in the beginning, an attempt to deal with the problem created in the beginning, an outcome of the attempt and an ending.

Story - setting + event structure

Setting - state/event

State - state

Event - event which causes the state to change

Event structure - episode

episode - beginning cause + developing cause.

Thorndyke (1977) gave an almost similar structure -

SG = Story setting + theme + plot and resolution

Setting - Character + location + time

Theme -event + goal

Plot = episode

Episode - subgoal + attempt + outcome.

Stein and Glenn (1979) divide the story structure into two categories. One of them specifies the different types of information in a story while the other gives importance to logical causal relation which specify how categories are connected to each other.

Slightly different from the other structure is the model given by Kintsch and van Dijk in 1978 and elaborated in 1983. They say that stories present a restricted subset of texts. They believe that a set of propositions can be extracted from any set which captures part of the content of the

text. It is not the position of such propositions in the hierarchy which makes a story easy to remember. There is integration of information from various propositions in a buffer system of short time memory with limited capacity. The integration occurs in cycles and a proposition is retained in the buffer if it is predicted to be useful for further integration. The longer a proposition remains in the buffer, the better it is remembered. In the 1978 model, the authors gave importance to argument overlap between propositions. This notion is reported to be a problematic one. If we consider that arguments in propositions are referentially tagged, then they have arbitrary labels that distinguish different things of the same kind. Then we have to give a separate account of the process of tagging ie how a particular expression is called co-referential or non-co-referential. But if arguments are not referentially tagged, mere repetition of an argument does not guarantee identity of reference and integration process does not work properly.

Story grammar is not a theory on how stories are produced and understood. A theory should indicate how encoding and interpretation take place. SG do not have this function. Black and Willensky (1979) say that most story grammarians have failed to recognize this distinction.

Garuham (1983b) says it is very important to make competence/performance distinction for stories also.

There are several conceptual difficulty in SG. First of all, according to the latest model, the units of story structure are propositions. They correspond to word/morpheme in sentence analysis. Since lexical category of the word is stored in the mental lexicon, there is no difficulty in deciding the nodes (noun, verb, etc.) to which a lexical item belongs. But the set of propositions is large and no categories have been described. We can force a story grammar tree onto a story by assessing that propositions are members of required categories but if SG are to have explanatory power, there must be independent evidence about the categories to which each proposition belongs.

Story grammarians have not given much consideration to particular type of grammar - phrase structure, finite state, transformational generative grammar, etc.,. Handler and Johnson (1977) introduced 'deletion' and 'reordering' in stories. 'Deletion' refers to missing items in stories such as the character's goal not explicitly stated. They proposed that the deleted item should be inferrable.

corresponding loosely to Chomsky's (1964) stipulation that an item can be deleted if only it's identical to one elsewhere in the sentence. 'Reordering' refers to normal and flashback versions of same stories. The story grammarians also have failed to explain the framework within which the grammar should be constructed at a particular level of linguistic analysis.

Unlike sentence grammar, SG are intended to analyse a small subset of stories. Unless the set can be described independently, there is a danger of circularity - that is the grammar is intended to analyse only those stories which fit the rules.

Summarizing, it is noted that the measures of story analysis give importance both to factual information as well as story grammar components. The story can be broken up into a setting and an episode/episodes. The episodes are made up of the character, problem in the situation, his internal reaction, the plan and execution of action and the final consequence. These components join together to form a cohesive whole. Several researchers have tried to analyse stories in terms of story grammar components and have succeeded. The present study makes use of

Rumelhart's (1975) method of analysing stories into components as it seems comprehensive, easy to understand and easy to fit the story into the schemata.

Development of story comprehension, recall and generation in normal children

Story comprehension:

The ultimate question in story grammar research is "Does the structure exist in the listener (reader) or in the story itself? Or does it exist in both the listener and the text and does comprehension occur when the two match each other?" Bartlett (1932) says a kind of prototypical structure exists primarily in the mind of the listener but at the same time would be influenced by his experience also.

When an individual reads/listens to a story, a multitude of mental processes take place. This processing is reported to be more around the episode boundaries. So an episode is called a psychologically valid unit in story processing (Mandler and Goodman, 1982). If stories are heard, more sophisticated language develops, more background information is obtained and developed more interest in elaborate stories (Sadow, 1982). When listening to a story an individual makes use of the format for compre-

hension and also uses an organizational strategy to retrieve information. Gordon and Braun (1982) say that such a strategy could provide a framework that is transferable to new stories. Listener comprehension improves by pre and post questioning. The story structure is utilized to distinguish between minor and major events, to see the relationship between events, predict outcomes and facilitate understanding (McConaughy, 1980; Sadow, 1982; Whaley 1981).

Short term memory acts as a bottle neck in the comprehension process. It helps the reader/listener retain the most likely causal antecedent of the next thing they hear/read. This helps in linking the ongoing event to the final outcome of the story (Sihank, 1975). This view is supported by Miller and Kintsch (1980). The conclusion of such studies is that individuals use local causal relation to identify the propositions that are most likely to occur next. These are kept in short term memory and allows them to find a causal pattern for better comprehension. In stories, in summarization less important details get omitted. Garnham (1983) says that people understand what best conveys the gist of the story according to the hierarchical position assigned by a story grammar. Also,

the sentence which is more important according to hierarchical position needs more attention (Cirilo and Foss, 1980). van Dijk and Kintsch (1978) report that a thematic title which gives the sense of total text reduces time resources of decoding.

As we know, stories are texts with interlinked sentences. In order to comprehend the whole story, we should know how each sentence is connected to the other. Cirilo (1981) tested the comprehension ability of 150 undergraduate students and reported that performance was poor with lack of referential cohesion. Several studies also have been done on the importance of certain statements in the story. A statement is considered to be important if -

- it plays a wholistic role in the structure of the text
- nature of relation to other statements is important
- content of statement is important.

Rumelhart (1977): van den Broek and Trabasso (1986) say that important statements are more frequently summarized. They are also more likely to be given as answers to questions about main ideas or reasons for other statements (Goldman, 1985; Goldman and Varnhagen, 1983; Graesser, 1981). They also help in processing of subsequent text (Omanson,

1982; Brown and Smiley, 1977). The amount of processing a proposition receives varies with its scope and importance (Cirilo and Foss, 1980). Propositions more central to the main theme may get more attention either because of greater elaboration during encoding (Anderson and Reder, 1979) or because of more integration with other propositions (Kintsch and van Dijk, 1978). The length of the story also does not influence the comprehension process (Gleun, 1978).

Stories are very predictable. Much of semantic and syntactic information is not given attention always. So a child's comprehension of definite/indefinite articles in a story with a habitual setting is difficult to test. So counter-pragmatic stories in which definite article would alone carry the semantic burden was used by Karniloff-Smith (1979). 47 children from 4.1 - 11.1 year were tested. The results obtained were that below 8 years children make use of functional clues such as linguistic and paralinguistic cues whereas above 8 years, more subtle cues are noted. Thus understanding discourse for the over 8 year old is also based on a subtle interplay of semantic, syntactic functional and pragmatic cues. Scott (1984) used stories relating episodes of TV shows. They did not include explicit reference to the goals and often lacked discernible endings. Children

attended less to internal motivations and causal connections between events in such stories.

Ackerman (1983) found out that 4 and 6 year old are sensitive to the contextual influence of previous discourse on judgement of adequacy of referential communication. This is easy for them to realize because they are aware of importance of attributive information. They retain it throughout the presentation of the story. The attributive information at the end of the story is combined with the previous one to help the judgement of communicative adequacy. Collins et al. (1978) studied inference in 2nd grade children by post story questioning. The answers were obtained only at chance level. Cole et al. (1980) studied children from preschool till the 5th grade. They report that children as young as 4 years are able to detect predictable words. Students from the 3rd-12th grade were studied by Bridge et al. (1984). They report that comprehension depends on the nature of relation of one important statement to other in the story. John and Berney (1967, 1968) studied kindergarten and 1st grade children. A story was told and the child was asked to retell it. It was noticed that comprehension was better in the mother tongue. Second language produced results similar to that of a younger age

group. This can be used as an indication of the dominant language and the degree of knowledge in the second, weaker language. Bowman (1981) used questioning strategy to assist development of awareness of structural elements of a story in the 6th grades. Spiegel and Whaley (1980) have reported of improved comprehension in the 4th graders after story structure training.

To check children's understanding of non-literal uses of language as in metaphors, similar, sarcasm, irony etc. Ackerman (1980); Pollio and Pickens (1980) selected children as subjects. Children below 9-10 years rarely comprehend the non-literal meaning of these linguistic forms and tend to interpret figurative language literally. Cacciari and Levorato (1989) used 1st and 4th graders and read them stories and asked meanings of idioms. Older children could give figurative interpretation. Seven year olds could do it if idiomatic expression was embedded in an informative context. Orientation for person, time and place also shows steady improvement over age. Two-3½ year olds were studied by Peterson (1990). The two year olds showed poor orientation for person and time but better orientation was present for location. The acquisition was not complete in 3½ year olds.

Stories are nothing but a collection of sentences in narrative form joined together to form a complex whole through cohesive devices. In order to comprehend the whole story, the individual sentences should be understood and then linked together. The review in this area suggests that the individual makes use of a framework (story grammar) within his mind and tries to fit the story he has heard/read into this framework. While doing so, the context, the content of sentences their importance in narration his previous experience are also considered. Story comprehension shows a developmental trend that by around 8-9 years of age, children are able to gather information as to the events, actions and outcomes in the story.

Story recall:

1 "Recall" refers to the capacity of the individual to store and retrieve information as and when the need arises. When people listen to stories, they use the previously existing schemata acquired through experiences with various event sequences in the world. This world knowledge refers to expectations built up from knowledge of sequences of actions called for in a particular/familiar situation. These have been termed "scripts" (Schank and Abelson, 1977).

Van Dijk and Kintsch (1977 and 1978) have given a theory called "macrostructure" theory of recall. Schank and Abelson (1977) explain a microscopic level 'schema' theory. The macroscopic level refers to events in the story at a more global level and microscopic level refers to events in particular. These events get catalogued in memory under different constituent categories. All material in a chunk will get recalled together. If we cue a learner with an action from one episode of a multi-episode story, he may recall goal, outcome, actions of that episode only. Black and Bower (1979) say that goal oriented episodes are stored as separate chunks in the memory. If a particular super-ordinate action is further specified by several sub-ordinate actions then recall is better as reported by them.

Some parts of the text are reported to be more important, so they are attended to more closely and remembered better. The story grammarians explain this by saying that the important elements occur higher in the hierarchy thus making it easy to remember them. Stein and Glenn (1979) report of better recall for major goals while minor settings (those other than protagonists introduction) are not recalled frequently. Such variation in recall depends on communicative function, location,

syntactic form and content (Handler and Johnson, 1977). The same authors also have reported that, if a story is told with some constituent missing, it will be added in during recall. If recall is not possible, confabulations which match the correct form may be noticed. There is a faster recall time within unit boundaries than for across the boundaries. New topics need longer recall time.

In stories, causally related events are better remembered than events which are not causally related in both cued as well as free recall (Black and Berns, 1981). With repetition of reference between sentences recall is better (deVilliers, 1974; Kintsch, et al. 1975). Handler and Johnson (1977) also say that causally related statements are better remembered than those which are related by temporal and referential relations. Graesser (1979) says that questions like "why, how, when, where, who and what" reveal the organization of a story and answers to these are better recalled than other components. When stories are of canonical type, recall is easier (Handler and Johnson, 1984). The recall of deviated stories has also been tested along with stories with expected sequence of events (Stein and Nezworski, 1978). They report of better recall with the latter.

Versions of stories in which sentences are jumbled up are more difficult to remember than earlier versions. This jumbling destroys the story structure. Also destroys referential continuity (Garuham et al. 1982). If the referential continuity is restored to a jumbled passage, the difficulty gets reduced. Thorndyke (1977) showed that if subjects had to remember two stories, the performance was better if these two shared the same structure. But if the content was common (same character in both stories) recall was worse. Nezworski et al.(1982) studied the recall of different categories of a story (setting, initiating event, internal response, consequence, reactions). In gist recall, all the five categories were remembered with equal importance. But when syntactic form and relative location criteria were controlled, the setting, initiating event and consequences were favoured in recall. Omanson (1982) says that recall and judged importance were greatest for internal response and reactions when they were made central. Central events are those which are not components of other events and introduce a main character or form a sequence of connected events and states that lead from the beginning to the end of the story. Schwarz and Flammer (1981) report of better recall when a text is titled by a thematic title. They serve as labels, attractors for listeners and readers, effective

facilitators of encoding, storing and recalling. Schank (1982) and Dyer (1983) say that if two stories of same structure are heard together, they would be connected together in memory.

Several studies have been done in children to study the development of story recall. Bartlett (1932) told fairy tales to young children and asked them to retell the stories after some time. The recalled stories were more organized and schematic. Certain unimportant features were deleted and some others added to the recalled utterances. Thus, he says that remembering is a process of reconstructing according to a schema. Korman (1945) studied 4, 5 and 6 year olds for recall of fairy tales. He said that important ideas related to the story are recalled better. The 1st and 5th grade students of the Stein and Glenn (1978) study remembered consequence of actions (1st grade) and goals of character (5th graders). Handler (1978) used 2nd, 4th, 6th graders as well as college students as subject. Standard stories and inter-leaved stories (where logical sequence is violated) were given. The standard stories were recalled better. Children of all ages were likely to recall inter-leaved stories in their logical sequence than adults since they tended to separate stories into discrete episodes. But the adults

remembered it in the order of presentation. This indicates that sensitivity of children to logical structure in stories. They also develop strategies to deal with deviations in the story structure as early as 1st and 2nd grade. Omanson et al. (1978) state that 5 and 8 year olds show their use of goals and motivation in recalling propositions in a story. If the goal was explicitly presented, even a 5 year old could recall the story better.

The script based knowledge has been shown to be important in story recall of kindergarten and 2nd graders by McCartney and Nelson (1981). Schematic organization of types found in traditional stories are acquired and used in recall by 3-4 years of age (Hudson and Nelson, 1983; Johnson and Mandel, 1982; Poulson et al. 1979). In case of non-canonical stories, children have more trouble in recalling (Buss et al. 1983; Handler and deForest, 1979; Stein, 1976). As Brown and DeLoache (1978) explain, it may be because of the insufficiency of available cognitive resources to maintain both correct structure and non-canonical format simultaneously or because of the relatively slow development of metacognitive skills. This impedes the capacity to encode, retrieve a story which departs from the expected pattern. Stein and Nezworski

(1978) say that of 6 and 10 year olds, the 10 year olds recall the deviated stories better than the 6 year olds. They also say that temporal position of statements can effect frequency of recall. If a positive intent is stated before a negative outcome, young children will infer that the goals were negative. But if intentions are present at the end of the story, they are inferred to be good even with a negative outcome.

"Recall" as we know is the capacity to remember and retrieve information. In story recall, it is observed that central components are recalled better. Related episodes may be grouped together in memory and remembered easily. It is also reported that, during recall studies, people tend to embellish the stories by using forms which may make the story more comprehensible. Developmental studies show improved organization and logicity of narration as age increases. By 8-9 year of age, important story components like goals, motivation, setting, initiating event and consequences are given more importance during recall tasks.

Story generation/production:

Generation of stories may be in the form of invented ones, paraphases of heard popular stories, repetitions,

summaries of read/heard or seen on T.V, movies etc.

Appelbee (1978) studied 2-6 year olds. He says there are two basic stages in the development of narratives. First is the development of interrelationships among the elements. He identified six different story structures from 2-6. Before starting school, children develop from telling stories which are just heaps of unrelated events to telling true narratives that are focussed around a climax. This is anyhow not complete by the age of 6. The second stage is when the children gradually develop the episodic structure of the narrative (Scott, 1984; Stein and Glenn, 1979) and begin to use more cohesive devices in production (Martin, 1983; Milosky and Chapman, 1984). The mastery of narration structure development is described in four stages by Maranda and Maranda (1971). They are -

- * Tales in which, one power over-whelms the other and no attempts at response is present.
- * Tales in which minor power attempts a response but fails.
- * Tales in which minor power nullifies the original threat.
- * Tales in which not only nullification of minor power is present but the original circumstances are substantially transformed.

The grammatical and semantic means by which children achieve textual coherence in narratives and discourse was

studied by Bennett-Kastor (1983). The noun phrase (agent who carries out actions throughout the story) production was studied in 2 years 3 months - 5 years 8 months old children. Children between 4-5 showed greater leap of abilities to control the number of noun phrases. So stories were denser and longer. Younger children told stories about a relatively less number of characters and events. Maratsos (1976) has showed that children as young as 3 year had achieved distinction of definite and indefinite articles in story generation. A french study done by Karniloff-Smith (1979) showed definite responses were predominant till 7 years. Warden (1973) says that distinguishing between making reference to an object under focus of attention and situating that object within the general context of the setting appears to be a problem until roughly 7 years in both visual and story telling tasks.

The child develops person schemata differently from object schemata due to nature of early interpersonal experience. As a result of this, child's point of view will be similar to adults but of a more primitive and imperfect nature. The communicative competence is thus situation dependant. If the situation is limited, code becomes restricted. Bokus and Shugar (1979) studied 3 years 6 months olds and identified a stable starting point,

ending and major shifts in sources of referent situations. If only the child is present, since he has sole access to the sources of information, the discourse is more natural according to the above authors. Botvin and Sutton-Smith (1978) report that 5-6 years olds are able to produce structurally complete stories. Maratsos (1974) studied 32, 5 year old's story production and reported that they were able to produce articles correctly. Warden (1976) told 3, 5, 7, 9 year olds and college students to tell a cartoon story to another subject. Even the 3 year olds were able to use definite/indefinite articles. The adults take into account the listener's perspective also. They use more indefinite articles.

Sutton-Smith (1981) has shown that there is little plot development in the narratives of 2-4 year olds. The development is more paradigmatic in terms of theme and variation. Uniker-Sebeok (1979) found that 33% of narratives of 5 year olds contained abstracts eventhough not always of a story nor at the beginning. In 1979, Clancy reported, little usage of orientation in 3-7 year olds. The usage of 'codas' increased from 3-5 years and then reduced.

In 6-12 year olds some additional structures were noticed in the story production like clausal subordination.

(ex. when, because, in order to etc.), sentential connectivity and verb phrase structure as explicit markers of logical and temporal relations. Stein and Glenn (1977a) studied three groups of children, the kindergarteners, 3rd and 5th graders. They were asked to make a story from the setting. Stories with purposive behaviour were seen in 1/2 of kindergarteners. 2/3 of 3rd grade and almost all of 5th graders showed this. Thus, there is clear cut developmental trend in logical complexity of stories. This is supported by Piaget's (1926) observation that children lack the cognitive structure to produce a coherent story before the age of 7-8 years. Botvin and Sutton-Smith (1978) report of the presence of complex episodes in stories of 11-12 year olds. Haslett (1983) analysed the story generation based on a picture book of 8-10 years olds. He found that 6 and 7 year olds use more cohesive referential ties. As they become older, more personal ties are noticed. 8 year olds show 80% of major settings and 60% of episodic structures. In 8 and 10 year olds, oral narratives are better than written ones. The latter contain more passive structure. Appelbee (1973) has shown a steady growth in conventional narrative markers such as introductory and concluding formulae (once upon a timey they lived happily ever after) use of past tense, non-use of self etc. John and Berney (1967, 1978) studied story retelling in young children selected from different ethnic

groups. Ethnic factor has been found to be an important factor in the length, style and thematic content of the story.

There are reports on the oral and written differences in story production. Hildyard and Hidi (1985) say that 8-11 year olds who are still mastering the art of writing write as well as orally narrate. By 12 years, superiority is seen in written production. Writing will have more cohesion and more careful editing process. Written language also does not assume a social context and involvement (Chafe, 1982). Tanner (1980) says that cohesion in written text is through conjunctions while through paralinguistic, nonverbal means in oral production. But Gould (1980) did not support this view when discourse types were constant. Hildyard and Hidi (1982a) also say that judgement of production of narratives is not based on the same story grammar.

Production of stories has been a matter of concern over the years as it indicates the capacity of an individual to come up with meaningful, cohesive, logically organized utterances. A clear developmental trend is noticed here as in the comprehension and recall task. Children as young as 2-3 year of age, start making up stories about things observed in the immediate environment. By 8-9 years of age, the oral narratives include almost all the major components like settings, reactions, consequences etc.

Stories of language disordered population:

There has been continuous search as to evidences for the differences between stories of normals and of the language disordered population. One line of research has compared normally developing and language disordered children on a variety of normative measures with the goal of describing the specific narrative deficiency in the latter group (Hedberg and Fink, 1985; Klecan-Aker, 1985; Liles, 1985; Ripich and Griffith, 1985). These kind of studies help in designing assessment instruments. Another line of study is to check the efficacy of narrative training procedures (Carnine and Kinds, 1985; Gordon and Braun, 1983). The language-impaired-children continue to function with the long-term effects of the disorder even with appropriate intervention and maturity. They have difficulty forming verbal abstractions and logical operations essential to interpret the complex, subtle relationships expressed via language. Such poor formulation capacity is reflected in poor academic progress and social failure (Bennett and Runyan, 1982; Maxwell and Wallach, 1984).

There have been studies done to find out the various discourse devices used by the language disordered children, Gallagher and Darnton (1978) say that these children use

revisions narrowly to clarify listener misunderstanding

Van Kleeck and Frankel (1981) conducted a study with 12 language disordered children - 4 in MLU stage 1 (1.6 words) 4 in MLU stage 2 (2.4 words) and 4 in the 3rd MLU stage (3.1 words). The chronological age ranged from 3.1 to 3.11 years. 2 spontaneous language samples, one during play with mother and other with peer were taken. The two main devices used by the studied population were found to be 'focus' (one/more lexical item in a previous utterance is focussed on and repeated later) and 'substitution' (repeating part of the previous utterance but replacing the lexical item). The youngest group of MLU 1 used more of focus eventhough they could use substitution also. The greatest use of the second device was seen however at the 3rd MLU stage.

Guralink and Paul-Brown (1989) have studied 4 year old mildly developmentally delayed children who were matched to non-handicapped older children in chronological age and non-handicapped younger children in terms of developmental level. Play groups were constructed with members from all the 3 groups. Their communication interactions were recorded over 20 sessions of play. The samples were studied for number of utterances, information, co-ordinative construction, general intelligibility of utterances etc. The

mildly delayed group uttered significantly lesser words than older non-handicapped but not less than the younger non-handicapped group. The normal children in both groups tended to use more directive and less informative statements when talking to the mildly delayed children.

The verbally produced narratives of 20 language disordered children were compared to that of 20 normal children by Hedberg and Fink (1985). Both groups were selected from public schools, and were of mean age 8.7 years. Both groups watched a film in the presence of an examiner. They were then given a short break and later were asked to tell the story of the film. They also had to tell the same story to another adult who was not present during the initial viewing. Two sets of questions were asked. One set had 20 questions about factual information of the story. Second set had questions on relations between characters and events and consequences. The results showed that narratives varied in length across the two groups. Five of the 20 test group had good knowledge of story grammar as revealed by answers to set-II questions. They showed poor usage of cohesive devices to cohere episodes as well as poor episode organization in the orally produced narratives.

Scott (1988) has studied narrative production in several language disordered children. One such case was an 8 year 11 month old girl. She was asked to retell the plot of a movie "Gremlin". She did not respond initially on the course of general conversation. She was asked to tell the story. Her response had 20 utterances with 9.65 words in an utterance. This is slightly higher than that of 11-12 year old language disordered, reported by Klecan-Aker, (1985). The narrative did not contain, settings or episodes. She used the conjunctive 'and' 75% of the time. This sample was obtained during language evaluation. After she attended twice weekly sessions of language therapy, at the age of 9.1 year she was asked to tell another story, a personal experience narrative. Her MLU then was 6.88, the clause/utterance ratio 1.66. She was using more setting and contextualization.

The three aspects to stories ie generation, comprehension and recall were also studied by Liles and Merritt (1987). They compared two groups of 20 children each (normal and learning disabled) from 8 public elementary schools with age range of 9-11.4 year. The latter group were undergoing management by a speech and language pathologist. For the story generation task, story stems were

used as stimuli as they could not generate if too little structure was imposed. The stimuli contained a setting and a protagonist designed to evoke a conflict which would require a goal based sequence of events. For the retelling task, two stories were given with the readability level below 4th grade. For comprehension tasks two sets of questions were given. One with 8 questions for factual information and another with 8 questions for story grammar knowledge. All children were tested individually. The responses were transcribed verbatim as well as audio/video recorded. The generation and recall tasks were scored with a score of one for occurrence of each story component following Stein and Glenn (1979). Correct/incorrect scores were given for comprehension. It was noticed that 18 of the test group produced incomplete episodes. But more number of components were seen in recalling than in generation. There was significant difference between comprehension of factual information and story grammar. Comprehension was poor for the latter. It was also noticed that story length differed in retelling. Another study by Liles (1987) also deals with generation of stories after viewing a 48 minute children's film. The story was to be told to 2 listeners - one who was present while watching the movie and one who was not. Mean age of 40 subjects (20 normal and 20 language disordered) was

8 year 7 months. For comprehension, 2 question sets about factual information and story grammar were used. Nine of the 20 test subjects were good comprehenders. They could understand logical relationships but could not use episode organizations similar to that of normals. The usage of conjunctive cohesion was poorer in the test group both within and across episodes. They also used more incomplete episodes ie. their production did not contain all 3 components of initiating event, action and direct consequence.

Another study was done on 48 learning disabled and 48 normals who were matched for age 8-13.11 years by Roth and Spekman (1986). The test group was not undergoing any remediation for oral language expression and comprehension. The subjects were asked to make up a story without any time limit. According to Stein and Glenn (1979) story grammar the test group produced shorter stories. There was no significant difference in the number of episodes between test and control group. But the learning disabled used significantly less setting information. Also fewer causal relations were used by them. The number of story markers increased with age in both the groups. Crais and Chapman (1987) studied 48 children. Sixteen of them were 9-10 year old language/learning disabled, 16 were 9-10 year old non-disabled and another 16 were 6-7 year old non-disabled.

They were told 12 stories and asked to retell as well as answer questions on them. The deaf group was poor in recall as well as comprehension from the age matched group. But they were not better or more poorer from vocabulary matched younger children. This study suggests that therapy which tries to increase organization and elaboration of lexical and semantic system may improve story comprehension in the language/learning disabled.

The language disordered population shows qualitative as well as quantitative difference in story comprehension, recall and generation abilities. By studying these differences, we can come up with certain evaluation as well as rehabilitation strategies. On the whole, the length of story varies, the cohesivity is lost, poor organization of episodes leading to reduced logicality in the stories also is observed. The story retelling/recall task results in better performance than in generation of stories. Also factual information is comprehended better than story grammar. Developmental trend is reported in the language disordered also but at a slower rate than in normals.

The hearing-impaired and their stories:

The language abilities of the hearing-impaired has been a matter of interest over the years. In the profoundly

hearing-impaired children, there is minimal increase in language abilities from 7-15 years (Geers and Moog, 1978). 13-14 years olds show deficits in comprehension of semantic concepts. Conrad (1970); Goetzinger and Huber (1964) have said that deaf children have poorer sequencing ability. They also have a more rapid rate of short term memory than the normals. Liben (1979) found that recall of categorizable stimuli was lower than that of normal hearing children.

Story retelling and comprehension ability of deaf population has been studied by Gaines et al. (1981). They tested 12 congenitally deaf children who were good readers and who were using lip reading. The chronological age mean was 14.5 years and reading age was 12*6 years. Six normal children were also tested. Three canonical stories with a beginning, complex, reaction, attempt, outcome of attempt and ending were presented in large type on a screen in three different forms - normal, misspelled and confused. The subjects were asked to read it and then write it down. There were errors in character identity. But storage capacity and long term retrieval ability as well as sequential organization did not seem to be impaired in the deaf children eventhough there was a lack of auditory input.

Conrad (1972, 1973) says that deaf children recall less of story information may be because they code verbal material differently. They also show poor response to sequential memory tasks (Stuckless and Polland, 1977). Poor memory for syntactic structures of a story was reported by Russell et al. 1976.

Iram-Nijad et al.(1981) studied the comprehension of metaphorical uses of English by deaf children. Fourtysix subjects from 9-17 years from residential schools for deaf were selected. They were profoundly and prelingually deaf (more than 90 dB in better ear of sensori-neural loss) and were using sign language. The first experiment had twelve short stories with three sets of four alternative sentences including a literal set, a simile and a metaphor set. The story with one picture on each page along with the alternatives was presented. After the story was read and signed, the picture was shown and tester asked "what does the picture tell about the story?" to test comprehension. Nine, ten and eleven year olds also showed they can understand metaphors. The 2nd experiment took ten, 14 year old profoundly deaf children. Only some of them were given practice sessions. The procedure was similar here the story was read and not signed. It was noticed that they were not able to choose the correct alternative spontaneously. With prompting anyhow, they could do so correctly most of the time.

Marsehank and West (1985) studied four deaf students (12 years 10 months - 15 year) with four age matched normal children. The hearing loss was greater than 80 dB in the better ear. The test group were from a residential school for the deaf and used total communication. The experimenter supplied themes - they were asked to generate stories. The response was video-taped. Six distinct categories emerged. They were

- Traditional, novel trope (figurative language)
- Frozen trope (since usage, becomes part of their vernacular)
- Gestures - (movement conveying information)
- Pantomime (acting out part of a story)
- Linguistic modification (changes in signs by hand shape, position, etc).
- Linguistic invention (for written prose).

The story production in both groups showed age related trends. The test group showed high frequency of gestures, pantomime and linguistic modification. They also show competence in sign language for figurative usage.

Tomlinson-Keasey et al (1966) say that deaf children do as well as the normal hearing in story production. But Conrad (1975) reports of poor abstraction capacity while Liben (1978) says that the hearing-impaired have poor conceptual categorization. These children may have linguistic

and cognitive abilities similar to their normal peers but communicating new information for them may depend upon different kinds of descriptive devices from the normal hearing (Tomlinson-Keasey and Kelly, 1978).

The review indicates that not many studies have been done on the story related capacities of hearing-impaired individuals. There are problems of selecting subjects for studies in terms of type of hearing loss, age of onset, amount of training, number of years of hearing aid usage, home training, communication medium, intelligence, etc. The reports indicate a developmental trend in this population also but at a slower rate for comprehension, recall and generation of stories.

Utility of studying stories:

Language development is a multi-dimensional process. No single test can adequately summarize a particular child's ability in all areas of language. Narratives form an important part of the child's repertoire of speech in his whole life. The preschooler's productive and receptive experiences with narratives in the home can influence their later management of classroom skills (Heath, 1982; Michaels, 1981). The other situations where a child uses narrative for ex. can be during lunch break, in the cafeteria, playground, school bus, park etc.

Most screening tests evaluate the knowledge of isolated language rules rather than integrated communication performance (Carrow, 1973; Vane, 1975). Later academic difficulties may arise if we base our placement strategies only on this. The main aim of such a test should be to find out whether the child is able to use several rules to use language to follow sequentially presented directions and explanations.

Such a test demands comprehension and expression of sequentially presented information. It also incorporates performance variables that operate in natural situation like semantic decoding without cues, retention of verbally presented information, organisation and sequencing of content. It may be useful in observing grammatical rule production because it evokes language samples that reflect utterances produced in conversational speech (Barrie-Blacke, Musselwhite, Rogister, 1978). Story retelling may be a replicable mechanism for observing integrated communicative performance rather than simply testing isolated linguistic rules. Culatta et al. (1983) compared 199 kindergarteners, readiness group and 1st graders. None of these subjects had undergone speech and language evaluation before. Clinician read a short story and asked the children to retell it. The results of this was compared to performance in Carrow screening test

of auditory comprehension and Vane evaluation of language scale. The results showed no difference between kindergarten and the readiness group. The poor performance in story retelling task was reflected in poor STACL scores. But there were exceptions who had good scores in STACL but not in the story. Thus we cannot actually compare this to a standardized test but we can get comprehensive information about communicative performance.

Children's story books can be made use of to assess a child's oral comprehension by measuring his verbal responses. A word retrieval task procedure for word deleted word in a sentence can be used. This can be done individually or in a small group. This helps children who experience difficulty in grammatical decoding and subsequent vocabulary development. We can ask the child to frame a story based on the framework or give him a beginning and ask him to make up a story. When telling a story, hands should be free to gesture illustrate. Maintaining eye contact and sitting close to the children, insertion of synonyms or appositive phrases to explain an unfamiliar word or a definition of a foreign term etc. are important. We can also have several students write-up answers for questions, like "who, where, what" etc. and mix them up. Then each one has to select from each category and make-up a story from those slips.

These studies have important implications for clinical use. The basic constituent (setting, reactions, etc) can be made more explicit for language disordered children not only to aid comprehension but to serve as a means of ordering their comments when telling a story. Poor recall of central story events by a child who is seen to possess sufficient language comprehension might raise the possibility that his previous world experience is limited or is different from that of others. In assessment, oral and written narratives samples could be compared to look for similarities and differences between the two modes. Depending on this, therapy and teaching goals could be directed at focussing on those structural aspects with which the child is having difficulties.

In India, studies focussed on language performance of normals as well as disordered population are limited in number. Their aims have been to find out isolated capacities like mean length of utterance, morphology, syntax, etc. This may not provide us with enough material to predict performance in a more natural situation where lengthier, more complex and sequential information is to be expressed and comprehended. This study provides data on oral narratives of hearing-impaired children and compares it to the abilities of their normal peers in tasks

like story comprehension, recall and generation. The implementation of this knowledge will go a long way in enabling clinicians to evaluate and deal effectively not only with the hearing-impaired but with other language-disordered population also.

the same set-up, either the special school or from the integrated school only. However, since only two of the children in the special school for age group of 10-11 years, fulfilled the selection criteria, three more were chosen from the integrated set-up in the same age group.

The comparison group comprised of 15 normal school going children in the same age range from a Government Kannada medium School in Bantwal. They were selected on the basis of having

- no hearing loss
- no organic/medical problems
- middle socio economic class status
- mother tongue Kannada
- language age upto age level as reported by class teachers

These children were also divided into three groups of five members each ie 8-9 years; 9-10 years and 10-11 years

Table-1:Details of test and comparison group.

	Age	Mean age	Sex		Grade	Hearing	Usage of hearing aid.
			M	F			
Normal	8-9	8.5	3	2	III	Normal	Not applicable
	9-10	9.5	2	3	IV	Normal	Not applicable
	10-11	10.5	2	3	V	Normal	Not applicable
Hearing impaired	8-9	8.5	2	3	I	Bilateral severe to profound loss	3 -4 years
	9-10	9.5	2	3	II	Bilateral moderate severe to profound loss.	2 - 5 years
	10-11	10.5	3	2	III & IV	Bilateral severe to profound loss	3 - 5 years

Materials: This study used three tasks for testing namely, comprehension, recall and generation of stories. Two Kannada stories were made use of for the purpose. They were

1. duraseya nayi (the greedy dog)

2. kuri kayuva huduga (the shepherd boy)

Story-1 was chosen from a second grade reader's moral story collection while story-2 was part of the material prepared by Ramaa (1980). These particular stories were chosen because they were

- of 1st - 2nd grade level
- not very familiar to the children
- were easily picturable.

For the comprehension task, the story was presented by the tester orally once. A set of 6 questions was prepared for both stories dealing with characters, setting, action and eonsequence of the story.

For the recall task, the child was requested to tell the story as he remembered it. Clues in terms of pictures were presented to those who could not perform the task.

For the generation task the child was provided with 6 sequential pictures for each story. Individual colour pictures were pasted on 4" x 6" flash cards and presented one by one to the child.

The stories used in the study are given below:

Story-1 ḍura:sɛjʌ na:jɪ

Ondu na:jige tumba: hʌsivɛ a:gɪ ttu. a:ha:rakka:gɪ
suttʌmuttʌ aleda:ḍuttɪttu. adakke ondu mu:le sɪkkɪtu.
na:jɪ adannu ba:jɪjʌllɪ ettɪkondɪtu. ḍa:rɪjʌllɪ
adakke ondu nʌdɪjʌnnu ḍa:tʌbe:ka:gɪttu. ha:ge
ḍaṣṭuva:ga nirɪnʌltɪ adʌra prʌtɪbɪmba ka:nɪsɪtu.
na:jɪju ʌllɪ Innondu na:jɪ mu:le ka^{ch} c^hɪkondu ɪde
endukonɪtu.

a: na:jɪge Innondu mu:leju: be:ku enɪsɪtu.
nirɪnʌllɪruvʌ na:jɪjʌnnu hedʌrɪsʌlu adu bogʌlɪtodʌgɪtu.
takʌnʌ ba:jɪllɪddʌ mu:le nirʌllɪ bɪdduho:jɪtu.
ḍura:sɛjʌ na:jɪ tʌnnʌ a:ha:ravʌnnu ɪ ritɪ
kʌledukondɪtu.

Text: Once, there was a very hungry dog. When he was searching for food, he got a piece of bone. Picking it up, the dog started running. On his way, he had to cross a river. There, he saw his own image in the water. The dog thought another dog was there with a bone. He wanted to obtain that piece of bone also. In order to scare the other dog, he began barking. Immediately, the bone he had in his mouth fell into the water. Thus the greedy dog lost his food.

Story-2 kuri ka:juv^ huḍug^

Onḍu u:rIn^llI obb^ kurI ka:juv^ huḍug^
Iḍḍ^anu. onḍu ḍIn^ kurI ka:juva:g^ av^nge
tama:ḡe ma:ḍabegkenḍu anIsIḥu. "hulI banḥu
hulI" enḍu ka:gI kond^anu. aḍannu ke:lI
rait^aru hol^g^lIḥu nda o:ḍI banḍaru. av^rellaru:
ḍonneḡal^nnu t^nd^aru. a: huḍug^anu rait^ar^nnu
no:ḍI nakk^anu. rait^aru sullu he:lId^
huḍug^an^nnu baiḍu hor^ḥu ho:ḍaru. kel^vu ḍIn^
ka^led^ me:le huḍug^anu hulI banḥenḍu matte
ku:gId^anu. i ba:rIju: rait^aru o:ḍI banḍaru.
hulI banḍIll^ enḍu ti:lIḍu ko:p^gonḍu
ho:ḍaru. swalpa ḍIn^g^lu ka^led^ me:le ade:
huḍug^anu nidza hulI no:ḍId^anu. av^nnu ku:gIda:g^
sa:ha:j^kke ja:ru: bar^lla. hulI ja:r^
hed^rIkeju: Ill^de kurIḡal^nnu t^Inḍu ha:kIḥu.
huḍug^an^nnu: t^Inḍu biḥḥIḥu.

Text: Once, a shepherd boy wanted to have some fun. He started shouting, "Tiger, tiger". There were some farmers working in nearby fields. They came to help him. The boy laughed at them telling them that it was a lie. The farmers became angry and scolded him before going away. The boy did the same thing and caused alarm again in the farmers. After some time, there was a real tiger in the

area. This time, when the shepherd shouted for help, no one came to rescue him. The tiger killed the sheep one by one. Finally, it killed the shepherd also.

Questions for comprehension task

For story-1:

a) na:jI ja:ke sutt[^] mutt[^] leda:dutittu?

Why was the dog moving about?

b) da:rⁱj[^]llⁱ adakke e:nu sikkⁱtu?

What did it get on the way?

c) n[^]dⁱj[^]annu da:tuva:ga na:jI e:nu no:dⁱtu?

What did the dog see when it was crossing the river?

d) pr[^]tⁱbⁱmba no:dⁱda na:jI e:nandukondⁱtu?

What did the dog think when it saw the image?

e) Innondu env:le p[^]d^ej[^]lu [^]du e:nu upa:j[^] ma:dⁱtu?

What plan did it have to obtain the other bone?

f) konej[^]llⁱ na:jIga:da g[^]tⁱ e:nu?

What happened to the dog in the end?

Story-2:

a) kurⁱ ka:juv[^] huduga "hulⁱ hulⁱ " endu e:ke
ku:gⁱda[^]nu?

Why did the shepherd scream "tiger"?

b) [^]v[^]nu ku:gⁱda:ga ja:ru ellⁱnda[^] band[^]aru?

Who came there when he shouted for help? From where?

c) raitaru huḍugannannu e:ke baiḍaru?

Why did the farmers scold the shepherd?

d) mu:rane: ba:rī huḍuga ku:gīda:gā raitaru ja:ke
barallilla?

Why did not the farmers come when he screamed for the
third time?

e) huli e:nu ma:ḍ tu?

What did the tiger do?

f) huḍuga ma:ḍīda tappu e:nu?

What mistake did the boy make?

Test environment: The subjects were tested in a noise free and distraction free room as far as possible. They were tested individually. No time restrictions were imposed to complete the task. Though the test group could be tested in a separate room, the normal peers could not be tested in such a situation. As far as possible, the responses of the children were audio recorded with the help of a philips AM 125 tape-recorder. The responses were also transcribed verbatim simultaneously.

Instructions: These were given in Kannada.

Task-1: Comprehension

"I am now going to tell you a story. Please listen to it carefully and then answer the questions which will be asked. If you want me to repeat, I'll do so".

Task-2: Recall

"Now, do you remember the story. I told you? You tell it to me now. If you want to see some pictures about the story, I'll show it to you".

Task-3: Generation:

"Now, I'll show you some pictures one after the other. Look at them carefully and make up a story about those picture. If you are ready, tell me the story now".

Procedure: Initially 5-10 minutes were spent with each child in general conversation to build rapport. All the three tasks were carried out in a single session divided into two parts for the 2 stories. Each child was given both stories for all the three tasks. The order of presentation of three tasks varied randomly for the children.

Since generation of a story could be influenced by the presentation of same story for comprehension task, the two stories were alternately used for these 2 tasks. Comprehension and recall, however were tested for the same story in one part of the session. A rest interval of 5-8 minutes was given between part 1 and 2 of the session.

During comprehension testing, the questions were repeated twice, after presenting the story orally. No

clues were given for getting an appropriate answer. The children were given their own time to complete the tasks. During recall testing, only a few children requested for the picture clues. Others could tell the story without any clues. For the generation task, 3 children needed an example which was given to them by using some other picture cards not used in the present study.

Scoring and analysis:

The stories were initially analysed for their basic components following the story grammar proposed by Rumelhart.

For the first story:

1. Setting constitutes of - The dog was hungry

He was searching for food.

2. Episode 1. event

2. reaction

a. Event 1 - The dog got a piece of bone

2 - He picked it up in his mouth

3 - When he was crossing the river, he saw his
own image.

b. Reaction - ^{Internal response}
overt response

3. Internal response - 1 - The dog thought there was another
dog with a bone.

2 - He wanted to eat that piece of
bone also.

4. Overt response - In order to scare the other dog, he
(Attempt)
started barking.
5. Consequence - The piece of bone fell into the river
The dog thus lost his food.

For the second story:

1. Setting - The shepherd wanted to have some fun.
2. Episode 1 - He started shouting "Tiger" - event 1
Overt reaction 1. The farmers' came to help him.
 2. The shepherded laughed at them
 3. The farmers scolded him and went away
3. Episode 2 - Event 1 - The shepherded tried again
Overt reaction 1 - The farmers came running.
 - 2 - They went away when they could not
tee the tiger.
Covert reaction 1 - They were angry.
4. Episode 3 - Event 1 - The shepherded cried "tiger" again
Overt reaction - No one came to help him.
5. Consequence - 1. The tiger killed the sheep
2. It killed the shepherded also.

As noted, the second story is a multiple episodic one each constituting of events and various reactions.

Scoring:

Scoring was done on the basis of correct usage of these story grammar elements. For the comprehension task, the

questions were prepared on the basis of some of the components like setting, event, reactions and consequence. For the other two tasks also scoring was done depending on whether these components were present or not.

Quantitative scoring was done on the scale of 0, .5 and 1.

'0' - indicated no answers and when children said 'donot know' or answers were completely wrong.

'.5' - indicated utterances of sentences which did not contain all the expected information

ex: na:j_Ige hotte h_{ASIVE} a:g_Ittu

The dog was feeling hungry.

hotte h_{ASIVE} ... t_In d_I huduku

feeling hungry....search for food.

Also when sentences were fragmented, same score was given.

'1' - This score was indicated when complete correct sentences with accurate information were uttered.

ex: na:jige tumba: h_{ASIVE} agg_Ittu.

a:ha:r_{AKKA:GA} aleda:dut_Ittu

The dog was feeling very hungry. He was searching for food.

mod_Ilin_{ANTE} sullu he:l_{UV}nendu huduga mu:r_{ANE}:

s_{AL} ku:g_Ida:ga rait_Iaru bar_{AL}ill_{AL}.

The farmers thought that the boy will lie us before and did not come when he screamed for help for the 3rd time.

The scores were computed for each individual and his mean performance for all the expected categories for a particular story was calculated. This was carried out for all the three test tasks.

All these scores were compared in two ways. Scores of hearing-impaired were compared with those of normals. In addition scores were compared within 2 groups across ages. These are shown in tabular forms and discussed in the next section.

RESULTS AND DISCUSSION

The three test tasks were carried out on 30 subjects, 15 of them comprising the test group (hearing-impaired) and the other 15, the comparison group. The data was scored and analysed as described before. Statistical analysis using t-test for two individual groups (small samples) was carried to find out the significance of difference between mean performance of different age groups in both the test as well as comparison group. This was done to see whether any developmental trend exists across age groups. The t-test was also carried out between the normal and hearing-impaired in all the three age groups to see if any significant difference exists between the two.

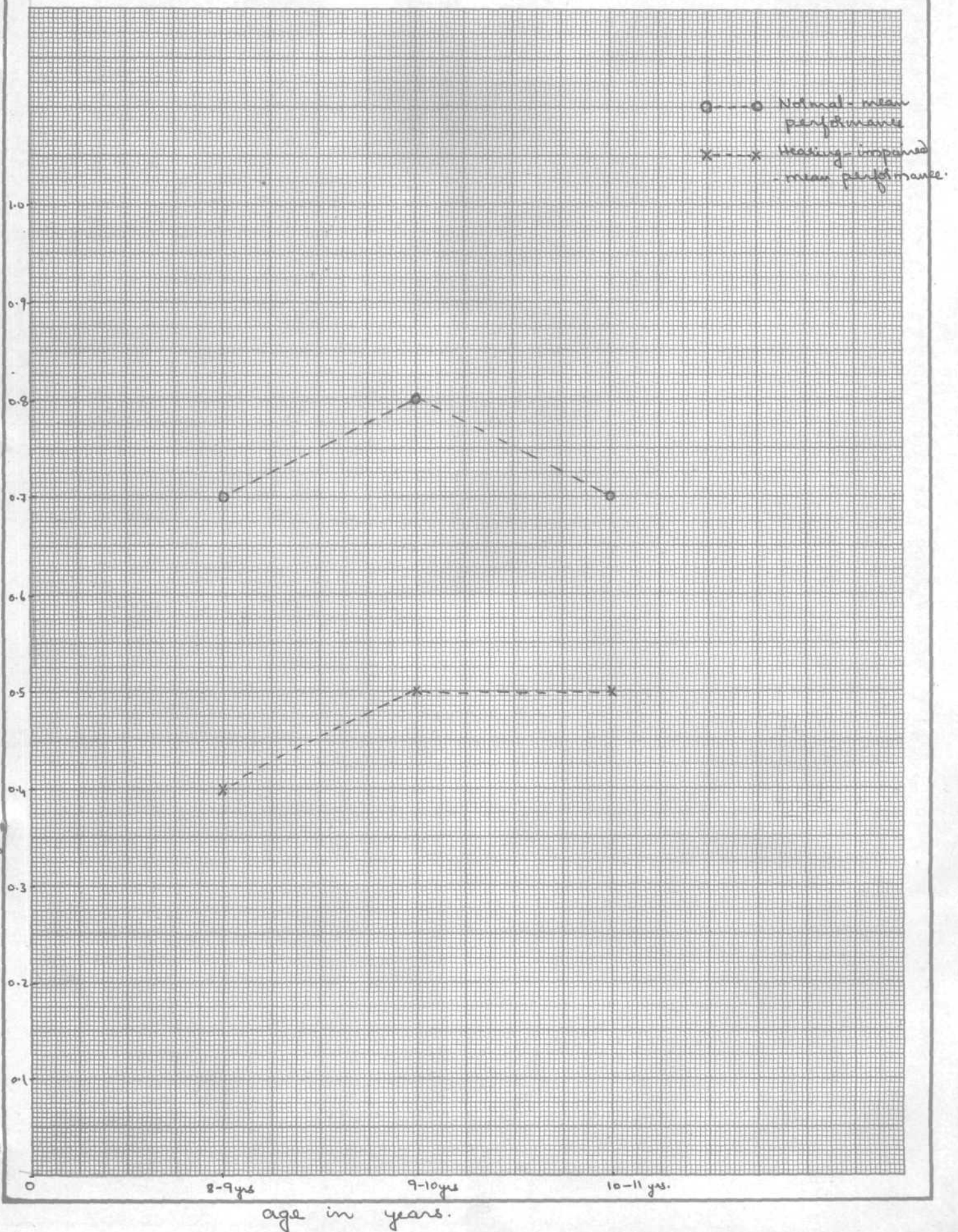
Comprehension:

Table-2: Mean performance of story comprehension in normals and hearing-impaired.

Age group	Normal	Hearing impaired
8 - 9	0.77	0.40
9 - 10	0.83	0.55
10 - 11	0.85	0.55

* 't' test between the three different age groups in normals did not reveal any significant difference in the comprehension capacity of the children at both 0.05 as well as 0.01 level.

Mean performance scores.



Task: Comprehension

Graph 1

* The same was observed in the hearing-impaired subjects also.

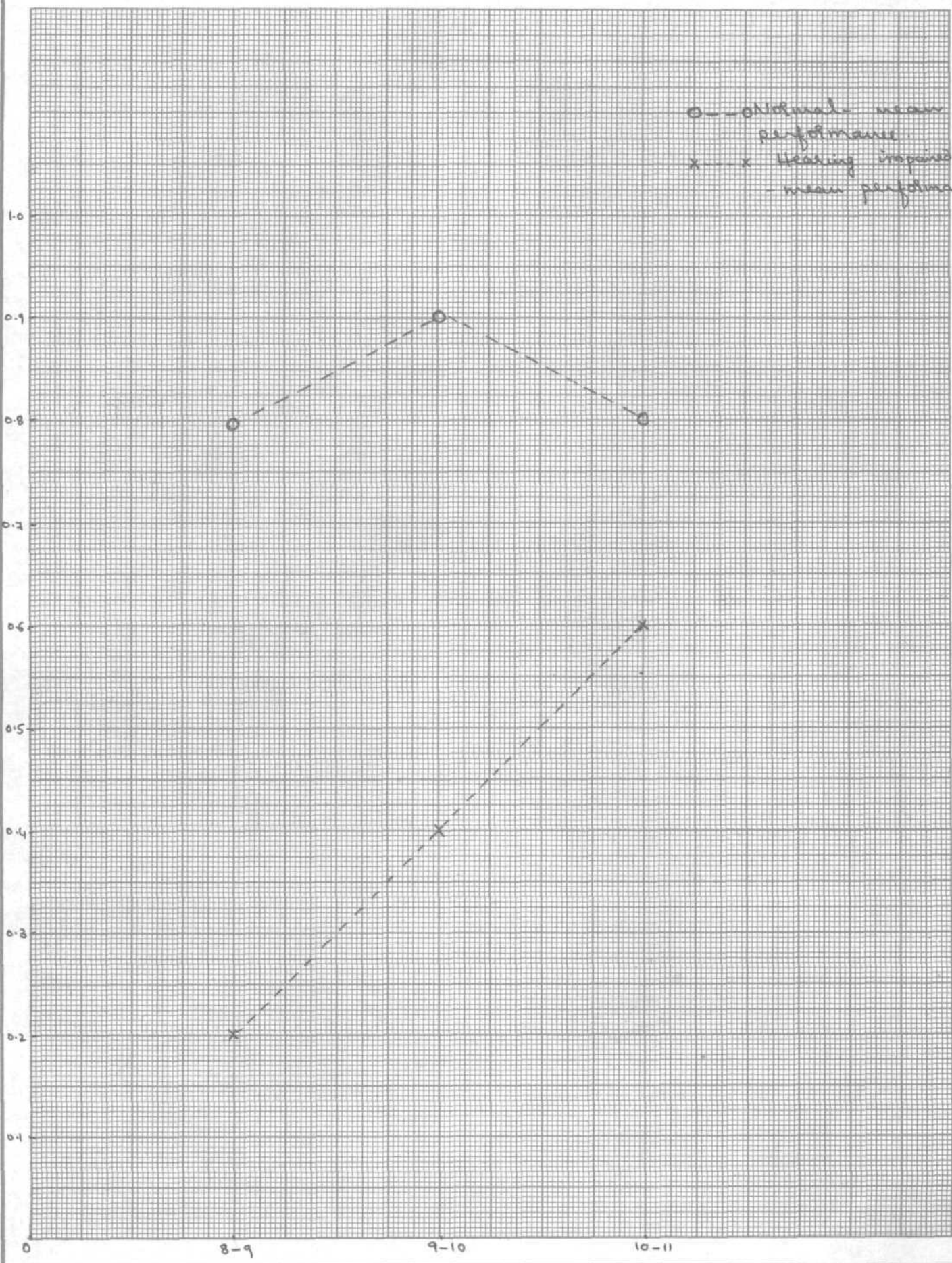
Based on these results, we may presume that by 8 years of age, the normal children have developed good comprehension ability almost similar to that of 11 year olds. This results is in concurrence with Karniloff-Smith (1979). The graphical representation (Graph-1) indicates the trends in normals as well as hearing-impaired for the comprehension task.

* t-test carried out between normals and hearing-impaired of the same age showed that

- a) there was a significant difference between the two groups of 8-9 year olds at 0.05 level.
- b) same results were observed in the 9-10 year old group also at 0.05 level.
- c) the 10-11 year group however did not reveal any such difference.

This has to be further tested with more subjects. The absence of difference in performance in the 3rd case could be because of exposure to the stories to two of the subjects in the 10-11 year group, who performed very well. Reasons for this variation shall be discussed later in this section.

O - Normal mean performance.
x - Hearing impaired mean performance.



Age in years
Task: Recall.

Recall task:

Table-3: Mean performance on story recall task in the normals and the hearing-impaired.

Age group	Normala	Hearing impaired
8 - 9	0.82	0.25
9 - 10	0.90	0.45
10 - 11	0.81	0.62

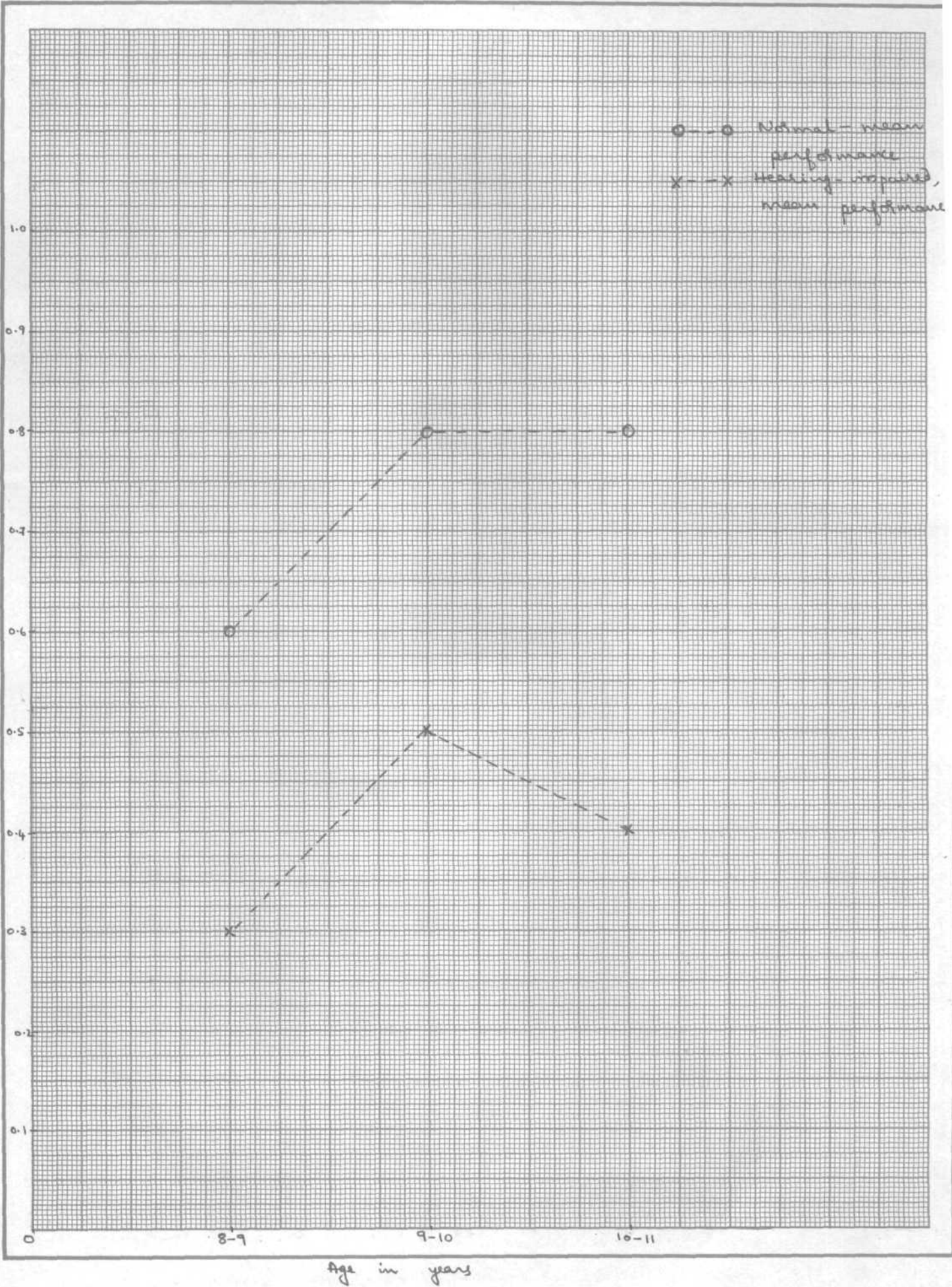
- * In the recall testing, there was no significant difference in the performance between 3 age groups of normal subjects.
- * In case of hearing-impaired subjects, in the 8-9 vs 9-10 groups, there was a significant difference at 0.05 level but not at the 0.01 level.
- * There was significant difference between 8-9 vs 10-11 years group also both at 0.05 and 0.01 level though such difference was not evident between the 2nd and 3rd group ie 9-10 vs. 10-11 years.

These trends are exhibited in graph-2.

The significant improvement in the 3rd group compared to the 1st group in the hearing-impaired may be because of the greater amount of training they have had as well as more exposure to language with greater usage of hearing aids.

- * Recall was also tested across normals and hearing-impaired. It was found that the first two age groups ie 8-9 year and

Mean Performance Scores.



Task: Generation.

Graph

9-10 years showed definite differences of performances significant both at 0.05 and 0.01 level. The third age group seemed to perform almost similar to the 9-10 year olds. This result also shall be discussed later in detail.

Generation task:

Table-4; Mean performance on generation task in the normals and the hearing-impaired.

<u>Age group</u>	<u>Normals</u>	<u>Hearing impaired</u>
8 - 9	0.67	0.30
9 - 10	0.80	0.50
10 - 11	0.81	0.46

* In case of normals, the t-test did not give results of significant difference between 3 different age groups.

* No significant difference was noticed in the 3 groups of hearing-impaired also.

Developmental trend seems to be present across the age group such change however, does not seem to be appearing within one year of interval as seen in the different age groups. It can be concluded that any change if it appears is gradual in nature. (Graph 3)

* t-test carried out between different age groups of normals and the test group revealed that the output of normals was

better and significantly different at 0.05 as well as 0.01 level for the 8-9 year group, at 0.05 level for the 9-10 year group and both levels for the 10-11 year group.

This results supports Conrad (1975) who states that hearing-impaired have poor abstraction capacity and Liben (1978) who states that these children have poor concept categorization.

On the whole, the statistical analysis does not reveal significant developmental trends in the 3 tasks for age 8-11 years. This may indicate that children at the age of 8 years itself have learnt to deal with story grammar appropriately. This is supported by a French study done by Karniloff-Smith (1979). The differences which exist are more in terms of qualitative factors. Development is gradual and slowly progressive in nature. It does not seem to be changing much across one year of age interval. However, difference in performance of the 1st and 3rd group indicate that definite improvement in performance has taken place eventhough, not statistically significant in all cases. Such a conclusion is not completely accurate as this study was conducted with a very limited population. By increasing the number of subjects in each age group, we may be able to obtain a clearer idea about developmental trends.

It was observed based on mean performance that in the normal group, 3rd age group ie 10-11 year performed poorly than the 2nd group in some of the tasks especially in case of recall. This may be because that the 3rd group, though they used sophisticated language compared to the earlier age groups, omitted information which occurred repeatedly, especially in the second story -"kurɪ ka:juv^ huɟug^ ". Though this did not reduce the cohesiveness of the story, scores obtained were poor because the children were expected to mention the repeated information while answering questions. The 3rd group of hearing impaired also showed poor performance in the generation task. This may be because the group contained subjects who were using oral-aural communication as well as those who used cued speech. The oral output was poorer in the latter group which might have contributed to the lower performance score in the 3rd group.

The significant difference existing between normals and hearing-impaired in the first 2 groups indicate that hearing-impaired perform poorly in all the 3 tasks. Many reasons could be attributed to this - home training facilities. - type of hearing loss; - onset of hearing loss; - no. of years of hearing aid usage; - type of communication; - school attendance; - way of teaching; - residual hearing loss; - exposure to similar material before testing etc.

Performance of two subjects (hearing-impaired) in age range (10-11 years) was comparatively better than the other 3 of the same age group. These two were from the special school for the deaf. These children had been exposed to one of the stories in school previously, which may be a factor contributing to better performance scores in them. It is also noted that one of these two, had intensive home training. There could be other influencing factors like child's intelligence which have not been controlled in this study. This result highlights the importance of home training in the rehabilitation of hearing-impaired. The normal child's exposure to language at home is enriched by stories which are read, acted out, role played etc. In case of a hearing-impaired, such exposure is limited. The results of this study emphasise the maximum utilization of such narrative material in order to enhance the linguistic experiences in a hearing-impaired child.

Descriptive Analysis:

Since this present study was a small sample study, more importance was given to a detailed description of the ability to comprehend, recall and generate stories. This was done to emphasize the developmental trends if

any in the two groups. It also was used to differentiate between the performance of two groups on all the three tasks in more detail.

Comprehension of stories:

The comprehension was analysed based on the answers to a set of six questions on both stories. The questions were both factual as well as probes for story grammar elements.

Normals:

Story-1: The first age group could answer questions on setting and event, external response and consequence correctly. They did not understand the internal reaction of the main character. The children in this age group also did not answer the question on "what the dog said when it was crossing the river" Answers given were

ner^lu = shadow

ac^hc^hu = "

The next group could answer all the questions except one subject who did not answer the internal reaction question. The final group could answer all questions correctly but gave more importance to what the main character was looking at rather than giving importance to what he was feeling. The answer to question.

"prʌtɪbɪmbʌ no:dɪdʌ nɑ:ʃɪ enʌndʊkondɪtʃu?"

"what did the dog think when it saw the image? "

was varied. Most of them said, "nʌnʌge a: mu:le be:ku
ʌntʌ ". I want that bone also".

All the three groups answered the question on external response by only the action and not the motivation behind the action.

ex. "bɒgʌlɪtʃu " (barked) only and not why.

Story-2: This contained multiple episodes. Setting was correctly identified even by the youngest age group though they could not understand overt reaction 1: The consequence again was understood by everyone. Only the 2nd and 3rd age group however, gave importance to the internal reaction also. Only in the 3rd age group, 2nd consequence was talked about.

The 2nd story was more difficult to understand to some of the subjects. Some of the subjects in the 8-9 year group needed the tester to repeat the questions. This age group also could not answer question 4.

"mu:ɾʌne: bɑ:ɾɪ huɔʊgʌ ku:gɾdɑ:gʌ ʌɪtʃɑ:ru jɑ:ke bʌɾʌlɪllʌ?"

"Why did not the farmer's come when he screamed for the 3rd time? even after repeating it twice.

Thus a major important qualitative difference was seen to be existing between the different age groups of normals.

The first important observation is that the older children had more richer language and used complex complete sentences. The second important observation is that all the story grammar components were present in this group to a greater extent than in the 8-9 year group. This report agrees with that of Karniloff-Smith (1979) and Bridge et al.(1984) who say that with increase in age, more number of components are comprehended. This depends more on a subtle interplay of pragmatic, semantic, and syntactic cues.

In the hearing-impaired:

Story-1: The subjects in age group 8-9, could not understand all the questions. Only two of them tried to answer all the questions setting was identified by four of them while wrong answers were given for internal reaction. Consequence was also not identified by the three of them. They said "ba:jallI Illa" indicating the dog did not have anything in its mouth. It was more of picture description. The 2nd group could answer questions setting as well as consequence. Only two understood the question.

What "ba:ɽɪmbɪ no:ɽɪdɪ na:ɽɪ enɪndukondɪtu?" did the dog think when he saw the image? "Even they could not answer it completely but said.

"ɪnnonɽu na:ɽɪ?" (Another dog).

In the third group, all questions were answered only by one subject. She was exposed to the story previously. Other four subjects answered the question.

"n_hā_h dā:ṭuva:g^h na:j_h e:nu no:d_htu?" "what did the dog see when he was crossing the river?" by saying "on_hdu
"One^h n_hi_hr_hll_h ma:ms^h hiḍ_hkonḍu" face in the water with a piece of meat".

Internal reaction when probed was given the response "n_hange gott_hll_h" (I don't know). But external response was correct in everyone.

Story-2: The setting was not understood by all the five in the 1st age group. In the 2nd group three could not answer the 1st question while the other two said.

"tama:ʃe" (joke) and "sum_hane" (simply) respectively.

The first group also could not understand all the different events one by one. They did not answer questions on internal reaction. In the two consequences, only the first was given importance. The second group could identify the different events but for consequence again only the first was given importance. i.e. the tiger killing the sheep. They also did not answer the six question "huḍ_hga ma:d_hḍ_hḍ_h
"What_h e:nu?" mistake did the boy make?"

The third group could identify setting, event, overt reactions but could again name only the first consequence. Two of them

talked about the tiger killing the boy also. They had previous exposure to the story. One other boy did not specify the characters but said "tintu" (ate) only, repeatedly.

It was noted that comprehension of the hearing-impaired subjects was poorer compared to their peers. Internal reaction was properly understood only by the 10-11 years old children. They also gave indication of understanding the 6th question though the answer was not framed correctly.

It is to be noted that the hearing-impaired needed more repetitions to understand questions. The younger age group also repeated part of the question before answering them. All components of story grammar were not present in the hearing-impaired even at the age of 11 years especially of internal reaction of various characters. The cohesiveness of narrative was lost as they could not follow the "setting" itself (the first two age groups).

Recall task:

This was the second item in the series of tests carried out. Some of the normals as well as the hearing-impaired children needed clues to begin their recall of the stories.

Normals:

Story-1: Compared to the utterances during generation task, the production was lengthier in terms of number of sentences. Though internal reaction was not mentioned during generation task, two of the subjects in the 8-9 year old age group added it during recall. However event two of this story was not given in detail though setting was seen in all the five subjects. The second age group showed the presence of internal reactions also. However, this was mentioned in terms of direct speech.

ex: "nAnAge nInna ba:ja:lli iro: mu:lenu: be:ku" I want the bone in your mouth also." The 9-10 year olds used well defined setting, events and consequence. They used better cohesive devices like "a:me:le", "matte" (later and). The 3rd age group however produced smaller stories than their younger subjects. Two of them finished the story in four sentences only. They did not describe the events completely. The internal reaction was unspecified and motivation behind overt action was not mentioned. All except one subject began the story with a definite beginning "ondu u:ri:na:lli" and had a well defined ending.

Story-2: The 8-9 year olds did not use a definite story beginning. They did not use internal reactions of other

characters also. The setting was present but not well defined. Their utterances were more like direct picture descriptions even though no clues were given to these particular subjects. The 9-10 year olds began the story with a good beginning of "ongdu us:rin^llI ". Also described the setting properly. Their story was more cohesive. The third age group made use of the definite beginning as well as ending the story properly. Only one subject could indicate the internal reaction correctly. Three of them produced definite multiepisodes indicating the boy shouting for help again and again. All the five subjects talked about both first and second consequence which was not seen in the earlier two age groups.

Thus, the normals showed an increasing trend of using a definite beginning and ending of the story as well as usage of cohesive devices to make the story appear complete, with increase in age. The recall utterances were definitely better than their attempt at generation. This result supports that of Liles and diSegna Merrit (1987). The sequence of remembering consequence of actions (8-9 year group) to goals of character (10-11 year olds) was seen even by Stein and Glenn (1978).

In the hearing-impaired:

Story-1: The 8-9 year old children did not use complete sentences but provided more information than in generation. Eventhough not well defined, a setting, event as well as reactions and consequences were present in 3 of the subjects' utterances. One subject told a good story but did not identify the main character at all. One produced only 7 words in a string which were not cohesive at all.

The next group produced a well defined setting, event₁ and event₂ (not very well defined). Even the external response of the main character was present but not the internal reaction as well as motivation behind external response. They also could not produce a definite ending to the story.

One subject in the 10-11 year old group produced a lengthy story with complete cohesion. But information was repetitive. The story began well but did not have a definite ending. Other subjects produced stories which were shorter in length. It was more like each sentence was used to depict a picture. This age group also could not produce a well defined internal reaction as well as motivation behind external response. The three subjects who used cued speech had difficulty in completing the

task. Their setting build up was also not as good as other subjects of the same age group as well as the younger age group of 9-10 years.

Story-2: The 8-9 year olds used more of single words. Two of them did not use any cohesive devices. In their utterances only consequence could be identified. Only one used a definite setting. Other four did not show any components. Only two of the 9-10 year olds could point out setting in a definite manner. Consequences 1 and 2 were mentioned. Two of the subjects used direct speech to indicate event 2. All the events were not mentioned however. One subject from the 10-11 year old group produced an almost complete, cohesive story with all components though all overt events were not mentioned. This girl had had previous exposure to the story. Three subjects did not identify the setting. The children using cued speech for most communication did not use any cohesive devices. Though consequence was present in the utterances of all five subjects, internal reaction was mentioned only by two of them.

This descriptive evaluation definitely indicates the absence of story grammar elements of internal reaction, definite beginning and ending of the stories even in the oldest age group and 10-11 years in the hearing-impaired

children. While comparing to normals, the hearing-impaired show a very poor output in terms of cohesive devices used, length of story produced and presence of story grammar elements. The normals, by the age of 11, use all the components which was not seen in the hearing-impaired.

Story generation:

Normals:

Story-1: The 8-9 year olds used smaller sentences of 3-4 words. Their utterances were more of expressing what was seen in the sequential pictures. They did not use any cohesive devices except in case of one subject who used "Aḡarinda" (because of that). The sentences were incomplete in two of the subjects. None of them used a well defined initiation of the story. They also did not identify the feelings of characters. In the 9-10 year olds, three used a beginning of "onḡu us:rinallı". They used a combination of present tense as well as past tense in the utterances. The ending of the story was not well defined. Only two subjects could identify character's internal reaction. The length of the story was longer than the 2nd graders. The 3rd group surprisingly did not talk about the internal reaction. The consequence was also given importance

as well as definite initiation and ending of story. The information was not repetitive as in the previous groups. They made use of cohesive devices appropriately.

Story-2: The 8-9 year olds did not utter cohesive sentences. However story length was longer than the 1st story. All were able to identify the motivation as well as internal reactions. However, they did not begin or end the story in a well defined manner. One of them just named each picture.

In the 2nd group, one subject just used four sentences to finish the story. Others used a definite initiation of "ondu u:rinallı". Consequence was given more importance but only for the 2nd one. Information repetition was noticed here. Except for one subject, every one used the definite beginning of the story in the 3rd group. The story length however was shorter than the previous group even though the meaning was conveyed. There was no repetition of information.

We notice an increase in the length of the story as the age increased except in the 3rd group. However, this did not take away the cohesively in narration. Overall scores were less for this group because the various reactions which were to be tapped were not mentioned by these subjects.

Better usage of cohesive devices was noticed. The steady growth in conventional story markers (beginning and concluding remarks) which is seen in this study has been supported by Appelbee (1973). The generation utterances however, were not as lengthy as the recall utterances. The developmental trends noticed in this study have been reported by Stein and Glenn (1977a).

In the hearing-impaired:

Story-1: The 8-9 year olds could not generate complete stories. They produced strings of words without any cohesion. Only one could point out the consequence. However, two of them realized the motivation behind the action. They did not use a proper initiation or ending of story. There were many repetitions. The episodes were not complete. The 9-10 year olds used more complete sentences than the 1st group. But one of them uttered only 4 words*

"na:ʃɪ ---bɪttu ---- ba:ʃɪ jʌllɪ ɪllɪ". Two of them generated the internal reaction but at a very basic level.

The ending was given importance by three of the subjects. In the 3rd group, one subject could produce a story with all the information though she did not mention motivation. She used 9 complete sentences to tell the story. Others did not use complete sentences. All of them identified internal reaction and used a definite ending. The three

subjects from the integrated school however, had a poorer output than the 8-9 year olds also. They did not use any cohesive devices. Their story was made up of incomplete episodes.

Story-2: The story of 8-9 year olds was incomplete. Only consequence was present in all the subjects' utterances. Only one could produce the motivation. They just identified all the characters. Even the 9-10 year olds did not use cohesive devices. Simple sentences were used by them. They used internal reactions as well as consequence in their story. No proper initiation was seen. One girl in the 10-11 year old group produced a complete story even though the sentences were grammatically incorrect. But all the components were present in her story. She used more of direct speech. Other four used incomplete sentences. Only the consequence was apparent.

Thus, in the hearing-impaired story generation was limited to small incomplete sentences. The exception was one subject from the 10-11 year group, who had been exposed to the story previously.

The hearing-impaired took more time to complete the task. They also needed promptings to continue the story. The repetition of information was seen in all the 3 groups

though maximum at the youngest age group. The 10-11 year old hearing-impaired were not on par with 8 year old normals. They also did not show story grammar elements other than the consequence for both stories. The story length was very less as well as without any cohesive devices even in the 10-11 year olds. This is in agreement with Conrad (1975) and Liben (1978). There are definite differences seen in terms of correct story grammar element usage, refined use of language, less repetitive information more cohesion and length of narration between the normals and hearing-impaired. Reasons for this have been discussed earlier in this section.

It is a general impression that, language performance of integrated children will be better than the segregated peers. In the present study, however, the opposite has been noticed. The story length, usage of cohesive devices as well as grasping of factual information were poorer in the integrated school children. This factor has to be studied further with a larger population to identify the influence of different educational set-ups.

The dilemma of deafness - not only that the sufferer cannot hear, it is also that he cannot easily communicate. The main purpose of rehabilitation programmes for the hearing-impaired is the enhancement of communicative abilities.

As we are aware, this can take any form like gestural language, eued speech, oral-aural system etd. In the present study, 3 of the subjects (10-11 years) from the integrated school had cued speech as the mode of communication. Since in this study, the responses to the test tasks were expected in the oral mode, these children could have found, it difficult to perform on par with their 'oral-aural' peers. It was also noted that they did not try to communicate with their normal peers in the classroom. Special educators help was available to them for only few hours a week. This throws light on the fact that instead of using any one mode of communication, we should try to channelize all possible modalities towards effective communication. If we emphasise on correct speech only, the Ianguage capacities may be overlooked. To obtain the best for our children, it is essential for various disciplines to co-operate, for they all have much to offer in improving the lot of our handicapped children, each his own skill & technique to increase the chance of a hearing handicapped leading a more complete life.

SUMMARY AND CONCLUSION

The current study was carried out to compare the story comprehension, recall and generation abilities of hearing-impaired and their normal peers.

Two groups of 15 subjects each were selected within the age range of 8-11 years which was further divided into three groups of one year interval.

The study used three tasks that of story comprehension, recall and generation. Single sessions were used with every child. Not more than 30 minutes were taken up by any child. Their responses were transcribed verbatim as well as audio recorded as far as possible.

Analysis was done in terms of qualitative as well as quantitative differences. The test and comparison group showed significant differences in performances for all the three tasks (at 0.05 level). Descriptive data provided a detailed picture of each age group's performance in term of story grammar elements. Definite qualitative difference exists between performance of 8-9 year and 10-11 year olds in normals and the hearing-impaired.

Implications: Since, analysis has revealed a basic awareness of story grammar elements in the 8 year olds itself preparation of narrative material for evaluation of language capacities can be made easy.

Story material can be made use of the build-up comprehension as well as generation abilities in terms of these grammar elements to see whether they are effective in therapy.

This can be made use of not only with the hearing-impaired but with all language disordered population.

Limitations:

- * Less number of subjects in various age groups.
- * Control more variables in the hearing-impaired.

Further suggestions:

1. Continue study using other clinical populations - language disordered and mentally retarded.
2. To carry out further study in a younger as well as older age group to confirm the developmental pattern obtained.
3. To study effects of integration vs. segregation.

BIBLIOGRAPHY

- Ackerman, B.P. (1980): Cited by C.Cacciari and M.C.Levorato in "How children understand idioms in discourse". Journal of Child Language, 16, 387-405, 1989.
- Ackerman, B.P. (1983): "Children's judgements of the functional acceptability of referential communication in discourse contexts". Journal of Child Language, 10, 151-166.
- Appelbee, A.N. (1978): Cited by N.J. Lund and J.F. Duchan in Chapter 8 "Discourse" 260-315, in "Assessing Children's Language in naturalistic contexts". Prentice Hall Inc, New Jersey, 1988.
- Appelbee, A.N. (1984): Cited by C.M.Scott in "A perspective on the evaluation of school children's narratives". Language, Speech and Hearing Services in School, 19, 67-82, 1988.
- Baker, L., Stein, N. (1981): In Chapter-1 "The development of Prose comprehension skills", 7-43. In "Children's Prose comprehension - research in practice". International Reading Association Inc, USA, 1981.
- Bartlett, J.R. (1932): Cited by J. Flood and D. Lapp in Chapter-13 "Comprehending stories and texts" 349-392 in "Language/reading instruction for the young child". MacMillan Publishing Co., USA. 1981.
- Bennett-Kastor, T. (1983): "Noun phrases and coherence in child narratives". Journal of Child Language, 10, 135-149.
- Bennett-Kastor, T. (1986): "Cohesion and predication in child narrative". Journal of Child Language, 13, 353-370.
- Bennett, C.W., and Runyan, CM. (1982): "Educator's perception of the effects of communication disorders upon educational performance". Language, Speech and Hearing Services in School, 13, 260-263.
- Black, J.B., Bern, H. (1981): "Causal coherence and memory for events in narratives". Journal of Verbal Learning and Verbal Behaviour, 20, 267-275.

- Black, J.B., Bower, G.H. (1979): "Episodes as chunks in narrative memory". Journal of Verbal Learning and Verbal Behaviour, 18, 309-318.
- Black, J.B., and Bower, G.H. (1980): Cited by P.van den Broek in "The effects of causal relations and heirarchical position on the importance of story statements". Journal of Memory and Language, 27, 1-23, 1988.
- Black, J.B., Turner, T.J., Bower, J.H. (1979); "Point of view in narrative comprehension, memory and production". Journal of Verbal Learning and Verbal Behaviour, 18, 187-198.
- Brenzer, B.A., Kricos, P.B., Lasky, E.Z. (1981): "Comprehension and production of basic semantic concepts by older hearing-impaired children". Journal of Speech and Hearing Research, 24, 414-419.
- Brewer, W.F. (1985): Chapter-9, "The story schema: Universal and culture specific properties", 167-194. In "Literacy, Language and Learning - The nature and consequence of reading and writing". Ed. D.R. Olson, N. Torrance, A. Hildyard, Cambridge University Press, USA, 1985.
- Brewer, W., Lichtenstein, E. (1982): Cited by N.J. Lund and J.F. Duchan in Chapter-8, 260-315 "Discourse" in "Assessing children's Language in naturalistic contexts". Prentice-Hall Inc, USA, 1988.
- Brinton, B., Fujiki, M (19): "Development of topic manipulation skill in discourse". Journal of Speech Hearing Disorders, 27, 350-358.
- Brown, A.L., DeLoache, J.S. (1978): Cited by R.G. Mandel and N.S. Johnson in "A developmental analysis of story recall and comprehension in adulthood". Journal of Verbal Learning and Verbal Behaviour, 23, 643-659, 1984.
- Brown, A., and Murphy, M. (1975): Cited by L.B. Leonard in "Normal Language acquisition: Some recent findings and clinical implications". Chapter-1, 1-36, In "Language disorders in children - Recent advances" Ed. A.L. Holland, College Hill Press, USA, 1984.
- Bruno-Golden, B. (1983): "An educational/remedial approach for language delayed children using children's story books". Journal of Communication Disorders, 16, 399-403.

- Bryant, P., Bradley, L. (1985): Cited by L. Olley in 'Oral narrative performance of normal and language-impaired school aged children'. Australian Journal of Human Communication Disorders, 17, 43-66, 1989.
- Botvin, G., Sutton-Smith, B. (1977): Cited by N.J. Lund, and J.F. Ouchan in Chapter-8, 260-315 "Discourse" in "Assessing Children's Language in naturalistic contexts". Prentice-Hall Inc, USA, 1988.
- Buas, R.R., Yussen, S.R., Mathews, S.R., Miller, G.E., Rembold, K.L. (1983): Cited by R.G. Mandel and N.S. Johnson in "A developmental analysis of story recall and comprehension in adulthood". Journal of Verbal Learning and Verbal Behaviour, 23, 643-659, 1984.
- Cacciari, C, Levorato, M.C. (1989): "How children understand idioms in discourse". Journal of Child Language, 16, 387-405.
- Campbell, T.F., Shriberg, L.D. (1982): "Association among pragmatic functions, linguistic stress, natural phonological processes in speech delayed children", Journal of Speech and Hearing Research, 25, 547-553.
- Carrell, P.L. (1984): "Evidence of a formal schema in second language comprehension". Language Learning, 34, 87-112, 1984.
- Carter, R. (1984): "The socio-linguistic analysis of narrative". Indian Journal of Applied Linguistics, 10, 97-106.
- Chafe, W.L. (1982): Cited by A. Hildyard and S.Hidi in "Oral written differences in the production and recall of narratives" 285-306; in "Literacy Language and Learning - The nature and consequences of reading and writing". Ed. D.R. Olson, N. Torrance, A. Hildyard, Cambridge University Press, USA, 1985.
- Chappell, G.E. (1980): "Oral language performance of upper elementary school students obtained via story reformulation". Language, Speech, & Hearing Services in School, 11, 236-250.
- Cirilo, R.K. (1981): "Referential coherence and text structure in story comprehension". Journal of Verbal Learning and Verbal behaviour, 20, 358-368.

METHODOLOGY

Aim: The present study was a cross sectional one involving groups of children in three different age groups.

Aim of this study was to find out whether the ability to comprehend, recall and generate stories in hearing-impaired children was similar to normal peers.

Subjects: Two groups of age matched children were selected for the study. The test group consisted of 15 hearing-impaired children within the age range of 8-11 years. They were divided into three groups of one year age interval. These subjects were selected on the basis of

- Having bilateral moderately severe to profound sensori-neural hearing loss.
- Usage of hearing aid not less than one year.
- Attending a special school/integrated school for the deaf.
- Mother tongue being Kannada.

These children were selected from two schools in Bangalore. One of them was a special school for the hearing-impaired: Where, oral-aural communication was used. Twelve subjects were selected from this school. The other three subjects were selected from an integrated school for the deaf where cued speech was used for communication. Attempts were made to select all the hearing-impaired subjects from

- Cirilo, R.K., and Foes, D.J. (1980): "Text structure and reading time for sentences". Journal of Verbal Learning and Verbal Behaviour, 19, 96-109.
- Clarke, B.R., and Todd Rogers, W. (1981) "Correlates of syntactic abilities in hearing-impaired students". Journal of Speech and Hearing Research, 24, 48-54.
- Cole, R.A., Perfetti, C.A. (1980): "Listening for mispronunciations in a children's story: The use of context by children and adults". Journal of Verbal Learning and Verbal Behaviour, 19, 297-315.
- Collins, W.A., Wellman, H., Kenston, A.H., Westby, S. (1978) : Cited by C.M. Scott in "A perspective in the evaluation of school children's narratives". Language, Speech and Hearing Services in Schools, 19, 67-82, 1988.
- Conrad, R. (1970): Cited by Gaines et al in "Immediate and delayed story recall by hearing and deaf children". Journal of Speech and Hearing Research. 24, 463-469, 1981.
- Conrad, R. (1973)t "Some correlations of speech coding in the STM of the deaf". Journal of Speech and Hearing Research, 16, 375-384.
- Cook-Gumprez, J. and Gumprez, J.J. (1978): "Context in children's speech". In "The development of communication". Ed. N.Waterson and C.Snow, John Wiley and Sons Ltd., USA, 1978.
- Crais, E.L., Chapman, R.S. (1987): "Story recall and inferencing skills in language/learning disabled and non-disabled children". Journal of Speech Hearing Disorders, 52, 50-55.
- Culatta, B., Page, J.L., Ellis, J. (1983): "Story retelling as a communicative performance screening tool". Language, Speech and Hearing Services in Schools, 14, 66-74.
- Damico, J.S., Oiler, Jr. J.W., Storey, M.R. (1983): "The diagnosis of language disorders in bilingual children surface oriented and pragmatic criteria". Journal of Speech Hearing Disorders, 48, 385-394.

- Danforth, L.M. (1983): Cited by D.Roemer in 'Children's Verbal Folklore'. The Volta Review, 85, 55-71.
- Dasgal, M. (1983): Chapter-2 "Transparency" 61-126. In "Pragmatics and the philosophy of mind-thought in language". John Benjamin's Publishing Co., Amsterdam, 1983.
- de Villiers, J.G., and de Villiers, P.A. (1978): Chapter-5 "Discourse and metalinguistics", 151-172. In "Language Acquisition", Harvard University Press, USA, 1978.
- Disegna Merritt, D., Liles, B.z. (1987): "story grammar ability in children with and without language disorder: Story generation, story retelling and story comprehension". Journal of Speech and Hearing Research, 30, 539-552.
- Disegna Merritt, D., Liles, B.Z. (1989): "Narrative Analysis: Clinical applications of story generation and story retelling". Journal of Speech Hearing Disorders, 54, 438-447.
- Fletcher, C.R. (1981): "Short term memory processes in text comprehension". Journal of Verbal Learning and Verbal Behaviour, 20, 564-574.
- Fletcher, C.R. (1981): Cited by C.R.Fletcher and C.P.Bloom in "Causal reasoning in the comprehension of simple narrative texts". Journal of Memory and Language, 27, 235-244, 1988.
- Fletcher, C.R. (1986): "Strategies for the allocation of short-term memory during comprehension". Journal of Memory and Language, 25, 43-58.
- Fletcher, C.R., Bloom, C.P. (1988): "Causal reasoning in the comprehension of simple narrative texts". Journal of Memory and Language, 27, 235-244*
- Flood, J., Lapp, D. (1981): In Chapter-13 "Comprehending stories and texts" 349-392. In "Language/reading instructions to the young child". MacMillan Publishing Co. INC, USA, 1981.

- Foster, S. (1983); "Topic and the development of discourse structure". In "Learning to communicate implications for the hearing impaired". Ed. R. Traux and J. Shultz. The Volta Review, 85, 44S-54S.
- Gaines, R., Mandler, J.M., Bryant, P. (1981): "Immediate and delayed story recall by hearing and deaf children". Journal of Speech and Hearing Research, 24, 463-469.
- Garnhsm, A. (1985): In Chapter-7, "Understanding discourse and Text". 134-164. In "Psycholinguistics - Central Topics in Linguistics". Methuen and Co. Ltd. England, 1985.
- Geers, A.E., and Moog, J.S. (1978): "Maturity of spontaneous speech and elicited imitations of hearing impaired children". Journal of Speech Hearing Disorders, 43, 380-391.
- Glenn, C. (1978): "The role of episodic structure and of story length in children's recall of simple stories". Journal of Verbal Learning and Verbal Behaviour, 17, 229-247.
- Goldman, S.R., Varnhagen, C.K. (1986): "Memory for embedded and sequential story structure". Journal of Memory and Language, 25, 401-418.
- Gordon, C.J., Braun, C. (1983); Cited by C.M. Scott in "A perspective in the evaluation of school children's narratives". Language, Speech and Hearing Services in Schools, 19, 67-82, 1988.
- Gould, J.P. (1980): Cited by A. Hildyard and S. Hidi in "Oral written differences in the production and recall of narratives" 285-306. In "Literacy, Language and learning - the nature and consequences of reading and writing". Ed. D.R. Olson, N. Torrance, A. Hildyard, Cambridge University Press, USA, 1985.
- Graesser, A.C., Robertson, S.P., Lovelace, E.R., Swinehart, D.M. (1980): "Answers to why questions expose the organisation of story plot and predict recall of actions". Journal of Verbal Learning and Verbal Behaviour, 19, 110-120.
- Graybell, C.M. (1981): Cited by A.B. Sarachan-Deily in "Written narrative of deaf and hearing students: Story recall and inference". Journal of Speech and Hearing Research, 28, 151-158, 1985.

- Gruendel, J. (1980): Cited by N.J. Lund and J.F. Duchan in Chapter-8, "Discourse" 260-315, in "Assessing Children's language in naturalistic contexts". Prentice-Hall INC, USA, 1988.
- Guralnick, M.J., Paul-Brown, D. (1989): "Peer-related communicative competence of pre-school children": Developmental and adaptive characteristics". Journal of Speech and Hearing Research, 32, 930-943.
- Haberlandt, K., Berian, C, Sandson, J. (1980): "The episode schema in story processing". The Journal of Verbal Learning and Verbal Behaviour, 19, 635-650.
- Halliday, M. (1975): Cited by N.Verrell in "Oral and written narrative skills of primary school-aged children". Australian Journal of Human Communication Disorders, 17, 3-16, 1989.
- Haslett, B.J. (1983): Cited by N.Verrell in "Oral and Written narrative skills of primary school-aged children". Australian Journal of Human Communication Disorders, 17, 3-16, 1989.
- Hedberg, N.L., Fink, R.J. (1984): Cited by CM. Scott in "A perspective on the evaluation of school children's narratives". Language, speech and Hearing Services in Schools, 19, 67-82, 1988.
- Hess, L. (1972): Cited by R.R. Kretschmer and L.W. Kretschmer in "Language development and interaction with the hearing-impaired". Chapter-4, 85-142, In "Language and deafness". University Park Press, USA, 1978.
- Hildyard, A., and Hidi, S. (1985): "Oral-Written differences in the production and recall of narratives" 285-306. In "Literacy, language and Learning-The Nature and consequences of reading and writing". Ed. D.R. Olson, N. Torrancey A. Hildyard, Cambridge University Press, USA, 1985.
- Hildyard, A., and Olson, D.R. (1982b): Cited by A. Hildyard and S.Hidi "Oral written differences in the production and recall of narratives", 285-306. In "Literacy, language and learning - the nature and consequences of reading and writing". Ed. D.R.Olson, N. Torrance; A. Hildyard, Cambridge University Press, USA, 1985.

- Hopper, R., Naremore, R.C. (1978): In Chapter-5, "Development of Pragmatics", 60-82; In "Children's Speech" Harper and Row Publishers, USA, 1978.
- Horrmann, H. (1986): In Chapter-6; "The structure of Utterances" 169-200. In "Meaning and context - an introduction to the psychology of language". Ed. R.E. Innis, Plenum Press, USA, 1986.
- Hudson, J., Nelson, K. (1983): Cited by R.G. Mandel and N.S. Johnson in "A developmental analysis of story recall and comprehension in adulthood". Journal of Verbal Learning and Verbal Behaviour, 23, 643-659, 1984.
- Iram-Nejad, A., Ortony, A., Rittenhouse, L.K. (1981): "The comprehension of metaphorical uses of English by deaf children". Journal of Speech and Hearing Research, 24, 551-556.
- James, S.L., Seebach M.A. (1982): "The pragmatic function of children's questions". Journal of speech and Hearing Research, 25, 2-11, 1982.
- Johnston, J., Blatchley, M., Streit Olness, G. (1990): "Miniature language system acquisition by Children with differential learning proficiencies". Journal of Speech and Hearing Research, 33, 335-342.
- Johnson, A.R., Johnston, E.B., Weinrich, B.D. (1984): "Assessing pragmatic skills in children's Language". Language, Speech and Hearing Services in Schools, 15, 2-9.
- Johnson, N.S., Mandel, R.G. (1982): Cited by R.G. Mandel and N.S. Johnson in "A developmental analysis of story recall and comprehension in adulthood". Journal of Verbal Learning and Verbal Behaviour, 23, 643-659, 1984.
- Karniloff Smith, A. (1979): "Comprehension experiments: Deictic exophoric and quantifier functions of determiners" Chapter-7, 185-192. In "A functional approach to child language- A study of determiners reference", Cambridge University Press, Great Britain, 1979.

- Karniloff-Smith, A. (1979); in "Production experiments; Anaphoric function" Chapter-5, 141-147. In "A functional approach to child language - A study of determine and reference". Cambridge University Press, Great Britain, 1979.
- Kintsch, W. (1977); Cited by G.J. Spilich, G.T. Vesonder, H.L.Chiesi, J.F. Voss in "Text processing of domain related information for individuals with high and low domain knowledge". Journal of Verbal Learning and verbaing Behavior, 18, 275-290, 1979.
- Kintach, W. (1978); Chapter-2 "Comprehension and memory of text", 57-86. In "Handbook of learning and cognitive processes. Vol.6, Linguistic function in cognitive theory". Ed.w.K.Estea Lawrence Erlbaum Associates, INC, USA, 1978.
- Kintsch, W., Greene, E. (1978); Cited by W.F. Brewer in Chapter-9, "The story schema; Universal and Culture specific properties", 167-194. In "Literacy, Language and Learning - The nature and consequences of reading and writing". Ed. D.L. Olson, N.Torrance; A. Hildyard, Cambridge University Press, USA, 1985.
- Kintsch, W., and van Dijk, T (1975): Cited by T. Nezworski, N.L.Stein and T. Trabasso in "Story structure versus content in children's recall" Journal of Verbal learning and Verbal Behaviour , 21, 196-206, 1982.
- Klecan-Aker, J.S. (1985): Cited by CM. Scott in "A perspective in the evaluation of school children's narratives". Language, Speech and Hearing, Services in Schools, 19, 67-82, 1988.
- Klecan-Aker, J., Blondean, R. (1990): "An examination of the written stories of hearing impaired school age children". The Volta Review, 92, 275-282.
- Klecan-Aker, J., McIngvale, G., Swank (1987); Cited by J. Klecan-Aker and R.Blondean in "An examination of the written stories of hearing-impaired school age children". The Volta Review, 92, 275-282, 1990.

- Kretschmer, R.R. (1976): "Language acquisition". In "A bicentennial monograph on hearing impairment: Trends in the USA". A.G. Bell Association for the Deaf INC, USA.
- Labov, W., and Waletzky, J. (1967): cited by C.C. Sleight and P.M. Prinz in "Use of abstracts, Orientations and codas in narration by language disordered and non-disordered children". Journal of Speech Hearing Disorders, 50, 361-371, 1985.
- Lailakhan, L.M., James, S.L. (1980): "A method for assessing use of grammatical structures in language disordered children". Language, Speech and Hearing Services in Schools, 11, 188-197.
- Leonard, L.B. (1984): Chapter-2, "Normal language acquisition! some recent findings and clinical implications", 1-36. In "Language disorders in Children - recent advances". Ed. A.L. Holland, College Hill Press, USA, 1984.
- Lesgold, A.M., Roth, S.F., Curtis, M.E. (1979): "Foregrounding effects in discourse comprehension". Journal of Verbal Learning and Verbal Behaviour, 18, 291-308.
- Levy, D.M. (19): In "Communicative goals and strategies - between discourse and syntax", 183-208. In "Syntax and semantics - Discourse and syntax 12" Ed. T.Givon.
- Liben, L.S. (1979): Cited by Gaines et al. in "Immediate and delayed story recall by hearing and deaf children". Journal of Speech and Hearing Research, 23, 463-469, 1981.
- Liles, B.Z.(1985): "Cohesion in the narratives of normal and language disordered children". Journal of Speech and Hearing Research, 28, 123-133.
- Liles, B.Z. (1987): "Episode organization and cohesive conjunctives in narratives of children with and without language disorder". Journal of Speech and Hearing Research, 30, 185-196.

- Lund, N.J., Duchan, J.F. (1988): Chapter-8, "Discourse". 260-315. In "Assessing children's Language in naturalistic contexts". Prentice Hall INC, USA, 1988.
- Lundsteen, S.W. (1976): "Children learn to communicate: Language arts through creative problem solving", Prentice Hall INC, USA. 1976.
- Handler, J.M. (1978): Cited by E.G. Mandel and N.S. Johnson in "A developmental analysis of story recall and comprehension in adulthood". Journal of Verbal Learning and Verbal Behaviour, 23, 643-659, 1984.
- Handler, J.M., DeForest, M. (1979): Cited by R.G. Mandel and N.S. Johnson in "A developmental analysis of story recall and comprehension in adulthood". Journal of Verbal Learning and Verbal Behaviour, 23, 643-659, 1984.
- Handler, J.M., Goodman, M.S. (1982): "On the psychological validity of story structure". Journal of Verbal Learning and Verbal Behaviour, 21, 507-523.
- Handler, J.H., and Johnson, N.S. (1977): Cited by R.G. Mandel and N.S. Johnson in "A developmental analysis of story recall and comprehension in adulthood". Journal of Verbal Learning and Verbal Behaviour. 23, 643-659, 1984.
- Handel, R.G., Johnson, N.S. (1984): "A developmental analysis of story recall and comprehension in adulthood". Journal of Verbal Learning and Verbal Behaviour, 23, 643-659.
- Handler, J.M., Seribner, S., Cole, M., DeForest, M. (1980): Cited by W.F. Brewer in Chapter-9, "The story schema: Universal and culture specific properties", 167-194. In "Literacy, Language and Learning - The nature and consequence of reading and writing". Ed. D.R. Olson, N. Torrance, A. Hildyard, Cambridge University Press, USA, 1985.
- Maranda, E.K., and Maranda, P. (1971): Cited by D. Roemer in "Children's verbal folklore". The Volta Review, 85, 55-71, 1983.

- Marschank, M., West, S.A. (1985): "Certain language abilities of deaf children". Journal of Speech and Hearing Research, 28, 73-78.
- Maxwell, S.E., and Wallach, G.P. (1984): Cited by D.Bisegna Merrit and B.Z. Liles in "Story grammar ability in children with and without language disorder: story generation, story retelling and story comprehension". Journal of Speech and Hearing Research, 30, 539-552 1987.
- McKirdy, L.S., Blank, M. (1982): "Dialogue in deaf and hearing preschoolers". Journal of Speech and Hearing Research, 25, 487-499.
- McKoon, G., Ratcliff, R. (1980): "Priming in item recognition: The organisation of propositions in memory for text". Journal of Verbal Learning and Verbal Behaviour, 19, 369-386.
- McKoon, G., Ratcliff and Seifert, C. (1989): "Making the connection: Generalized knowledge structures in story understanding". Journal of Memory and Language, 28, 711-734.
- Michaels, S. (1983): "The role of adult assistance in children's acquisition of literate discourse strategies". In "Learning to communicate: Implications for the hearing-impaired". Ed. R.Truax, J. Shultz, The Volta Review, 85, 72S-87S.
- Miller, M. (1978): "Pragmatic constraints on the linguistic realization of 'semantic intentions' in early child language", 453-467. In "The development of communication", Ed. N. Waterson and C.snow, John Wiley and Sons, USA, 1978.
- Moffett, J., Wagner, B.J. (1976): Chapter-15 "Invented stories", 297-319. "Student centered language arts and reading, K-13-A handbook for teachers". Houghton Mifflin Co. USA, 1976.
- Moffett, J., Wagner, B.J. (1976): Chapter-16, "True stories" 320-354. In "Student centered language arts and reading, K-13-A handbook for teachers", Houghton Mifflin Co. USA, 1976.

- Morrow, L.M. (1984): "Reading stories to young children: Effects of story structure and traditional questioning strategies on comprehension". Journal of Reading Behaviour, 16, 273-288.
- Nezworski, T., Stein, N.L., Trabasso, T. (1982): "Story structure versus content in children's recall". Journal of Verbal Learning and Verbal Behaviour, 21, 196-206.
- Olley, L. (1989): "Oral narrative performance of normal and language impaired school aged children". Australian Journal of Human Communication Disorders, 17, 43-66.
- Omanson, R.C. (1982): "The relation between centrality and story category variation". Journal of Verbal Learning and Verbal Behaviour, 21, 326-337.
- Osterreich, H., and Steins, J. (1979): "A study of story retelling among young bilingual Indian children's". 237-248. In "Language, Children and society - The effect of social factors on children learning to communicate". Ed. U.K. Garnica and M.L. King, Pergamon Press, England, 1979.
- Paterson, C. (1990): "The who, when and where of early narratives". Journal of Child Language, 17, 433-455.
- Paul, R., Shriberg, E.J. (1982): "Association between phonology and syntax in speech delayed children". Journal of Speech and Hearing Research, 25, 4, 536-546.
- Peterson, C, and McCabe, A. (1983): Cited by D.D. Merrit, and B.Z. Liles in "Story grammar ability in children with and without language disorder: story generation story retelling and story comprehension". Journal of Speech and Hearing Research, 30, 539-552, 1987.
- Petty, W.T., Petty, D.C, Beeking, M.F. (1976): Chapter-5, "Foundations for language growth", 77-105. In "Experiences in language-Tools and techniques for language arts methods". Allyn and Bacon INC, USA, 1976.

- Pilon, A.B. (1978): "Teaching language arts creatively in the elementary grades". John Wiley and Sons, USA, 1978.
- Pitner, R., Patterson, D. (1917): Cited by Gaines et al in "Immediate and delayed story recall by hearing and deaf children". Journal of Speech and Hearing Research, 23, 463-469, 1981.
- Pollio, M.R., and Pickens, J.P. (1980): Cited by C. Cacciari and M.c. Levorato in "How children understand idioms in discourse". Journal of Child Language, 16, 387-405, 1989.
- Poulaen, D., Kintsch, E., Kintsch, W., and Premack, D. (1979): Cited by R.G.Mandel and N.S. Johnson in "A developmental analysis of story recall and comprehension in adulthood". Journal of Verbal Learning and Verbal Behaviour, 23, 643-659, 1984.
- Rickheit, G., Kock, H. (1983): In "Inference processes in text comprehension". In "Psycholinguistic studies in language processing". Ed. C. Rickheit, and M.Bock, Walter deSruyter, Berlin, 1983.
- Ripich, D.N., Griffith, P.L. (1985): Cited by CM. Scott in "A perspective on the evaluation of school children's narratives". Language, Speech and Hearing Services in schools, 19, 67-62, 1988.
- Robertson, M. (1984): "Story processing, post structuralism and metaphysics". Indian Journal of Applied Linguistics, 9, 125-144.
- Roemer, D.M. (1982): "Children's verbal folklore". The Volta Review, 85, 55-71, 1983.
- Roth, F.P., Spekman, N.J. (1986): "Narrative discourse: spontaneously generated stories of learning-disabled and normally achieving students". Journal of Speech Hearing Disorders, 51, 8-23.
- Russell, E., Quigley, S., Power, D. (1976): Cited by A.B. Saracham-Deily in "written narratives of deaf and hearing students", Story recall and inference". Journal of Speech and Hearing Research, 28, 151-159, 1965.

- Sarachan-Deily, A.B. (1985): "Written narratives of deaf and hearing students: Story recall and inference". Journal of Speech and Hearing Research, 29, 151-158.
- Schank R.C. and Abelson, R.P. (1977): Cited by R.C. Omsion in "The relation between centrality and story category variation". Journal of Verbal Learning and Verbal Behaviour, 21, 326-337, 1982.
- Schober-Peterson, D., Johnson, C.J. (1989): "Conversational topics of 4 year olds". Journal of Speech and Hearing Research, 32, 857-870.
- Schwarz, M.N.K., Flammer, A. (1981): "Text structure and title-Effects on comprehension and recall". Journal of Verbal Learning and Verbal Behaviour, 20, 61-66.
- Scott, C.M. (1984): Cited by C.M. Scott in "A perspective on the evaluation of school children's narratives". Language, Speech and Hearing Services in Schools, 19, 67-82, 1988.
- Scott, C.M. (1988): "A perspective on the evaluation of school children's narratives". Language, Speech and Hearing Services in Schools, 19, 67-82.
- Scott, C.M., Cunningham, J. (1987): Cited by C.M. Scott in "A perspective on the evaluation of School children's narratives". Language, Speech and Hearing Services in schools, 19, 67-82, 1988.
- Sleight, C.C., Prinz, P.M. (1985): "Use of abstracts, orientations and codas in narration by language disordered and non-disordered children". Journal of Speech Hearing Disorders, 50, 361-371.
- Smith, L. (1972): Cited by R.R. Kretschmer and L.W. Kretschmer in "Language development and intervention with the hearing-impaired" Chapter-4, 85-142. In "Language and Deafness", University Park Press, USA, 1978.

- Spilich, G.J., Vesondes, G.T., Chiesi, H.L., and Voss, J.F. (1979): "Text processing of domain related information for individual with high and low domain knowledge". Journal of Verbal Learning and Verbal Behaviour, 18, 275-290.
- Stein, N.L. (1976); Cited by R.G.Mandel and N.S. Johnson in "A developmental analysis of story recall and comprehension in adulthood". Journal of Verbal Learning and Verbal Behaviour, 23, 643-659, 1984.
- Stein, N.L and Glenn, C. (1979): Cited by L.B. Leonard in "Normal language acquisition: Some recent findings and clinical implications", Chapter-1, 1-36. In "Language Disorders - in children - recent advances". Ed. A.L. Holland, College Hill Press, USA, 1984.
- Stein, N.L., and Nezvorski, T. (1978): Cited by J.M. Handler and M.S. Goodman in "On the psychological validity of story structure". Journal of Verbal Learning and Verbal Behaviour, 21, 507-523 (1982).
- Stoutenburgh, G. (1971): Cited by R.R.Kretschmer and L.W. Kretschmer in "Language development and intervention with the hearing-impaired". Chapter-4, 85-142. In "Language and deafness". University Park Press, USA, 1978.
- Struckless, E.R., Pollard, G. (1977): Cited by A.B. Sarachan-Deily in "Written narratives of deaf and hearing students' story recall and inference". Journal of Speech and Hearing Research, 28, 151-158, 1985.
- Thorndyke, P. (1978): Cited by P. Baggett in "Structurally equivalent stories in movie and text and the effect of the medium on recall". Journal of Verbal Learning and Verbal Behaviour, 18, 333-356, 1979.
- Unikar-Sebeok, J. (1979): "Preschool children's intraconversational narratives". Journal of Child Language, 6, 91-109.

- Van den Brock, P. (1988): "The effects of causal relations and hierarchical position on the importance of story statements". Journal of Memory and Language, 27, 1-22.
- Van den Brock, P., and Trabaaso, T. (1986): Cited by P. van den Brock in "The effects of causal relations and heierarchical position on the importance of story statements". Journal of Memory and Language, 27, 1-23, 1988.
- Van Kleeck, A., Frankel, T.L. (1981): "Discourse devices used by language disordered children". Journal of Speech Hearing Disorders, 46, 250-257.
- Verrell, N. (1989): "Oral and written narrative skills of primary school aged children". Australian Journal of Human Communication Disorders, 17, 3-16.
- Voss, J.F., Vesonder, G.T., spilich, G.J. (1980): "Text generation and recall by high knowledge and low knowledge individuals". Journal of Verbal Learning and Verbal Behaviour, 19, 651-667.
- Walker, C.H., Meyer, B.J.F. (1980): "Integrating different types of information in text". Journal of Verbal Learning and Verbal Behaviour, 19, 263-275.
- Warden, D.A. (1976): Cited by J.G. deVilliers, and P.A. deVilliers, in Chapter-6, "Discourse and metalinguistics" 151-172. In "Language Aguisition", Harvard University Press, USA, 1978.
- Westby, C. (1982): Cited by N.Verrell in "Oral and written narrative skills of primary school aged children". Australian Journal of Human Communication Disorders, 17, 3-16, 1989.

Wiltgenstein, L. Cited by V.Lee in "Language Development"
Groom Helm Ltd., Great Britain, 1979.

Yekovich, F.R., Thorndyke, P.W. (1981): "An evaluation
of alternative functional models of
narrative schemata". Journal of Verbal
Learning and Verbal Behaviour, 20,
454-469.