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Clancy, Patricia

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The Acquisition of Narrative Discourse:
A Study in Japanese

By

Patricia Marie Clancy

A.B. (Hunter College of the City University of New York) 1972

M.A. (University of California) 1975

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DISSERTATION

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Approved:

Wallace K. Chafe

Chairman

May 20, 1980
Date

Jan. I. Robin

May 20, 1980

Hiro Aoki

May 21, 1980

DOCTORAL DEGREE CONFERRED

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To my parents
with love and gratitude

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TABLE OF CONTENTS

	List of Tables	
1	The Study of Narratives from a Cognitive Perspective	1
	The Sources of Schema Theory	1
	Proposed Story Schemas	15
	The Functions of Story Schemas	45
	Summary and Conclusions	58
2	A Developmental Study of Narrative Production	63
	The Verbalization of Experience in Stories	63
	The Input Story	70
	Subjects and Interviewers	74
	The Narrative Sessions	75
	Transcription and Translation	78
	Data Analysis and Presentation	81
3	Background Information and Episodic Structure	86
	Story and Episode Settings	86
	Developmental Differences in the Presentation of Background Information	92
	Degrees of Episodic Structure	112
	Summary and Conclusions	122
4	Episode Schemas	130
	Common Schemas for Event Sequences	130
	Structural Variation and Ambiguity	147
	Structural Elaboration vs. Centration	162
	Summary and Conclusions	168

5	Thematic Organization	172
	The Problem-Resolution Schema	175
	Treatment of the Problem-Resolution Schema	184
	Irrelevant Story Content	195
	Thematic Cohesion	204
	Summary and Conclusions	208
6	Linguistic Organization: Sentences and Conjunctions	211
	Prior Research on Sentences in Discourse	211
	Sentence Length	221
	Sentence Coherence	238
	Inter-Clausal Connectives	254
	Summary and Conclusions	271
7	Memory for Audio-Visual Narratives	276
	Theories of Story Recall	276
	Selective Recall in the Sazaesan Narratives	284
	Episode Transitions and Retrieval Mechanisms	296
	Evidence for Constructive Recall	312
	Summary and Conclusions	322
8	Conclusions	328
	References	340

LIST OF TABLES

1	Percentage of episode settings including each type of information	93
2	Percentage of narrative segments told from each perspective . .	104
3	Percentage of narratives with opening and closing formulas . .	107
4	Frequency of inadequate episode settings	115
5	Strength of episode boundaries	121
6	Frequency of reaction types	134
7	Relative frequencies of typical schemas for events	145
8	Unanimity in choice of episode schemas	156
9	Frequency of episode centration	166
10	Percentage of narratives with 0 - 3+ presupposition failures . .	186
11	Percentage of narrators producing different numbers of problem-resolution pairs	188
12	Average number of themes per episode and story	206
13	Thematic cohesion: the percentage of episodes presenting new and old themes	207
14	Number of clauses per sentence	224
15	Preferred individual strategies for sentence construction . . .	231
16	Percentage of sentences and sentence boundaries coinciding with narrative units	249
17	Relative proportions of clause-final connectives	258
18	Relative proportions of clause-initial connectives	268
19	Preferred conjoining strategies of individual narrators	270
20	Percentage of chronological and consecutive episode transitions	290
21	Length of narratives	293
22	Sex differences in average number of clauses per story	296
23	Percent of episode transitions based on imaginal, thematic, and schematic retrieval	310
24	Frequency of three types of constructive changes	315

CHAPTER 1

THE STUDY OF NARRATIVES FROM A COGNITIVE PERSPECTIVE

The Sources of Schema Theory

In recent years linguists have increasingly turned their attention to the study of language structure at levels higher than the sentence, and researchers in child language have also begun to investigate discourse. Former studies of linguistic development, which focused primarily upon the sentence level, seemed to indicate that language acquisition, at least of English, was fairly complete at an early age, with the exception of certain irregular syntactic/semantic features [Chomsky, 1969]. When higher levels of analysis are considered, it is apparent that children are still learning about language structure during kindergarten and the early grade school years. The successful production of certain types of discourse, such as narratives, builds upon the basic syntactic, semantic and pragmatic skills developed in early years, but represents a more advanced stage of development in terms of the linguistic, cognitive, and social demands placed upon the child. Thus the study of discourse extends our understanding of the process of language acquisition, and the analysis of different types of discourse from the standpoint of the child learning language can give insight into the skills which adults bring to bear in performing these speech acts.

In recent years narratives have been one of the most studied forms of discourse. Research in this field has a long tradition, for example, in the anthropological investigations of the fables, myths, and folktales of other cultures, and in the literary analysis of written

forms of narrative. In every day speech, narratives constitute a culturally recognized form of speech act, having an identifiable structure which distinguishes them from other genres of discourse. People have intuitions about good and bad stories, and successful and unsuccessful storytellers; this suggests that there are norms for storytelling which adults share, and which children are exposed to, and may eventually acquire. Adult narratives have been studied extensively in the past several years, and the development of narrative skills provides an interesting area of investigation for the study of language acquisition beyond the early stages.

Investigation of children's narratives has, for the most part, been based on models developed for the analysis of adult narratives. The two most popular models for research on children's stories have been Labov's structural analysis and story grammars. Labov's approach [Labov, 1972; Labov and Waletzky, 1968] relies upon "the basic techniques of linguistic analysis, isolating the invariant structural units which are represented by a variety of superficial forms." Based on narratives of personal experience told by American adolescents and adults, Labov postulates a "normal form for oral versions of personal experience" consisting of: abstract, orientation, complicating action, evaluation, result or resolution, and coda, although only the complicating action is essential. If adults know that there is a normal form for narrative structure, and produce stories which conform to it, then from the standpoint of acquisition, the task of the child is to learn this structure. Accordingly, Labov's analysis of narrative structure has provided the framework for many developmental studies. These have differed in the ages of the children

studied, the types of narratives produced, the contexts in which the stories were told, and the backgrounds and the goals of the researchers. Stories have been collected from children and analyzed in terms of the formal structure for a "normal" narrative which Labov proposed, in order to discover which parts of the normal narrative children typically produce, and to suggest reasons for these developmental trends [Kernan, 1977; Umiker-Sebeok, 1979; Watson, 1972; Brady, 1978].

The other popular framework for the study of the acquisition of narratives has been the story grammar model. This approach also seeks to identify an underlying structure for narratives which children must acquire. However, since many of the researchers working within this framework have been psychologists, they have been concerned not only with a structural analysis of narratives, but also with the formulation of a theory having psychological validity. Story grammars specify rules for the structure of good stories, which are intended to represent people's knowledge of the parts of the typical, or ideal, story and the relationships among these parts. These grammars have been proposed as theoretical models for explaining how stories are understood, remembered, and produced, and are assumed to represent the adult standard which is the end-point of the acquisition of narratives. To understand the goals, assumptions, and problems of this approach to the acquisition of narratives, it is useful to consider the linguistic model upon which it is based, and the psychological implications of that model.

The source of the formal properties of story grammars, as well as certain assumptions about their cognitive status, is the generative theory of syntax set forth by Chomsky. In numerous writings, Chomsky proposed

that linguistic research constitutes one aspect of the study of the human mind; for example, in *Aspects of the Theory of Syntax* [1965], he stated that, "... linguistic theory is mentalistic, since it is concerned with discovering a mental reality underlying actual behavior." The syntactic component of a grammar was given primary importance in generative theory; it is this component, Chomsky claimed, which accounts for the fundamental creativity of language, the speaker's ability to produce an infinite number of novel sentences. Every speaker of a language, in this view, has mastered and internalized a finite set of phrase-structure rules; these rules generate basic syntactic structures from which an infinite number of surface sentences can be derived by a set of transformational rules. The syntactic structures generated by the phrase-structure and transformational rules were formalized in tree diagrams which provide structural descriptions of the constituents of sentences and the hierarchical relationships among these constituents. The system of rules which make up the syntactic component of a grammar was intended to describe the unconscious knowledge of his language, or "competence," possessed by the native speaker.

In his writings, Chomsky emphasized that a distinction must be made between this unconscious knowledge and "performance," which is the "actual use of language in concrete situations." He stressed that a "generative grammar is not a model for a speaker or a hearer," but rather "attempts to characterize in the most neutral possible terms the knowledge of the language that provides the basis for actual use of language by a speaker-hearer." This caveat was apparently aimed at misinterpretations of certain terms, such as "generate" or "derivation," which could be taken

as descriptions of the process of sentence construction. Chomsky made it clear that he did not believe that speakers first "generate" structures such as NP + VP, and then "derive" several successive structures by transformational rules, and finally "interpret" the meaning of their sentence. However, although Chomsky did not intend his grammar to serve as a process model, it was clear that he was attributing cognitive status to the rule system as a whole, in fact, innate status to the universal aspects of that system. Furthermore, the body of rules was assumed to have a role in psychological functioning or "performance." For example, Chomsky [1965] stated that the linguist must determine "the underlying system of rules that has been mastered by the speaker-hearer and that he puts to use in actual performance," and claimed [1968] that a grammar "suggests an explanation for the fact that ... a speaker of the language in question will perceive, interpret, form, or use an utterance in certain ways and not in other ways." Chomsky emphasized that knowledge of a language, as described in a generative grammar, is only one of the factors involved in performance, or actual language use. Exactly how the mental rule system is used in the production and comprehension of language was not specified. Yet the syntactic rules were clearly assumed to have psychological validity as representations of what speakers know about sentence construction, if not process models of how they actually construct sentences, and this knowledge was taken to be one of the inputs to the system of production.

The emphasis on competence in Chomsky's theory had considerable influence on research within linguistics and language acquisition, since it established the study of competence as the goal for theories purporting

to have generality, explanatory value, and cognitive significance.

Clearly, the formulation of a general system of rules capable of describing the structure of an infinite number of individual sentences is of theoretical import, whereas an analysis of individual sentences cannot explain, for example, the native speaker's ability to judge the grammaticality of sentences which he has never heard before. Similarly, in the investigation of narratives, the details of individual stories are not of interest to the formulation of a general theory explaining people's ability, for example, to recognize a good story when they hear one.

In keeping with Chomsky's theory of competence, story grammars have attempted to formulate a finite set of general rules which represent what speakers know about narrative structure, the structural regularities which make narratives about very different subjects identifiable as narratives. Thus the goal of story grammars is to describe narrative competence. From the perspective of acquisition, the task of the child is to learn this system of rules, which will enable him to produce and understand stories, just as the development of syntactic competence allows him to produce and understand sentences.

The idea that there are rules which have psychological significance, and can describe the structure of a wide variety of different stories, had already been proposed in research on narratives conducted within an entirely different framework from that of generative grammar. Propp, in his classic 1928 study of Russian folktales, which was translated into English in 1958, presented an analysis of the underlying structure of folktales which has influenced current theories of story grammar. Propp's structural approach was intended to supercede the many unsuccessful

attempts which had been made to categorize fairy tales on the basis of non-structural principles, such as themes or characters. Propp started from the premise that "study on the basis of small component parts is the correct method of investigation," and sought to identify the basic units of the fairy tale and how these are related to one another and to the tale as a whole. His analysis was based on the distinction between form and content, and his goal was to determine the formal features of the tales which remained the same despite differences in content.

The fundamental components of the fairy tale which Propp identified were "the functions of the *dramatis personae*." A function is "an act of a character, defined from the point of view of its significance for the course of action." Propp expressed the functions as nouns denoting particular actions, such as "villainy," "flight," and "punishment." The definition of each function was independent of the character who fulfilled it or the details of the particular action; for example, "villainy" could refer either to a dragon kidnapping the tsar's daughter or to a mare eating a haystack. The number of functions which Propp identified was extremely limited, with a total of 31 functions accounting for the components of all 100 tales in his sample.

Not only were there very few functions, but the sequence in which they occurred in the tales was invariable. Propp concluded that "all fairy tales are of one type in regard to their structure," and are based on a "scheme" consisting of a limited number of elements in a fixed order. Narrators are free to select or omit functions, and to choose the means through which a function is realized, but beyond this, Propp stated, they are constrained by the invariant scheme. Propp recognized that

the existence of such a scheme for stories had psychological implications, and suggested that for the storyteller "it is possible to assume that the basic, vivid moments of our essentially very simple scheme ... play the psychological role of a kind of root." Typical schemes for constructing new tales, Propp noted, are "handed down for generations as ready-made formulae."

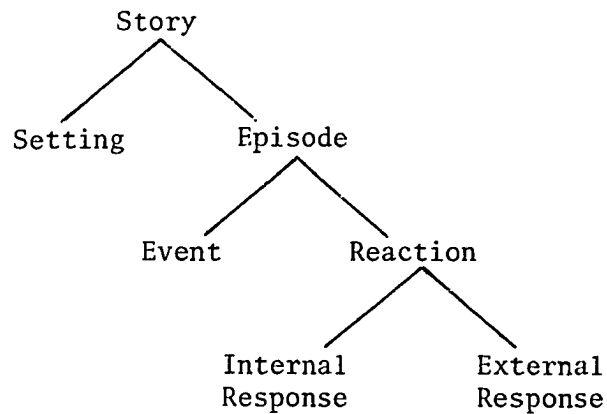
Propp's notion of an underlying structural scheme which the narrator knows, and which limits his storytelling behavior in predictable ways, is quite comparable with Chomsky's claim that a limited set of rules underlie and constrain the comprehension and production of sentences, and hence with the theory of story grammars. Furthermore, the details of Propp's findings on Russian folktales have served as a source for ideas about the structure of Western narratives, the categories of content which appear, and the ways in which their order is constrained. Rumelhart [1975] wrote a "grammar" for narrative structure on the generative model, which "is designed to capture the relationships among the structures developed by Propp."

Rumelhart's grammar, which has had considerable influence upon later story grammars, consists of a set of "syntactical rules" which generate the constituent structure of a wide range of simple stories having one protagonist. Rumelhart claims that the basic difference between a story and a string of unrelated sentences is the existence of "some higher level of organization" in the former. Propp did not group or hierarchize the functions which he isolated, nor did he attempt to subdivide functions such as "villainy" any further. In Rumelhart's grammar, the smallest structural unit is the single proposition, and the

grammar specifies several levels of hierarchical organization between the proposition and the story as a whole. As in generative grammars of syntax, a series of phrase structure rules is presented which specify the constituent structure of stories, such as:

Story	→	Setting + Episode
Episode	→	Event + Reaction
Reaction	→	Internal Response + External Response

and represents the structures generated by these rules in terms of "syntactic" trees, such as:



The narrative categories, such as "reaction," are broken down into successively smaller units until a category is reached which is represented by a single proposition in the text of the story being analyzed.

Rumelhart's story grammar has served as the basis for several other, more detailed attempts to specify a general underlying structure for narratives, such as Mandler and Johnson [1977], Thorndyke [1977], and Stein and Glenn [1979]. Unlike Propp's scheme, which incorporated categories such as "interdiction" and "pursuit," that were often limited

to the Russian folktales he studied, the recent story grammars are intended to separate form from content more clearly, specifying only those structural features which are shared by a large number of narratives. The grammars all generate a hierarchical structure of story categories. On the highest level of organization, the grammars usually specify that stories consist of a setting followed by at least one episode. The setting is generally agreed to contain information about the time, location, and characters of the story. There is much greater variation in the proposals for the lower levels of structure within episodes, but the smallest units generated by the grammars are always propositions. Thus story grammars represent narrative competence in terms of phrase-structure rules for "grammatical" stories.

Chomsky proposed that the goal of linguistic theory should be the study of competence, but psychologists and researchers in child language have also been interested in the formulation of process models for the production and comprehension of language. As Straight [1970] has pointed out, a neutral model of structural knowledge is much less interesting from a psychological point of view than a model which can readily be understood in terms of language use. In the field of language acquisition, despite the strong influence of the generative model, there has also been some interest in "performance." Since it is impossible to elicit grammaticality judgments from children in the early stages of language development, the grammars written to represent the competence of very young children necessarily have relied entirely upon performance data, usually transcripts of speech production. Sometimes grammatical rules have been used to represent the child's strategies for language production. For

example, Schlesinger [1971] set forth a "performance model" in which "realization rules" such as "agent + action" were intended to reflect the process of speech production. Slobin [1973] suggested that the form of linguistic rules is largely determined by short-term processing constraints, and therefore at the early stages of language acquisition, there may be very little difference between processing strategies and linguistic rules, with strategies for speech perception engendering the formulation of rules for speech production. Thus the orientation of researchers in child language has led them to seek rules which represent psychological processes, what the child does and how he does it, rather than just an abstract knowledge system underlying performance.

Research on narrative structure has also been directed toward the understanding of psychological processes, and not merely to the formulation of rules representing competence. In this area, the work of Bartlett has provided the basis for attributing a functional role in the processes of producing, comprehending, and recalling stories to the generative model set forth in story grammars. In his book *Remembering* [1932], Bartlett proposed a theory of memory in which pre-existing mental structures influence the way in which stories are interpreted and recalled. The basic theoretical construct in Bartlett's theory was the "schema," which he defined as "an active organization of past reactions, or of past experiences, which must always be supposed to be operating in any well-adapted organic response." These schemas, which are based upon the accumulated past responses of an organism, operate "en masse" to influence the nature of any current response. "Determination by schemata," Bartlett claimed, "is the most fundamental of all the ways in which we can be influenced by

reactions and experiences which occurred sometime in the past."

Bartlett advanced the concept of schemas to account for his findings in a number of experiments on memory, including the recall of narratives. Using the "method of repeated reproduction," he had subjects read the North American Indian folktale, "The War of the Ghosts," and then write the story from memory, at first only fifteen minutes after reading, and then at intervals of increasing length, up to several years. The results of Bartlett's experiments called into question the "trace" theory of memory which was then widely accepted. In that theory perception is a basically passive experience which leaves a trace or facsimile in the mind, that is revived without change in recall. In contrast, Bartlett found that his subjects did not recall the original story which they read accurately, but rather introduced extensive modifications, including omissions, addition of new material, and changes in the meaning, order, and emphasis of elements from the original story. Subjects tended to recall the general setting of the story and a few details, Bartlett found, and to reconstruct the rest of the original on the basis of schemas, which included a range of personal and social expectations, interests, and biases.

Bartlett's account of the role of schemas in recall was strongly assimilative. For example, the details which were remembered, he stated, were those which fit a subject's "pre-formed interests and tendencies;" additions, or "importations," depended largely upon subjects' point of view toward the story and their adaptation of any vivid mental images retained from the original to fit this point of view. Bartlett described the nature of assimilative recall in terms of "rationalization," an "effort after meaning" which seeks "to render material acceptable,

understandable, comfortable, straightforward; to rob it of all puzzling elements." Rationalization among Bartlett's subjects apparently operated both in the original perception, or interpretation, and at the successive points of recall. It was evidenced in recall protocols in various ways: subjects provided definite, stated connections between parts of the story which seemed incoherent and lacking in "obvious rational order," they re-interpreted events and details of the story in more familiar terms, and they treated unusual material as symbols of more familiar things. Rationalization, Bartlett claimed, continues until the subject reaches "the attitude in which no further questions are asked," and the story can be accepted comfortably; once this affective state is reached, subsequent repetitions of the story will show little change.

Bartlett explicitly rejected a solely assimilative view of the rationalization process, which he stated "is emphatically not merely a question of relating the newly presented material to old acquirements of knowledge," but rather depends primarily upon "the special reaction tendencies that are awakened in the observer by the new material, ... which then set the new into relation to the old." However, Bartlett's analysis of data focused on the assimilative changes which subjects made in the story, and he stated that "accurate recall is the exception and not the rule." Although cases of accurate recall might suggest a lack of assimilation, Bartlett stressed that the details which were accurately recalled were those which already fit the subjects' schemas, and therefore did not need further assimilation to be comfortably interpreted and retained. If subjects cannot understand or remember a new story accurately unless it fits their pre-existing schemas, this suggests that schemas

strongly resist modification. Bartlett concluded that "the actual memory process is strongly and evidently constructive," with the constructive process being based on schemas.

Bartlett's notion of schemas incorporated affective as well as formal, individual as well as social factors; schemas operated with respect to the content, style, form, and theme of narratives [cf. Oldfield and Zangwill, 1940, for a review of the sources of Bartlett's concept; and Northway, 1940, for a discussion of the different ways in which he used the term]. In *Remembering*, Bartlett pointed out that subjects were aware of the existence of different narrative structures, and stated that "response to a general scheme, form, order, and arrangement of material seems to be dominant, both in initial reception and in subsequent remembering." This was most marked with "cumulative" story forms; Bartlett's subjects almost always responded to the two stories of this type which he used by commenting that they were "of the 'House that Jack Built' type." The form of a story, Bartlett found, would be preserved with relatively little change throughout several reproductions of the original at successive time intervals. He concluded that "the form, plan, type, or scheme of a story seems, in fact, for the ordinary, educated adult to be the most dominant and persistent factor in this kind of material." However, Bartlett did not present detailed structural analyses of the stories he used, nor any specific proposals about the nature of people's knowledge of narrative form.

The authors of current story grammars have identified the structure generated by their phrase-structure rules for narratives with Bartlett's concept of mental schemas which operate in the comprehension and recall

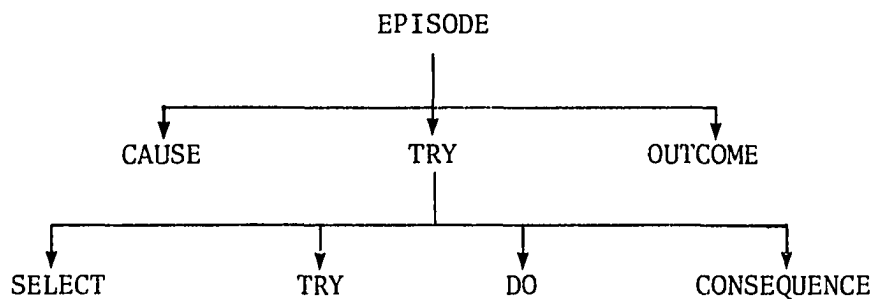
of narratives, and have limited the notion of "schema" to the cognitive structures which embody people's knowledge of narrative form. In keeping with the assimilative emphasis of Bartlett's theory, the story schemas generated by these grammars serve as the main theoretical constructs in explaining people's ability to understand, recall, and produce stories. Stories which do not fit the schema will be less well understood and will be re-interpreted in terms of the schema; new stories will be produced according to the rules of the schema; and in remembering stories, information which fits the schema will be accurately recalled, but other information will be forgotten or modified to fit the schema. On the basis of this identification of story grammars with Bartlett's theory of schemas, the apparent structure of narratives is assumed to be in some sense isomorphic with mental schemas for the ideal form of narratives. These cognitive constructs are then assigned a major functional role in the processes of story comprehension, recall and production. Furthermore, the structural schema generated by a story grammar is taken to be the end-point of development, the narrative competence which adults possess and which children must acquire.

Proposed Story Schemas

Since the story schemas which have been proposed are intended to have cognitive significance, and serve as the basis of theories of psychological processes, it is important to consider how they have been discovered and verified. The notion of a "grammar" for story structure implies that the rules will be able to account for the structure of all good, or "grammatical" narratives. However, at this point in the development of

schema theory, the data base used for abstracting structural schemas has been fairly limited. Rumelhart [1975] based his story grammar on the work of Propp, who had analyzed 100 stories, but all of one limited type, namely, Russian folktales. Thorndyke [1977] states that his grammar is a simplified version of Rumelhart's grammar, which was sufficient to represent the structure of the two stories which he used in his experiments. Mandler and Johnson [1977] found that Rumelhart's schema described a very narrow range of stories, those with single or embedded episodes, and attempted to account for a broader range of stories in the grammar they wrote, basing their modifications on "traditional folktales." However, the grammar only covers stories having a single protagonist in each episode, and cannot deal with stories in which two or more characters each experience their own reactions and carry on conversations. The most extensive research has apparently been done by Stein and Glenn [1979], who attempted to apply Rumelhart's grammar, and revised it on the basis of their analysis of more than 50 children's stories. Mandler and Johnson [1977] have justified the use of this data base on psychological grounds. Folktales, fables and myths, they state, serve as useful sources of information about story schemas since they have similar, clear structural characteristics. This is because these stories stem from an oral tradition, and therefore are subject to the limitations of human memory. The authors do not provide any evidence for their claim, but believe that by a kind of psychological natural selection, only the stories which conform to an "ideal schema," or which have gradually acquired such a structure through repeated re-tellings, will survive. Thus the schemas derived from this data base are assumed to reflect more closely an "ideal" story structure.

Although most story grammars have been based on these simple texts, the rules which have been formulated by different authors do vary in certain respects. All story grammars generate a story setting plus a sequence of one or more episodes, but proposals for episode-internal structure differ from author to author. In Rumelhart's [1975] story grammar, "episode" was defined as "event + reaction." An "event" could consist of an entire episode, a series of events, a change of state, or an action; a "reaction" could include an internal response and an overt response. Most schemas for episode structure, however, including Rumelhart's [1977] proposal, contain a goal, some attempt to achieve the goal, and the outcome of the attempt. In Rumelhart's [1977] formulation the "problem-solving episode" begins with an event which causes the protagonist to desire a goal, which he tries to achieve until some outcome occurs. Thus there are three basic subdivisions of an episode in Rumelhart's schema: CAUSE, TRY, and OUTCOME. The attempt to achieve the goal, or TRY, has an internal structure composed of four major constituents: selecting a method which could lead to the goal, trying to fulfill any preconditions for using the method, actually doing the method, and the consequence of doing the method. The structure of the problem-solving episode is presented in the form of a tree diagram:



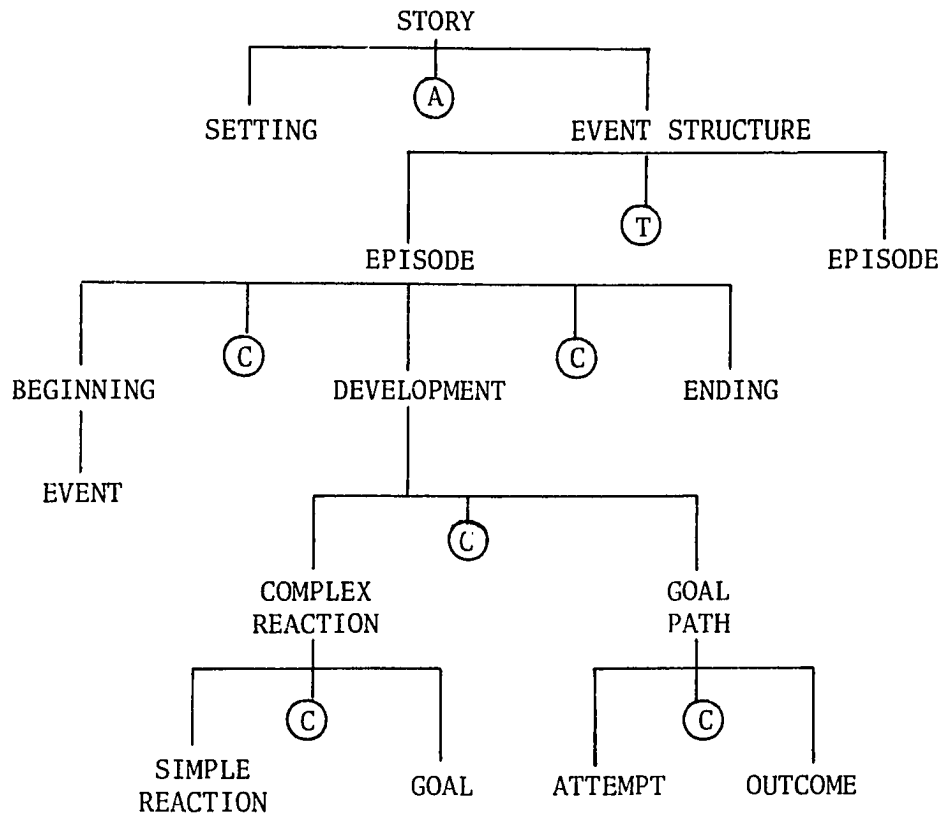
Rumelhart found that this structure describes a large number of brief stories.

The schema proposed by Thorndyke [1977] is essentially the same. The episodes are preceded by the "theme," which is "the general focus to which the subsequent plot adheres." The event or events leading up to the goal, as well as the goal itself, are treated as subdivisions of the "theme" in Thorndyke's schema. This event or events thus corresponds to Rumelhart's CAUSE, the events causing the protagonist to desire the main goal. The plot of the story consists of a number of episodes, each of which includes an attempt to achieve the goal or a subgoal, which is a method of achieving the main goal, and the outcome of that attempt. The resolution gives "the final result of the story with respect to the theme," and corresponds to Rumelhart's OUTCOME.

Stein and Glenn [1979] propose a slightly more complicated schema based upon a goal-attempt-outcome pattern. An episode is defined as consisting of an initiating event which causes a response in the main character. This response consists of an internal or psychological response, often omitted from narrative texts, which motivates a "plan sequence." The plan sequence is subdivided into an "internal plan," giving either the main character's thoughts, or a subgoal developed to achieve the main goal. The "internal plan" category is often omitted from children's stories, the authors found, because in these stories most characters have just one major goal, and perform only one or two actions to obtain that goal. The next category is the "plan application," which consists of an "attempt," followed by a "resolution" including the "direct consequence" of the "attempt" plus a reaction to that consequence. Stein and Glenn

found that one or two of these categories was usually missing from any one episode. In their analysis, the defining features of an episode are an initiating event or internal response causing a character to formulate a goal-directed behavior sequence; an action, either an attempt or a consequence; and a direct consequence indicating whether the goal has been achieved or not. Thus in their schema, a simple events-reaction pattern with no goal-directed activity would not be considered a well-formed episode.

The schema for episode structure proposed by Mandler and Johnson [1977] is somewhat different. Episodes are divided into a beginning, development and ending. The beginning consists of one or more events which cause the protagonist to respond. This response forms the development of the episode, which is the most elaborated portion. The response may be a "simple reaction" followed by a single action, but is usually a "complex reaction," that is, a simple reaction which leads to a goal. This is then followed by a "goal path" in which there is an attempt to achieve the goal, and an outcome. The "ending" tends to be connected to the development as a whole rather than just the immediately preceding event. It often is "emphatic," wrapping up the story with a dramatic flourish, such as "they lived happily ever after," and may often have the flavor of a moral. The relationships between episodes are categorized as simultaneous (AND), successive (THEN), or causal (C). This structure is outlined in the following tree diagram.



This schema does not emphasize the achievement of goals as much as those proposed by Rumelhart, Thorndyke, and Stein and Glenn, since there is no main goal preceding the episodes. Also, individual episodes need not be goal-oriented, but may consist simply of an event and the protagonist's response to the event, as in Rumelhart's [1975] grammar.

The schema for episodes proposed in Kintsch [1977], van Dijk [1977], [Kintsch et al, 1977], and applied in Baggett [1977], is even more flexible. In this analysis, episodes are composed of an exposition, a complication, and a resolution. The exposition functions, Kintsch states, to set up some kind of frame for the events. The only constraints on the content of the complication section are that it must introduce something interesting or remarkable, and must contain a sequence of propositions which is interpretable as an event description. The resolution must contain events

which are a direct consequence of the complication. The authors note that episodes frequently describe goal attainment, with the exposition presenting a state of affairs in which the hero desires a certain goal, the complication indicating how achievement of that goal is blocked, and the resolution telling how the obstacle is removed. However, the presence of goal-directed behavior is not a criterion for episodes in their model.

Despite the differences in the structural schemas generated by their rules, authors often seem to take the "grammar" metaphor quite literally, and convey the impression that there is a single story schema to which every well-formed narrative must conform. Thorndyke [1977] for example, states that "the requisite components of all stories are Setting, Theme, Plot, and Resolution." Thorndyke found that subjects who read narratives in which the theme was placed immediately after the story setting had significantly better recall than subjects who read the theme only at the end of the entire story. However, despite the apparent importance of the theme, in the specified location, for accurate comprehension and recall of the stories Thorndyke used, this category is not used in other story grammars, such as Mandler and Johnson [1977]. Thus, it appears that the schemas proposed in story grammars do not always reflect general features of narrative structure, but rather the particularities of the story or stories which the investigator used as the basis for his schema. Accordingly, one problem with attempting to apply the story grammars which have been constructed is that they tend to incorporate structural features which do not appear in the story one wishes to investigate.

A normative approach to story structure, in which a single story schema is regarded as the ideal, is particularly problematic in studies

of the acquisition of narratives. For example, in a developmental study of story creation, Stein and Glenn [1977a] assume that the underlying schema for well-formed narratives is event-internal response-attempt-consequence-reaction. Kindergarteners, third, and fifth graders were given some brief setting information, such as "Once there was a boy named Alan who had many different kinds of toys," and were asked to complete the story. In addition to goal-oriented episodes which were analyzed as valid variations on this schema, the children produced descriptive sequences, reactive episodes and abbreviated episodes; these were taken to be immature precursors of the more advanced goal-oriented structures. In reactive episodes, something would happen to the protagonist, who would respond in some overt way. One kindergartener, for example, finished the story in this way: "Then his mother called him. And it was time for him to eat. And he went." In abbreviated episodes, the protagonist has an understood, if not explicitly stated, goal and his behavior is purposive. These episodes consist of either events-consequence or internal response-consequence, with reactions being optional.

There were developmental trends in the frequency with which these structures occurred in the children's narratives. Descriptive sequences were produced by about 31% of the kindergarteners and the first-graders, but only 9% of the fifth-graders, who usually used descriptive sequences only as settings for other episode types. Reactive episodes were produced by less than 10% of the two younger groups, but more than half of the 12.5% reactive episodes produced by fifth-graders were in stories including other episode types as well. The frequency of goal-oriented episodes increased from 53% of the stories told by kindergarteners to 66%

of the first-graders' stories, and 78% of the fifth-graders' stories. Thus narratives composed entirely of descriptive or reactive episodes decreased, and goal-directed episodes increased across the age range; Stein and Glenn concluded that "children's stories become logically more complex with age."

Although goal-oriented schemas may describe the structure of many stories, it is not obvious that this is the only pattern which can serve as the basis of a mature, well-formed narrative. The reactive episodes which Stein and Glenn cite clearly would not be considered good stories by adults. However, this is probably because the types of events which the children selected for the protagonist to respond to were uninteresting from an adult point of view, and not simply because the protagonist did not have a goal. Children are probably exposed to at least some stories featuring primarily reactive episodes. As the recent wave of "disaster movies" illustrates, the events-reaction schema can serve as the basis of a story if the event is unusual and frightening, such as an earthquake, fire or avalanche.

Furthermore, as will be seen in Chapter 4 of this dissertation, many episode structures even in adult stories are simpler than the "abbreviated" episodes in Stein and Glenn's sample, consisting of schemas such as setting-reaction or setting-events. Movies and television shows, which tend to feature many different scenes, and depict particular events at least partly for their visual effect, may be more likely to include various types of "incomplete" episode structures, which nevertheless together constitute a complete, well-formed story. Further investigation of the structure of individual scenes and combinations of scenes in these

programs would contribute to our understanding of children's developing knowledge of episode structure. At the current stage of research on narrative structure, it seems premature to categorize reactive or abbreviated episodes as ill-formed or developmentally backward. In other story grammars, such as Rumelhart [1975], the simple events-reaction schema is advanced as a model for well-formed episodes.

Similarly, in analyzing the structure of episodes, researchers who have taken the schemas generated by story grammars as accurate representations of adult rules tend to be overly strict in their interpretation of the fit between particular stories and general schemas, and to view minor departures from the schema as errors. One problem is that intuitions about the structure of stories seem to be less reliable than grammaticality judgments about the sentence level. Again, this normative approach is especially problematic in interpreting the results of developmental studies.

For example, Stein and Glenn [1979] presented four stories to 48 children in the first and fifth grades and asked the children to recall the stories after a brief counting task. One of the stories used was a version of the classical folktale "Epaminondas," which included the following four lines:

One day his mother told him to take some cake to his grandmother.
She warned him to hold it carefully
so it wouldn't break into crumbs.
The little boy put the cake in a leaf under his arm,

In Stein and Glenn's analysis, the first three lines are categorized as "initiating events," and the fourth line as part of an "attempt."

In recalling this story, a number of children changed the order of the lines as follows:

The mother told him to take some cake to his grandmother.
He put the cake in a leaf under his arm.
Then she warned him to hold it carefully.

This was counted as an "intercategory error," since part of the attempt is inserted between two initiating events. However, the information that the boy put the leaf under his arm, in the position where it occurs, is actually structurally ambiguous with respect to the schema which Stein and Glenn are using; it can be construed either as the initiating event in the action sequence in which the boy attempts to take the cake to his grandmother, or as one of several initiating events preceding the action sequence. Stein and Glenn, perhaps influenced by the sentence boundaries in the original story, chose the former interpretation; the children's reversal of the order of events suggests that they chose the latter. Since neither interpretation is incorrect or changes the structure of the story, it hardly seems appropriate to describe this modification as an error. In fact, the children who changed the order of events in this way have merely re-categorized this particular piece of information in a way entirely consistent with the schema which Stein and Glenn propose.

As these examples show, analyzing narratives in terms of "well-formedness," "schema violation" and other evaluative notions based on story grammars can be misleading, especially in developmental research. One way to avoid this problem in developmental studies is to perform all experiments on adults as well as on children. This will prevent the researcher from interpreting valid variations of schemas as inadequacies resulting from incomplete acquisition or undeveloped memory. Given the limited amount of research on narrative structure which has been performed, the stories which children produce should be analyzed in comparison with

actual examples of adult performance, and not just in relation to an abstract model of adult competence which has not been extensively tested against the great variety of different types of stories which people produce, listen to, and see.

From the standpoint of language acquisition, it is important to consider the models for narrative structure to which the modern child is actually exposed. As Winograd [1977] points out, at this time in our culture each person knows a large number of schemas for different kinds of stories, such as mysteries, fairy tales, television detective shows, etc. In acquisition studies it may be a mistake to accord a special status to the kind of simplified folktale structure which has often been used in developmental research, since such stories may actually represent a rather infrequent source of input to the child. Clearly, written stories and the plots of films and television programs are not subject to the same limitations as oral narratives told in pre-literate cultures; modern stories may be longer and show a wider range of different structures, which children can hear and read in books, and see on television and in movies. The modern definition of a story has been greatly expanded, and much more research is necessary to determine what are the adult models for the acquisition of narratives. If adults know a number of different schemas for stories, developmental research can focus on how each of these is acquired, and on the child's growing ability to use them appropriately in different contexts. It seems likely that further research will lead to the discovery of a wide range of typical story types; therefore, cognitive status as the "ideal" should not be ascribed to one at the expense of the others at this stage.

Not only do current story grammars generate rather different sets of categories, but the organization of these categories into superordinate units also tends to vary. One major difference between Propp's original "scheme" for the structure of folktales and more recently proposed schemas is that story grammars generate a hierarchical, rather than linear, organization of story units. The phrase-structure rules of the grammar rewrite superordinate categories as combinations of smaller units, and this constituent structure is illustrated in hierarchical tree diagrams. Rumelhart [1975] and subsequent researchers have believed that in this respect their grammars represented an advance over Propp's theory. Yet there seems to be no general consensus as to the proper organization of constituent structures and no objective method of justifying the hierarchies proposed.

For example, authors differ in their placement of resolutions and formal closings. Thorndyke [1977] places the resolution section at the highest level under "story," along with "setting," "theme," and "plot." Mandler and Johnson [1977] have placed the category "outcome," which corresponds to Thorndyke's "resolution," down five levels in their tree structure, beneath "event structure," "episode," "development," and "goal path." Mandler and Johnson also include a category "ending" which covers the moral or dramatic flourish wrapping up the story; this category is embedded down three levels under "event structure" and "episode." Thus in the schema of Mandler and Johnson, both "resolution" and "ending" are subdivisions of the final episode of the story; in Thorndyke's schema "resolution" is outside the episodic "plot" at a higher hierarchical level. The authors do not present justification for the particular hierarchical

position which they select for these categories, yet the structure of story "trees" is intended to be in some sense isomorphic with the organization of the underlying cognitive structures which they are intended to represent.

If psychological reality is attributed to hierarchical representations of story structure, it becomes important to understand how the proposed hierarchies were constructed and how the propositions which make up any given story are assigned to narrative categories within the hierarchies. An examination of the way particular texts are analyzed suggests that the narrative categories in schemas were originally abstracted on the basis of story content and that the structural hierarchy of categories was based on the authors' intuitions about how the categories are related. The most objective evidence in written texts for the relationships among propositions, and hence among story categories, is linguistic: for example, the syntactic embedding of one proposition within another, the use of subordinate and coordinate conjunctions between propositions, and sentence boundaries. However, it often seems that the relationships between categories specified by story grammars do not correspond to the relationships between propositions which appear in the particular texts chosen to illustrate a schema.

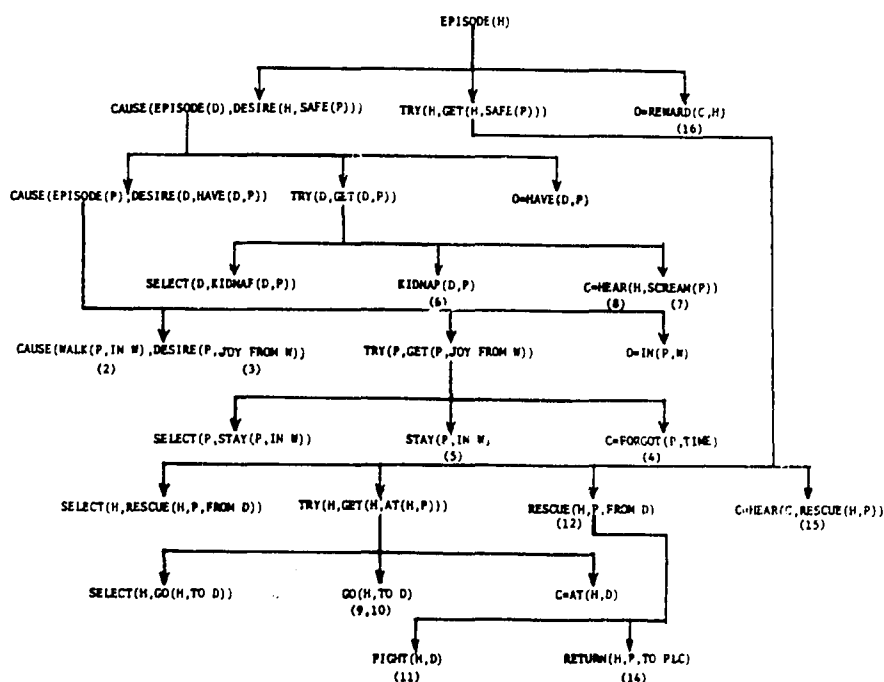
For example, Rumelhart [1977] analyzes the structure of the following brief tale:

"The Czar and His Three Daughters"

- (1) There was once a Czar who had three lovely daughters.
- (2) One day, the three daughters went walking in the woods.
- (3) They were enjoying themselves so much that (4) they

forgot the time (5) and stayed too long. (6) A dragon kidnapped the three daughters. (7) As they were being dragged off, they called for help. (8) Three heroes heard the cries (9) and set off to rescue the daughters. (10) The heroes came and (11) fought the dragon. (12) They defeated the dragon and (13) rescued the maidens. (14) The heroes then returned the daughters safely to their palace. (15) When the Czar heard of the rescue, (16) he rewarded the heroes handsomely.

A tree diagram is given to represent the structural schema underlying this tale.



H = THREE HEROES
P = CZAR'S THREE DAUGHTERS
W = WOODS
D = DRAGON
C = CZAR
PLC = PALACE

Although the schema categories which Rumelhart uses seem appropriate for this story, the fit between individual propositions and the schema is not always unambiguous, and many of the structural boundaries in Rumelhart's analysis seem to be contradicted by linguistic evidence. Thus the second and third propositions are more closely united, and share a different hierarchical level from the third and fourth propositions, despite the syntactic connection between the latter two and the sentence boundary between the former two propositions. Although the seventh and eighth propositions are analyzed as the "consequence" of one "try" (the kidnap), and the ninth proposition as part of the next "try" (the rescue), the sentence structure seems to indicate a boundary between the sixth and seventh propositions rather than between the eighth and ninth propositions. The structural ambiguity of the seventh and eighth propositions is striking; they represent both a consequence of the kidnapping, since this is why the daughters called for help, and the cause of the rescue, since hearing their screams motivated the heroes to save them. Rumelhart has chunked these propositions with the kidnap, whereas the author's use of linguistic devices suggests that he chunked proposition (8) with the rescue. Similarly, Rumelhart analyzes proposition (15), "when the czar heard of the rescue," as the "consequence" of the rescue, and the final proposition as the "outcome" of the story as a whole. However, although this analysis places the propositions on different hierarchical levels, the linguistic features of the story fail to indicate any major division between the last two propositions of the story. In fact, by virtue of the conjunction "when," these are two of the most closely united propositions in the story.

It is clear that this kind of analysis ignores linguistic signs of relatedness such as subordinating conjunctions or embeddings, and linguistic evidence for separation such as sentence boundaries. Apparently, the structural category of any piece of information in the story is determined on the basis of content alone, and the structural organization of the story is assumed to correspond to the a priori hierarchy incorporated in the schema. Of course, the story schemas which have been proposed are not intended to represent the linguistic structure of particular stories, but rather the underlying cognitive structure common to all stories. Although it seems reasonable to determine the category membership of a particular piece of information primarily on the basis of content, it does not seem equally appropriate to assume that category membership invariably dictates the same place in an elaborate hierarchy, especially when the postulated relationships among categories are not supported by the linguistic evidence for structural relationships.

The discrepancy between the surface linguistic features in a story and the proposed underlying cognitive structures might be interpreted as reflecting a distinction between "deep" and "surface" structure. Authors working within the framework of story grammars sometimes note that a narrative may deviate from the proposed schemas in various ways without necessarily being ill-formed. Mandler and Johnson [1977], for example, have suggested that an analysis of story structure in terms of schema theory requires some account of how the underlying, ideal structure represented by the schema is related to actual surface realizations. They point out that stories often lack certain categories in the schema, or present information in a different position from the schema, and they

suggest that there are "transformational rules" by which certain nodes of the tree structure may be deleted or re-ordered. However, as the preceding discussion of Rumelhart's example has shown, even when no deletions or permutations of basic nodes take place, the linguistic structure of a story may suggest that the relationship between nodes is different from that in the proposed schema. Thus what seems to be required is some account of how the narrative categories are expressed by means of linguistic devices which can re-organize the relationships among categories, relating them more or less closely on the surface than they are in the underlying schema. If speakers are free to perform this kind of structural realignment of categories in producing stories, then it seems unlikely that a single multi-level hierarchy with fixed relationships among units serves as the basis for people's construction of a good story.

If an a priori assignment of story categories to positions in a hierarchy is rejected, it might nevertheless seem that valid general hierarchies could be constructed by examining the linguistic evidence for relationships among propositions in a wide range of narratives. However, this approach raises numerous problems, such as which linguistic devices should be taken into account, what "weight" should be assigned to different indicators of relatedness between ideas, and which linguistic units should be taken as basic structures whose interrelationships will reveal underlying cognitive hierarchical structures. Even assuming that the smallest unit is the proposition, as do story grammars, it is extremely difficult to formulate a single hierarchical tree structure, which is well motivated and acceptable to more than one or two other researchers, to represent the relationships among propositions suggested by surface linguistic

features of even one story. Chafe [1979] has found that there are four linguistic units which emerge rather clearly from the spontaneous speech in his collection of narratives: stories, episodes, sentences, and clauses (or phrases). However, he explicitly rejects the view that these units should be interpreted as representing a discrete hierarchical organization in speakers' minds. The linguistic evidence suggests instead overlapping units and varying degrees of boundaries, rather than unambiguous divisions and distinct structural levels. The four structural units identified by Chafe are cross-cut by a variety of linguistic features which create greater degrees of unity between sub-parts of these units and even across unit boundaries. For example, Chafe found that there was linguistic evidence for structures intermediate between the clause and sentence levels. Sometimes within a sentence speakers shifted from description of a repeated action to particular single actions, as indicated by an aspectual shift from the progressive to the simple present; the clauses sharing the same aspect can be regarded as a "cluster" or minor unit within that sentence. Similarly, in English, subject ellipsis can function to unify a sequence of events within part of a sentence, and can even occasionally operate across sentence boundaries to create a sense of unity, despite the sentence-final intonation and pause which may separate the two sentences. Even episode boundaries can be obscured or emphasized depending upon factors such as the speaker's use of connectives and intonation. In both English and Japanese, a switch from elliptical or pronominal to nominal reference for a particular character in a story can serve to emphasize a minor episode-internal boundary, such as that between "setting" and "events"; on the other hand,

maintaining elliptical reference across an episode boundary can minimize the importance of that boundary [Clancy, 1980].

Thus researchers working from large samples of oral narratives and taking linguistic evidence into consideration in analyzing story structure do not usually propose discrete, hierarchical models of story structure. In *The Thread of Discourse* [1975], for example, Grimes has suggested that narrative texts are composed of "spans," which are "stretches of text within which there is some kind of uniformity." He discusses different types of uniformity which have proved useful for analyzing discourse structure in several languages, including: settings, events, identification, explanations, evaluations, collateral information, and performatives. Evaluatives and collateral information are categories which describe phenomena that Labov has analyzed. Evaluations refer to the feelings, opinions, and reactions of the narrator or story characters; Grimes uses the term "collateral information" to cover information that relates non-events to events, telling what did not happen, giving a range of non-events that might take place, and through negation, adversatives, questions and predictions heightening the significance of the events which did take place. Performatives include the "situational factors" relating to the speaker, hearer, and the time and place at which the narrative is being produced. To analyze the "spans" within a text, these types of information are mapped onto a chart beside the clauses of the text, with vertical lines representing the stretches of text in which there is coherence within a certain domain. Thus one vertical line might indicate all the actions that take place in a single setting, another all the actions in a single time sequence, etc. Changes in these dimensions can

be used as "partitioning principles," Grimes suggests, in analyzing the structure of a text. These spans need not parallel one another, and depending upon the coincidence of "partitioning principles," the boundaries of spans may occur at the same place within a text, or create a variety of partially overlapping units.

In keeping with the results of this type of analysis, Winograd [1977] has claimed that for all but the simplest narratives, it is not true that there is a single tree structure which appropriately partitions the sequence of sentences into constituents. He states that any piece of narrative text is the product of several interacting structures, some dealing with time, some with the explanation of causality, and others with the conventions for telling certain kinds of stories. The interwoven themes and changes of scene within a story, Winograd concludes, create a much more complex structure than can be handled with a simple notion of constituency.

If linguistic analysis of the relationships among propositions does not reveal several distinct hierarchical levels in story schemas, then non-linguistic evidence is needed to support the claim that hierarchical schemes represent psychologically real cognitive structures. The main evidence which has been advanced is based on the assumption that level in the hierarchy reflects the importance of a given proposition to the story as a whole. Degree of importance to the story, in turn, is reflected in subjects' recall, which should be better for more important information, and in their summaries, which should include the more important information and omit details. Rumelhart [1977] claims that the hierarchical organization which he proposes "gives us a distinction between the important parts of a story

and the details of the story. In general, the higher the information in the structure diagram, the more central to the story, and the lower the information, the more peripheral."

Rumelhart proposes that subjects make summaries of a story by selecting a certain level in the hierarchy at which to write the summary, and "trimming" the tree to remove the nodes below the chosen level. Evidence for this proposal comes from an experiment in which ten subjects wrote summaries of a set of brief stories. The summaries which the subjects produced tended to include information from the upper levels of the hierarchical structure postulated for each story. For example, "level 1" summaries of *The Czar and His Daughters* would be expected to include statements summarizing the three highest nodes under EPISODE, namely, CAUSE, TRY, and OUTCOME. According to the rules which Rumelhart proposes for summarizing these categories, a "level 1" summary of the story would be:

A dragon kidnapped three daughters of a Czar. (CAUSE)
Three heroes rescued them from the dragon. (TRY)
As a result, the heroes were rewarded by the Czar. (OUTCOME)

Although the subjects chose different levels for their summaries, that is, included differing amounts of detail, an average of 91% of the statements which would be expected to occur in "level 1" summaries actually occurred in their summaries. Thus nearly every summary included the statements from the highest nodes of the tree. Rumelhart suggests that the notion of "gist" can be objectively characterized in terms of the hierarchical levels in the structure of a story.

Similar findings were also made by Thorndyke [1977] with different

stories and a larger sample of subjects. In Thorndyke's experiment, 64 undergraduates heard or read two passages and produced written recalls as well as summaries. The summaries, they were told, should include "the high points or important parts" of the passages. Thorndyke found that "the hierarchical relationships among propositions resulting from the structural analysis of plot were a strong determinant of recall"; subjects recalled 88% of the statements from the highest level of one story and 94% of the top-level statements from the other. Furthermore, if a subject recalled a particular proposition from the story, the probability that he would include it in his summary depended upon the hierarchical level of that proposition; this probability was about 44% and 60% for the top-level propositions of the two stories, respectively. Propositions recalled from lower hierarchical levels were much less likely to be included in the summaries.

Thus psychological evidence for the postulation of hierarchical structures underlying stories can apparently be found in the results of recall and summarization tasks, which seem to indicate that information occurring at different levels of the hierarchy has different degrees of importance to the plot of a story. However, if the results of these experiments are to be interpreted as independent verification of the psychological reality of hierarchical levels, then it is important that the structural analysis of particular stories be performed in an objective, consistent fashion. Thorndyke's findings have been taken as strong evidence for the existence of hierarchical story schemas, and so his analysis of *Circle Island*, one of the stories used in his experiments, can serve as an illustration of this approach. The text and tree diagram

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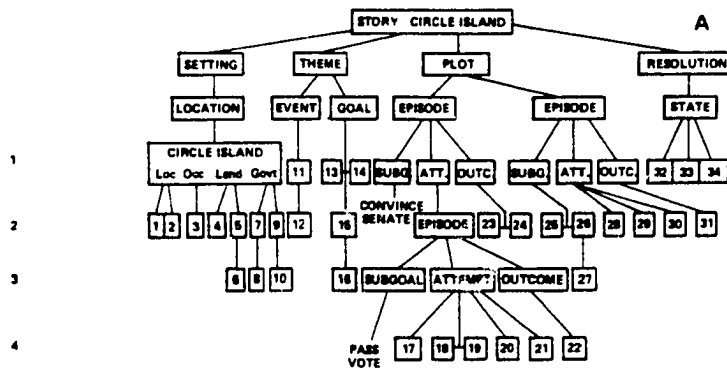
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which Thorndyke uses to represent the structure of the story are given below:

"Circle Island"

(1) Circle Island is located in the middle of the Atlantic Ocean, (2) north of Ronald Island. (3) The main occupations on the island are farming and ranching. (4) Circle Island has good soil, (5) but few rivers and (6) hence a shortage of water. (7) The island is run democratically. (8) All issues are decided by a majority vote of the islanders. (9) The governing body is a senate, (10) whose job is to carry out the will of the majority. (11) Recently, an island scientist discovered a cheap method (12) of converting salt water into fresh water. (13) As a result, the island farmers wanted (14) to build a canal across the island, (15) so that they could use water from the canal (16) to cultivate the island's central region. (17) Therefore, the farmers formed a pro-canal association (18) and persuaded a few senators (19) to join. (20) The pro-canal association brought the construction idea to a vote. (21) All the islanders voted. (22) The majority voted in favor of construction. (23) The senate, however, decided that (24) the farmer's proposed canal was ecologically unsound. (25) The senators agreed (26) to build a smaller canal (27) that was two feet wide and one foot deep. (28) After starting construction on the smaller canal, (29) the islanders discovered that (30) no water would flow into it. (31) Thus the project was abandoned. (32) The farmers

were angry (33) because of the failure of the canal project.
 (34) Civil War appeared inevitable.



Clearly, the hierarchical level of any given proposition will depend upon the number of superordinate category labels which occur in the schema between the highest node "story" and the category to which that proposition is assigned. Therefore, Thorndyke's inclusion of the label "plot" as a higher order category subsuming the sequence of episodes lowers the propositions under "attempt" and "outcome"; as a result, propositions (23)-(24) are more deeply embedded than propositions (13)-(14), which represent the "goal." Similarly, if the category "theme" were not subdivided into "event" and "goal," propositions (11), (13) and (14) would be two levels higher than any of the propositions within the episodes. If "theme" were not subdivided and the label "plot" were eliminated, these changes together would place the motivating theme for the story, contained in propositions (13) and (14), on the same level as certain subgoals, attempts, and outcomes.

Furthermore, the category labels generated by the rules of Thorndyke's story grammar are not applied consistently. In the rules which Thorndyke presents, both "theme" and "outcome" are rewritten as "event." However, in the tree diagram, propositions (11)-(12), "recently an island scientist discovered a cheap method of converting salt water into fresh water," are embedded under the category "event," but propositions (29)-(30), "the islanders discovered that no water would flow into it," are not. If the label were omitted in both cases, proposition (11) would occur at a higher level than any other proposition in the story, and the same level as the category "episode." Since Thorndyke does not justify the number of category labels he uses, or the way these are applied, his hierarchical analysis of propositions often seems arbitrary.

Finally, although the experimental results suggest that hierarchical level is correlated with importance, an examination of the content of the propositions at any one level in the hierarchy reveals that their importance to the plot differs considerably. For example, the details of the location of Circle Island occur at the same level of the hierarchy as the description of the government, which is obviously more important to the plot since politics are discussed later in the story. Both the location and government of the island occur at the same level as propositions (5) and (6), which specify the basic problem, a water shortage, underlying the entire story of the islanders' attempts to get water for cultivation. Thus the propositions at any given level of the hierarchy do not necessarily share the same degree of importance, nor is an obviously important proposition necessarily located at a higher level of the tree diagram than less important information.

The idea that there is a relationship between importance and levels of a structural hierarchy implies a discrete, quantifiable approach to the concept of importance which may not be appropriate. There is even some experimental evidence that when subjects judge the importance of propositions in a story, the results approach a continuum, rather than a set of discrete levels of importance. In a number of different experiments, Johnson [1970] had subjects eliminate $1/4$, $1/2$, or $3/4$ of the units in narrative texts, which had been subdivided into a number of units roughly equivalent to the number of clauses or propositions in the story. Subjects were told "that the linguistic phrases differed in their structural importance to the whole story, and that some phrases could be eliminated without destroying the essence of the story." The number of times that each unit was retained in the story was taken as a measure of the structural importance of the linguistic unit. In deciding the structural importance of a given unit, Johnson did not consider which other units are also retained, although the structural importance of any one piece of information probably depends upon the other information kept in the story. One story consisted of 66 units, and the author rank-ordered them according to their judged importance, or frequency of retention, and then formed six "levels" of structural importance, ranging from the lowest 11 units to the highest 11 units. However, in Johnson's experiments, it appears that the particular number of levels chosen was arbitrary and that the actual measure of importance may have yielded a continuous scale along which each unit could be placed, depending upon the frequency with which it was retained, i.e., judged to be essential to the story.

In further experiments, Johnson found that the judged importance

of propositions was correlated with the frequency with which subjects recalled them; the mean correlations between importance and recall for the three stories were .63, .50, and .60, respectively. There were statistically significant differences between the mean frequency of recall for some of the levels of importance, but the mean importance of propositions at the same level was different for the two stories having four levels, and the difference between levels of importance within the same story were not always significant. Therefore, it seems likely that there was also a continuum of recall frequencies for the propositions of each story, and the recall of any two propositions in adjacent levels may have been more similar than the mean recalls which Johnson compared. Although the data are summarized and analyzed in terms of levels, it is again not clear whether there was any evidence for discrete levels of recall frequency.

Furthermore, although Johnson interpreted his findings in terms of "linguistic structure" and "structural importance," his subjects' judgments may not have had anything to do with structure. Only one set of instructions, telling the subjects to make their decisions on the basis of "structural importance" was given, so there is no way of knowing what, if anything, the word "structural" added to the subjects' concept of importance. In fact, it seems unlikely that subjects were basing their decisions primarily upon structural factors. Baggett [1977] performed a similar experiment in which subjects selected the most important information from a story text; no mention was made of structure, but the selection still yielded a correlation between importance and recall.

Clearly, there is a strong relationship between the subjectively

judged importance of a given piece of information from a story and the probability that it will be recalled and included in summaries of stories. However, it has not yet been established that there is an independent method of structural analysis which will yield precisely those higher-order units which constitute the most important information in a story, and so it seems premature to assume that the importance of a proposition derives from the level of a hierarchy to which it is assigned. In any story, it is clear that there are certain pieces of information which are more important than others. In Rumelhart's version of *The Czar and His Three Daughters*, for example, propositions (6) and (13), which tell that a dragon kidnapped the czar's daughters and that three heroes rescued them, seem to be the most important two propositions. In the stories which will be analyzed in this dissertation, certain pieces of information were almost invariably mentioned by the adult narrators, and were very frequently mentioned by the children as well, although there were considerable structural differences among the narratives even within a single age group. The subjects seemed to be selecting important information by identifying certain situations and events as problems and others as resolutions. The problem-resolution schema for content selection which apparently motivated these choices was not obviously dependent upon structural features of the story. It is worth noting that this schema would also identify the two most important propositions in *The Czar and His Three Daughters*, namely, the kidnap and the rescue, regardless of their position in a hierarchical analysis. Much further research is needed to discover objective ways of analyzing narrative structure, of measuring importance, and of analyzing the relationship between the two.

At this point it seems possible that the importance of particular pieces of information to a story may be based primarily upon their content, and speakers' knowledge of the types of content which are usually important to stories, rather than upon their position within the structure of the story.

The Functions of Story Schemas

Although the body of rules in a story grammar is taken as a representation of adults' knowledge of the structure of stories, authors working within the framework of schema theory do not regard the schemas generated by the rules of story grammars simply as neutral models of narrative competence. Instead, in keeping with Bartlett's theory, they have sought to demonstrate that this knowledge has important psychological functions in the comprehension, recall, and production of narratives. Researchers have investigated the role of story schemas in the performance of a variety of experimental tasks, and the results of these studies have been taken as evidence for the psychological reality of the proposed mental constructs. Following Bartlett, the emphasis has been on the assimilative function of schemas; accurate comprehension and recall are taken as evidence that the schema of a text matches a subject's cognitive schema, while modifications in the original are interpreted as attempts to make a story conform more closely to the ideal schema.

Rumelhart [1977] presents a strong version of the assimilative approach when he states that "the process of comprehension is taken to be identical to the process of selecting and verifying conceptual schemata to account for the situation (or text) to be understood." Schemas may

differ in the degree of detail with which they account for a situation, and a set of interrelated schemas rather than a single schema is usually required. Rumelhart states that "the fundamental assumption of schema theory is that situations can be understood only in terms of the schemata available to the comprehender." This degree of emphasis on the assimilative functions of schemas, in which new situations are understood by assimilating them to pre-existing schemas, seems extreme; it is difficult to imagine in this framework how children can acquire adult schemas or how adults can accommodate existing schemas to unfamiliar situations and texts.

Usually a facilitative rather than determining role is postulated for story schemas and the mental representation of story structure is said to guide the comprehension of texts by providing a template or outline of a typical story; to the extent that the story being read fits this pattern, understanding will be facilitated. Thus the constituents of the story schema, such as "setting," serve as "slots" which the reader fills during comprehension of a story by substituting real properties of the story for the prototypical ones provided by the schema [Thorndyke, 1977]. This enhances comprehension by helping the listener keep track of what has gone before, increasing the predictability of what will immediately follow, and by telling the listener when some part of the story is complete and can be stored, or is incomplete and must be held until more material has been encoded [Mandler and Johnson, 1977]. Most authors allow for the possibility that stories which do not fit conventional schemas can still be understood. Kintsch [1977], for example, claims that every reader tries to impose an exposition-complication-resolution structure upon a story, but if this fails he can still divide the story into units in a more arbitrary, less predictable way.

The assimilative role of narrative schemas in comprehension has been analyzed in experiments in which subjects are asked to judge, summarize, or reproduce stories which are constructed according to unfamiliar schemas, or which have been distorted so that they violate the hypothetical ideal schema in various ways. For example, Kintsch [1977] examined subjects' intuitions about the comprehensibility of stories reflecting familiar and unfamiliar organizational schemas. He presented American college students with four stories from Bocaccio's *Decameron* having conventional exposition-complication-resolution structures, and four stories of equal length from a collection of Alaskan Indian myths. The myths consisted of a sequence of episodes held together by the "principle of fours": there must be four episodes, four actors, using four instruments, etc. The stories from the *Decameron* were rated more comprehensible than the Indian stories, and summaries of the *Decameron* stories were ranked as more informative, i.e., telling more about the original story than summaries of the Indian myths. Kintsch concluded that "subjects' story comprehension depends in important ways upon the availability of a schema to organize the story."

In another experiment, Kintsch et al. [1977] had subjects summarize stories in which the original order of paragraphs had been either preserved or scrambled. Subjects took longer to read the scrambled version of the story, but judges were unable to distinguish between summaries based on the normal and scrambled versions of one story, even when reading time was restricted. The authors concluded that the subjects' story schema allowed them to reorganize the scrambled story; since subjects took longer to read but not to summarize the scrambled story they also

concluded that reorganization in accordance with the schema takes place at the point of comprehension.

Scrambled stories have also been used in developmental studies. For example, Stein and Glenn [1978] compared children's recall of stories conforming to the schema "initiating event-internal response-attempt-consequence-reaction" with their recall of stories in which the position of the initiating events, internal response, or consequence categories had been changed. In the stories created by manipulating the order of categories, the initiating events might occur, for example, after the internal response, the attempt, or the consequence. None of these inversions were marked by temporal adverbs or other linguistic indications that the order of events presented in the story was other than the "real" sequence. The authors found that the children almost always reorganized the story in recall and produced a narrative conforming more closely to the original schema than to the permuted order which they had actually heard. The amount of accurate information recalled by children who heard the permuted stories was significantly inferior to the recall of children who received the stories consistent with the proposed schema.

In these experiments using permuted structures, the authors interpret their findings as evidence that a narrative schema was used to reorganize the scrambled stories, and interpret the superior performance with stories conforming to the proposed schema as evidence for the facilitative role of that schema in comprehending and recalling stories. However, it is not really clear that the notion of a schema for stories is necessary to account for these findings. In many cases the order of categories in a proposed narrative schema follows the sequence in which

events typically occur in the real world. Thus the formation of a goal precedes an attempt to attain the goal and a reaction follows the events to which one is responding. The permutations of order in experiments on story structure often violate not only the proposed narrative schema, but also the normal laws of physical and psychological causality. In the experiment of Kintsch et al. [1977] on scrambled versions of passages from the *Decameron*, for example, Simona could hardly be accused of poisoning Pasquino before he dies from rubbing his teeth with a sage leaf, and in Stein and Glenn's [1978] experiment, the initiating events of a goal-directed sequence of action could hardly precede the consequence. Therefore, it seems that this kind of experiment may not actually tap subjects' knowledge of conventional patterns for the organization of narratives, but rather presents them with a puzzle to be solved on the basis of much more general knowledge about cause-effect relations and possible events sequences in the real world. Since the narrative schemas which have been proposed are more specific than the kinds of knowledge which probably underlie people's ability to unscramble information, experiments using scrambled stories may shed light on story schemas only insofar as these schemas incorporate more general systems of knowledge. At this point further research is needed to clarify the relationship between the narrative schemas and schemas for typical temporal and causal relations between events, and to discover what features or constraints serve to differentiate the schemas specific to narratives.

The theory of recall presented within the framework of story grammars follows Bartlett in emphasizing the assimilation of remembered material to schemas during recall. Thus recall is seen as a reconstructive

process, in which the narrator tries to put together the original story on the basis of his knowledge of how stories are usually constructed. Rumelhart [1977], for example, states that "the process of recall consists in locating, in memory, the stored traces and then, by use of the available schemata, attempting to reconstruct the original interpretation, and from there the original story." He gives the example of a story which fits, and is comprehended in terms of, the "problem-solving episode"; in this case "recall consists simply of piecing the main body of fragments into the various slots of the problem-solving schema." Authors agree that if a story does not fit the schema used at the time of recall, additions, deletions and modifications will occur. This suggests a general picture of recall in which the speaker has in mind a typical or ideal structural outline for stories, and searches his memory for information from the story he wishes to recall which can fill the categories in the schema. The implications of this approach are that if information from the original story was not encoded in terms of the schema used at the time of recall, it will not be retrieved; if no information can be found to fill a category, it will be inferred where possible or else simply invented; and if information from a particular category was present in the story, but at a different location, it will be retrieved at the point where that category occurs in the schema being used for recall.

This view of recall implies that information is chunked into units during comprehension and that at the time of retrieval the information in each unit is accessed by calling to mind the entire chunk. Discussing the structure of episodes in memory, Schank [1975] makes this view explicit

when he states that "any sequence of new information forms an episode in memory and any piece of information within an episode can be accessed only by referencing the episode in which it occurs." Here Schank is identifying "episode" with an entire story, but a schema-based theory of story recall carries the implication that units as small as the categories generated by the phrase structure rules of a story grammar are stored and accessed as individual units. For example, Kintsch [1977] describes how people segment a story into schema categories such as "exposition"; linguistic and content cues, he proposes, are used by the reader during comprehension to decide when "he has arrived at a point in the story such that the preceding material should be subsumed ... under one story category while the following material should be assigned to the next category." Mandler and Johnson [1977] also state that during comprehension the story schema tells the listener when a story part is complete and can be stored. Recall will, therefore, be most accurate when a story fits the ideal story schema, and can be encoded, stored, and retrieved in terms of that same schema, since the units created during comprehension will match the categories which the narrator is attempting to fill at recall.

There is a variety of experimental evidence which has been cited in support of a schema-based recall process. Perhaps the clearest evidence for the use of story schemas in recall is to be found in the addition of material which fits a structural slot in the schema but did not occur in the original story. Bartlett found additions of material which fit subjects' personal interests, social background, and knowledge of typical connections between events in stories. With respect to narrative structure, Stein and Glenn [1977b] have also found experimental evidence for assimila-

tive recall. Second- and sixth-graders recalled stories from which different categories generated by Stein and Glenn's story grammar had been deleted. When initiating events, attempts, and consequences were missing in a story, the number of new statements included in recall significantly increased in comparison to a control group. Furthermore, most of the new information which was added matched the type of information that had been deleted from the story. Mandler and Johnson [1977] made similar findings in an experiment with first- and fourth-graders; of the new material which was added to stories in recall 28% "filled missing nodes or supplied the structural requirements of nodes whose correct content was not retrieved."

Many experiments have interpreted text re-orderings as evidence for the functioning of story schemas during recall. Although experiments using randomly scrambled stories are probably too artificial to provide much insight into ordinary recall processes, other findings do seem to indicate that people will re-order stories during recall to fit common schemas for presenting information. Thorndyke [1977] found that when subjects were given stories in which the theme was presented at the end, which could be taken as representing a type of "mystery + solution" schema, 75% placed the theme at the beginning of the story in their recall protocols. Similarly, Stein and Nezworski [1978] created "slightly disordered" stories by moving consequence statements to the position immediately following the initiating events, which could be interpreted as a "flashback" schema. When asked to retell "a good story," subjects presented the consequence statements at the end, eliminating the somewhat unusual flashback mode of presentation. These findings suggest, as

Mandler and Johnson [1977] have pointed out, that the schema used for processing input need not be the same as the one used for retrieval. In this view, information which has been understood from a story is available in memory and can be accessed by category even if the order of categories differs from the originally perceived sequence of categories.

The omission, or failure to recall, information which does not fit the schema being used for recall has been documented in many experiments. Re-analyzing Bartlett's recall protocols, Mandler and Johnson found that propositions in "unstructured event sequences" were often omitted. Thorndyke [1977] found that significantly more propositions were recalled from the original version of the stories used in his experiments than from a "description" version which eliminated temporal and causal connections among propositions. Significantly more information is recalled from stories which fit the proposed schemas than from those having any order permutations [Thorndyke, 1977; Stein and Nezworski, 1978]. In keeping with Bartlett's approach, omissions may be taken as an indication of "rationalization," or making the story conform more to a schema familiar to the subject. The information loss could occur either at the point of comprehension, when the subject fails to understand a particular part of the story or to see how it relates to other parts in terms of a familiar schema, and therefore does not store the information, or at retrieval, when the subject uses a certain schema of narrative categories to search his memory, and does not recall information which was stored in terms of other schemas.

One difficulty in interpreting the modifications which occur in these recall experiments is that verbalization is taken to be the measure

of recall. It seems important to distinguish between recall and verbalization, and to realize that there may be varying degrees of activation of remembered information, not all of which will be selected for explicit mention. For example, Stein and Glenn [1979] found striking differences between what children verbalized when asked to retell a story which they had heard and what they actually could remember about the story when asked questions. In one experiment, first- and fifth-grade children rarely mentioned "internal responses" in their story retellings, but recalled these responses with no difficulty when questioned, and mentioned them very frequently when asked to name the most important thing that happened in the story. Apparently, the children's failure to mention internal responses in their stories did not mean that they did not remember them. They may well have had the internal responses of the story characters in mind during narration, but assumed that mentioning the actions which arose from those feelings adequately conveyed the feelings themselves. Thus children may omit information which adults mention because they are presupposing it, or not paying the same degree of attention to it during verbalization, and not because they have different story schemas. Apparently, remembered information may be actively recalled and selected for verbalization, recalled but left implicit, or passively remembered and brought to awareness only by direct prompting.

Distinguishing among different degrees of memory activation raises the question of voluntary control of the recall process. Bartlett thought that certain types of rationalization, such as symbolic interpretations of unusual events, may at least initially be deliberate, but in general,

he tended to characterize the changes made in recall as "unwitting." However, Gauld and Stephenson [1967] found that subjects were able to judge the accuracy of their recall quite reliably, and were aware when they were adding information which was not in the original story. Therefore, the authors conclude that Bartlett's subjects may have been consciously guessing and inventing material.

Apparently, reordering the sequence of propositions in a story is also to some extent a strategy which can be adopted voluntarily. Stein and Nezworski [1978] found that when subjects were asked to recall a scrambled story in the exact sequence which they had heard, or to reconstruct the perceived order given individual statements on separate pieces of paper, they deliberately attempted to produce random sequences rather than a coherent story. They were aware that the original story was "mixed up," and consciously chose to avoid creating a reasonable order of events, although they were unable to reproduce the random sequence which they had actually heard. Stein and Nezworski conclude that "memory for stories is not a simple process of fitting incoming information into available 'slots' in a schema." In fact, their results suggest that slot-fitting is one recall strategy which can be voluntarily activated by subjects depending upon the task requirements.

Omissions also seem to be under voluntary control to some extent, since people can probably activate plans to recall a story in varying degrees of detail. Van Dijk [1977] discusses this phenomenon in terms of "levels of completeness," which depend, he claims, upon the topic of conversation and on the purposes of the communicative act. Each type of discourse, he states, may have an "upper bound of generalization and

a lower bound of particularization or specialization," given a certain topic of conversation. If, for example, a subject were in a hurry or uncomfortable with the experimental situation, he might choose to recall a story on a very general level, and to omit much of the information which does come to mind during narration.

In experiments conducted within the framework of schema theory, subjects' degree of voluntary control over the recall process is deliberately restricted by giving them instructions which emphasize accuracy. For example, Thorndyke [1977] told subjects to write the passage they had read "as close to verbatim as possible." Mandler and Johnson also emphasized verbatim recall, even in their experiments with children. Stein and Glenn [1979] told the children in their experiment to listen very carefully to the stories they would hear because afterwards they would have to tell the story out loud exactly as they had heard it. Since only one set of instructions was used in each of these studies, it is not clear how instructions stressing accuracy affect children's performance in such recall tasks.

However, Gauld and Stephenson's findings suggest that adults regard story retelling as a very different task from verbatim recall. In his studies of recall, Bartlett did not give his subjects very specific instructions, thinking it best to influence them as little as possible, and he found many examples of constructive recall. Gauld and Stephenson believed that in a story retelling task people "are under strong pressure to produce something completed and coherent," and will therefore readily and consciously change the original story rather than strive for accuracy. To test this hypothesis, they performed story recall experiments with

different types of instructions. In one experiment there were significantly more errors in the stories of subjects who were told to write out the story they had just heard than in the stories of those whose instructions added the single word "accurately." In another experiment, recall was much more accurate when subjects were explicitly instructed not to guess or invent material to make a good story. The authors conclude that the constructive aspects of recall result from conscious attempts to create a good story, rather than upon the nature of recall, and therefore a theory of memory should not be based upon story retelling tasks which do not stress accuracy in the instructions.

If constructive, schema-based recall operates most freely when instructions do not emphasize accuracy, it is paradoxical that recent experiments designed to investigate the psychological functioning of schemas have all used instructions which call for verbatim recall. It also seems inappropriate, in attempting to discover structural schemas which are independent of the content of particular stories, to use instructions which would encourage subjects to concentrate upon the specific details of stories. Apparently, subjects employ different recall strategies depending upon the task requirements; narrative schemas may be used in verbatim recall as well as in retelling a good story, but the differences in accuracy which Gauld and Stephenson found suggest that subjects can voluntarily active "memorization" strategies resulting in greater accuracy. Therefore, it may be misleading to base conclusions about the correctness of proposed schemas or their functioning in ordinary story recall upon the results of verbatim memory tasks.

Summary and Conclusions

An analysis of schema theory, as realized in current story grammars, has raised a number of theoretical and methodological problems. Theoretically, the combination of Chomsky's model of syntactic competence and Bartlett's notion of story schemas provides a somewhat problematic foundation for the study of narratives. Generative grammars were intended to represent an adult's knowledge of syntactic structures, that is, psychologically real grammatical constituents and relationships among constituents, while remaining neutral with respect to the psychological processes involved in the comprehension or production of those syntactic structures. Bartlett did not define the concept of a schema structurally, but did emphasize the psychological functions of schemas in the comprehension and recall of stories. Schema theories of narrative competence have been concerned with both structural and psychological issues; using the model of generative grammar to define story schemas structurally, and using Bartlett's account of assimilative comprehension and recall to describe the psychological functions of schemas. Thus the rules in story grammars have a somewhat ambiguous theoretical status within the generative tradition; they serve as a formal model of structural knowledge and, when assigned a major role in comprehension and recall, they seem to be equivalent to performance strategies. Within the realm of syntax, psychological studies have indicated that the structures described in generative grammars are relevant to cognitive processes but that the rules in the grammars cannot be taken as realistic models of those processes [Bever, 1970]. Thus story grammars serve as a rather strange model for the study of narratives from a cognitive perspective,

since they do not analyze the rules of the grammars in psychological terms, and either formalize story structure without modeling cognitive processes, or simply identify structural descriptions with cognitive processes.

From a theoretical perspective, perhaps the most problematic feature of story grammars is the assumption that narrative structure can be adequately formalized in terms of a model developed to deal with syntax and phonology, rather than the discourse level of language. This remains a problem even if the rules in story grammars are regarded as structural abstractions and are not taken to be isomorphic with cognitive structures in people's minds, and are not identified with psychological processes underlying discourse comprehension, production, or recall. Experiments have been aimed at demonstrating the validity either of an entire grammar as a whole or of specific features of a grammar, but with the exception of Stein and Glenn [1977a] no research has been devoted to the question of whether the concept of rules in a grammar is an appropriate, adequate way of describing the structure of narratives which people actually produce. If the collection and analysis of data presupposes the existence of a story grammar, it will be difficult to evaluate the theory objectively or to formulate a different cognitive model.

In addition to these theoretical problems, the application of the generative grammar model to the analysis of narrative structure has led to methodological difficulties. Generative grammars of syntax have typically been constructed and verified on the basis of the linguist's intuitions concerning the meaning and grammaticality of sentences which he himself

composes. Since the intuitions of a native speaker were assumed to provide direct evidence for underlying competence, it was theoretically possible to investigate what a person knows about grammar, or competence, independently of how he uses this knowledge in real situations, or performance. Of course, this methodology was not without critics, who pointed out the unreliability of intuition as a verification of grammar [Labov, 1970] and the fact that grammaticality judgments are themselves a type of linguistic performance [Bever, 1970].

Perhaps because of their background in psychology many scholars interested in narrative structure have supplemented the highly intuitive methodology of generative grammar with "performance data" of various types. Rather than composing their data themselves, researchers have usually relied upon existing stories. The rules abstracted from these samples of narrative production actually constitute generalizations about performance in Chomsky's terms, and their validity depends upon the nature of the sample, which has, in general, been limited to short, simple tales, and may therefore be rather unrepresentative of modern stories. The formulation of structural rules is problematic, since there are no established guidelines for deriving categories or structural constituents from the sample stories, or for determining how many levels of constituent structure should be included in a grammar. Therefore, grammars have been based primarily upon the analyst's intuitions about structure, which has led to a lack of correspondence between the rules in story grammars of different authors, and a questionable proliferation of hierarchical levels in some grammars. Although story structure is analyzed intuitively, the proposed grammars are usually verified by

experimentation. Unfortunately, the experimental tasks performed often have been quite unnatural and artificial. Therefore, the evidence for story grammars is not unambiguous, since people may use different strategies to unscramble jumbled stories or to memorize short texts than they use in their ordinary production, comprehension, and recall of narratives.

When developmental studies are based on story grammars, the theoretical and methodological problems become even more acute. Any developmental theory is necessarily limited by the theoretical model constructed for adults, since this defines the end-state of the acquisition process. Generative rules were not originally intended to serve as a psychological model, and are not readily re-interpreted in developmental terms. When adult competence is formalized as a grammar of rules for structure, acquisition tends to be seen as the progressive addition of rules to the child's grammar. Story grammars assume, as do generative grammars of syntax, that rules are in their final, complete state in adults, who have fully acquired the knowledge of how sentences or stories are structured in their culture. Differences between adults and children in the comprehension, production and recall of stories are seen as reflections of the differences between their respective story grammars. Since the rules in the adult grammar are not described in psychological terms, the impression conveyed is that a child learns a number of individual pieces of information or facts about stories until he has learned the entire adult set of rules; at this point his narrative competence is presumably equivalent to that of an adult. However, in this framework there is no explanation of what it means to acquire a rule, or why some rules are learned earlier than others.

In studies of the development of narrative structure, methodology has been an important problem. The stories used in experiments may be prototypical folktales, but there has not yet been any solid empirical research on what kinds of stories modern children hear, and whether folktales provide a representative model of the end-point or goal of story development. Furthermore, the experimental tasks children are required to perform with these stories are unnatural, which may affect children's performance even more than adults'. Results of tasks which seek to measure comprehension through recall are difficult to interpret, especially when "recall" is actually presented as a memorization task. When so little is known about the cognitive processes involved in performing various tasks, it is probably dangerous to base conclusions about children's underlying knowledge upon the results of experiments using unnatural input or tasks.

Perhaps the most fundamental methodological problem in story grammar research has been that children's performance is often evaluated in the absence of data on how adults perform the same tasks. Until there is more data on adult performance, it seems unfair to compare children's performance of various tasks involving stories with a model of adult competence based upon a structural analysis of story texts. At the present stage of research, the nature of adult narrative competence is still an empirical question, and the investigation of narrative structure in children and adults must proceed together.

CHAPTER 2
A DEVELOPMENTAL STUDY OF
NARRATIVE PRODUCTION

The Verbalization of Experience in Stories

For many years the primary goal of linguistic and developmental psycholinguistic theory has been a formulation of the native speaker's knowledge of various domains of language: syntax, phonology, semantics, pragmatics, and recently, discourse. Yet it is questionable whether this goal has really been achieved. If we accept Bever's claim that making grammaticality judgments is actually a form of linguistic performance rather than a direct measure of competence, then we must recognize that even adult syntactic knowledge has been studied through performance of a particular cognitive task, in which linguistic knowledge is only one contributing factor. In acquisition studies, since it is impossible to appeal to children's linguistic intuitions, the study of their underlying knowledge has been based upon speech samples. Knowledge of narrative structure has been investigated primarily through story comprehension and recall tasks.

With children, the practical problems of studying competence are compounded since their linguistic knowledge is in a state of change, and the other cognitive skills which may be required to perform any given linguistic task are also not fully developed. If a task being used to assess linguistic competence makes heavy demands upon other cognitive skills, the child may be unable to implement the full extent of his knowledge, resulting in a lower apparent level of competence. With

respect to narratives, for example, a child might well be familiar with, and expect to hear in adults' stories, structural features which he cannot yet produce when required to construct his own narrative. It seems likely that the gap between unconscious knowledge and performance capabilities is even greater in children than in adults. Therefore, although it may be theoretically possible to isolate competence or knowledge from other aspects of cognition, the study of competence per se may be an unrealistic and somewhat irrelevant goal for those interested in psychological processes, since this unconscious knowledge does not manifest itself in real life in isolation from other cognitive abilities.

Therefore, the focus of this dissertation will be on narrative performance rather than competence; the performance task to be investigated is production, which is in many ways the simplest natural task involving narratives to study. From the standpoint of performance, having "acquired" a rule means having developed the ability to perform tasks as if one knows the information which that rule formalizes. The goal of this study will be to investigate both the structural knowledge which is formulated in story grammars as rules, and the cognitive skills which are involved in making use of this knowledge during the production of a narrative. Analyzing the cognitive demands imposed by the task of story-telling should help define, from a psychological point of view, what it means for an adult to "have" a rule for story structure, and for a child to "acquire" it. Thus the acquisition of narratives will be investigated as the development of the ability to perform whatever tasks are involved in the production of a good story, and not just as the accumulation of knowledge, or pieces of information, about how stories are constructed.

Studying narrative production shifts the emphasis from underlying knowledge to the process of storytelling. Recent research on narrative structure inspired by the work of Bartlett has, like research on syntactic structure, been concerned primarily with formulating the concept of a schema for story structure in terms of competence, developing an abstract model of structural knowledge. In the study both of language and of narratives, the work of Chafe has been an exception to this trend in its emphasis on psychological processes.

In *Meaning and the Structure of Language* [1970], Chafe spoke out against the model of language in generative grammars, in which syntax is central, and the mappings between syntactic, semantic, and phonological levels are not intended to reflect the psychological processes involved in language use. Instead, Chafe proposed that the study of language take its starting point from a psychologically real perspective, namely, that of a speaker who has something to communicate to a listener. Thus, in contrast with the usual emphasis on competence, Chafe has focused on language production, or "verbalization," that is, "all those processes by which nonverbal knowledge is turned into language" [Chafe, 1977a].

In several different studies, including a cross-linguistic project on the verbalization of a short film, Chafe has analyzed the process of converting experiential input into language, specifically, into narrative form. This conversion process takes place on different levels during narration, from the selection of appropriate linguistic categories to fit one's mental image of individual objects and people to the selection of an appropriate format for presenting one's memory of an entire complex experience, which is influenced by pre-existing mental schemas. The concept

of schemas has an important role in Chafe's analysis of the verbalization process, but is not identified with the notion of rules. Defining a schema as "a stereotyped pattern by which experience is organized," Chafe [1977b] states that schemas "determine how we will conceptually organize the experience, what attitude we will have toward it, what expectations we will have concerning it, and also how we will talk about it." Thus schemas are both ways of interpreting experience and of organizing discourse. Chafe points out that the same experience may be interpreted and narrated in terms of different schemas, and emphasizes the creativity of the speaker in the processes of selection and organization involved in producing a narrative.

In the field of child language acquisition, there has been, in general, more concern with language production and psychological processes than in the field of linguistics. Since language acquisition is part of the child's cognitive development, researchers have always been interested in the possible psychological reality of structural descriptions, and of the linguistic categories appearing in rules for structure [cf. Bowerman, 1973; Parisi and Antinucci, 1971].

More recently, attention has begun to focus on the experiential input to the production process, that is, the child's cognition of an event or situation as well as the linguistic rules which he uses to convert this cognition into verbal form. Thus the child is seen not only as acquiring a particular set of rules, but as learning, given a particular situation in the real world, which aspects of that situation to encode and how to encode them. Slobin [1979] suggests that children may begin language acquisition with "limited and childlike ways of conceiving of

basic events and situations, at first matching grammatical expression to primary or basic event schemata." He proposes that there are certain types of experiences which are salient to the child, and that these prototypical events and situations provide the initial conceptual framework for the acquisition of grammar. For example, in "prototypical transitive events," an animate agent willfully brings about a physical and perceptible change of state or location in a patient by means of direct body content. This event is recognized by the pre-linguistic child, who builds up linguistic categories such as "causal agent" on the basis of the entire scene in which the agent is embedded. In acquiring language, children initially isolate and generalize the basic, canonical sentence forms which verbalize such scenes in their language. Slobin concludes that "prototypical events and canonical sentence forms constitute a nucleus for the growth of language."

When the acquisition of grammar is described in this way, it is possible to see the similarities between the acquisition of language at lower levels and the acquisition of narratives. To acquire syntax, the child must develop the ability to recognize that a particular event or situation can be verbalized by a syntactic pattern with which he is familiar; he learns to do so after hearing certain linguistic patterns used repeatedly in the context of similar experiences. The production of narratives entails learning to schematize much larger chunks of experience, on the basis of adult models which are still largely unknown, but which probably often narrate experiences that the child has himself shared. The course of development of the ability to tell stories has yet to be studied; narratives of personal experience may emerge gradually from

simpler, less elaborate reports of immediately prior events, such as those described by Umiker-Sebeok [1979]. Studying children's narratives provides an opportunity to examine a stage of language development at which the child can verbalize experience at a higher level of organization and complexity than has usually been investigated.

This dissertation will take the notion of converting experience into verbal form as the starting point for a developmental study of narratives. The focus will be both on the "input" experience which has occurred, and the "output" narrative which is produced; the differences between adults' and children's narratives will be examined to gain insight into the cognitive and linguistic processes involved in verbalizing remembered experience in story form. Since most research on the development of discourse has been conducted in English, the present dissertation will examine this process in Japanese. This will provide some preliminary data on narrative production among Japanese adults, which can be compared with what is known about adult narrative structure in English, and with the results of developmental studies of American and British children. Thus it should be possible with Japanese data to make some suggestions about language-specific influences on the verbalization process.

The methodology for this developmental study was adapted from Chafe's project on the verbalization of remembered experience in different languages, conducted at the University of California, Berkeley. For that project, samples of adult speakers were shown a short film and asked to tell an interviewer what happened in the movie. For the present research, a videotape from a popular television cartoon was shown to a sample of Japanese children and adults, who were then asked to tell the story which

they had seen. This procedure has several advantages for a developmental study of narratives. Many of the studies of narrative development, in which the child tries to repeat verbatim a written text which is read to him, do not have much relationship to ordinary language use. Retelling vicarious experiences, in contrast, approximates normal language production since, as Chafe has pointed out, "the conversion of visual-auditory input into a verbal output ... is what a great deal of language is all about." In a developmental study, it seems especially important that the task should be as natural as possible, and bear some resemblance to activities which children actually perform. Although many of the stories which children hear may be simple, storybook texts, it was hoped that retelling a television story would encourage a more spontaneous, less stylistically constrained type of verbalization. Moreover, since television is currently a major source of stories in the lives of children, and they do retell the plots of their favorite programs, the task seems to be a familiar, fairly natural one.

Of course, real personal experiences constitute the richest source of experiential input, and probably lead to the most natural type of narration. But this type of data has the shortcoming that the analyst has no direct knowledge of the input, and hence no objective standard against which to judge a speaker's treatment of the story he is telling. Furthermore, since the content of personal stories will vary considerably, it would be more difficult to determine which differences among the stories of adults and children have a developmental basis. A videotape seems to provide a compromise between naturalness and control. Certainly audio-visual stories, especially cartoons, incorporate a greater degree

of pre-interpretation, abstraction and simplification than actual experience. However, a videotape is a much richer input than a text, incorporating a greater degree of experiential content than a story which has already been "verbalized" in writing. Using a videotape as the input for a storytelling task also creates the opportunity for adult subjects to experience and narrate the same story as children; this provides a sound empirical basis for analyzing the developmental data, and also gives some insight into the kinds of adult models which children may hear.

The Input Story

The Sazaesan television series was appropriate to the present study for various reasons. The program was being aired during 1978, when the study was performed, so the children were already familiar with the characters and type of stories usually shown. The 30-minute program is divided into short, independent stories, and so a single Sazaesan segment was long enough to present a richly detailed story, but was still one of the shortest complete stories available in videotape or film. Since this program depicts scenes from family life which are likely to be equally appealing to boys and girls, it avoids the extreme sex bias of the more modern cartoons, which features stories about baseball and superheroes for boys, and romantic tales of European princesses, rich orphans, etc. for girls. The Sazaesan cartoon has always been popular among adults, and so appropriate for use with adult subjects.

The Sazaesan videotape chosen was seven minutes long, in color, and included much colloquial, natural dialogue among the story characters.

The videotape begins with Wakame, Sazaesan's younger sister, coming home from school. In the "genkan" (doorway) she encounters a mischievous toddler named Ikura, who is pulling all the shoes out of the shoebox; Wakame is hit with a flying shoe, then Ikura stains her skirt with shoe-polish. When Wakame angrily protests to her mother and Sazaesan, she is told that Ikura's mother, Taeko, is sick, so they are taking care of him. Sazaesan explains that there is nothing they can do about Ikura's mischief since he is too young to understand speech. Wakame suggests that they spank him, but her mother says that this is also impossible, since Ikura is not their own child.

At this point Tara, Wakame's younger brother, is heard calling for his mother. All rush to the children's room to find Ikura pulling the books, pencils, etc. out of the children's desks and throwing them on the floor. Wakame's older brother Katsuo arrives home from school at this point, but although both Katsuo and Wakame are furious, Sazaesan merely promises to clean up the mess.

In the next scene, everyone is gathered about the table having their afternoon snack, and Katsuo and Wakame are complaining that Ikura is spoiled. Ikura throws a piece of cake at Katsuo, which lands in his tea and splashes his face. Katsuo scolds Ikura, who cries and is again defended by Sazaesan.

Next Ikura and Tara are seen happily playing, and Sazaesan goes to visit Taeko. She is shown placing an icebag on Taeko's head, making dinner for her, and assuring her that Ikura is being very well behaved.

The next scene begins with Sazaesan's mother making dinner in the kitchen. Suddenly Ikura is heard crying in another room; he had pulled

out a dresser drawer, and is pinned underneath it. Sazaesan's mother sighs in exhaustion but still does not scold Ikura, although her best kimono has been dropped on the floor.

At this point Sazaesan's father arrives home wanting to eat dinner immediately, but it is not ready because of all the trouble which Ikura has caused. The father also does not get angry with Ikura, who is now peacefully sleeping, but Katsuo and Wakame angrily plan to complain to Ikura's father.

But when Norisuke, Ikura's father, comes to take him home, everyone is amazed to see him exhausted, carrying a large bag of groceries. He explains that it is the first time since their marriage that his wife is sick, leaving him to do the shopping. Wakame and Katsuo feel so sorry for him that they do not complain about Ikura's behavior. Norisuke asks Sazaesan's family to babysit for Ikura again the next day and leaves carrying Ikura on his back.

In the following scene Katsuo and Wakame are seen busily taping shut their desk drawers; they explain to Sazaesan that it is to prevent Ikura from messing up their things. But when Norisuke arrives, he is alone and explains that since Taeko's fever has gone down, Ikura is staying at home, where he will be quieter. Norisuke then apologizes to Katsuo and Wakame for Ikura's mischief, which leaves everyone wondering how he found out about it since they had not told him and Ikura was too young to talk.

In the final scene Taeko is shown having tea with Sazaesan's family and explaining that Ikura had told her everything that had happened. She shows that she can understand Ikura by "translating" his babytalk for the children. Ikura babbles, and Taeko replies, "Oh, there's a snail walking

on a leaf." In amazement Katsuo and Wakame rush outside, and the camera focuses on two snails on a leaf. Taeko then explains that Ikura had seen her take medicine from a drawer, and was actually searching for medicine for her when he pulled all the books from their desk drawers. At this Wakame apologizes to Ikura, and Taeko translates Ikura's words of apology to her. Amazed, Wakame asks Taeko how she can understand Ikura, and Taeko explains that it is because she is his mother. Sazaesan adds that Wakame will be able to do the same someday. A "bubble" appears over Wakame's head and she imagines herself as a mother listening to her child's babbling and happily replying, "Oh. Mommy's face is pretty?" Her child babbles again, and the words "Zenzen chigau yo mama" ("No, you're wrong, mommy") appear over her head. (A few of the older children were apparently able to read these words, which were in syllabic script, but most of the children could not.) Wakame concludes, "I won't be a mother for a long time," and the videotape ends.

Certainly, this story was very different from those usually used in studies of narrative structure. It was not a traditional Japanese "mukashibanshi" (folktale), and so does not provide an opportunity to study traditional Japanese cultural norms for stories. It was rather involved and complicated; certain parts were clearly intended for the amusement of adults, and were not understood by all of the children in the sample. However, this Sazaesan story was actually an extremely versatile input, depicting typical scenes from modern life, expressing accepted attitudes toward child rearing, including enough subtlety and humor for adult viewers, and enough interesting lively action sequences to entertain the children. Also, it was a sufficiently typical television cartoon that the viewers were comfortable with the task of narration.

Subjects and Interviewers

The subjects for this study were 60 children and 10 adults living in a middle-class suburban area on the outskirts of Tokyo. The children were attending either a large private kindergarten in Musashino-shi called Chūō Yōchien which has over 500 children between three and six years of age, or the first grade of Musashino Shiritsu Senkawa Shōgakkō, a public grammar school. The sample of children was chosen to cover the early stages of narrative development, and to discover the youngest age at which children can deliberately construct, on demand, a story based on events which they have experienced vicariously. (Personal narratives appear much earlier; in a sample of younger children interviewed at their homes, one child as young as 1.10 years told a very brief story of a remembered experience.) In order to cover this age range in detail, samples at four month intervals were chosen, a sampling approach used by the Berkeley Cross-Linguistic Language Development Project under the direction of Slobin and Ervin-Tripp. The sample consisted of six groups of 10 children, 5 boys and 5 girls, within each of the following age ranges: 3.8-4.0, 4.4-4.8, 5.0-5.4, 5.8-6.0, 6.4-6.8, and 7.0-7.4 years. All the children under seven years of age were attending kindergarten; the seven-year olds were first-graders. Many children under five years old had difficulty narrating the Sazaesan story, whereas almost all the seven-year olds were able to perform the task with ease. The adult subjects were undergraduate and graduate students between 21 and 29 years of age attending Kokusai Kirisutokyō Daigaku (International Christian University), a private university in Mitaka-shi, neighboring Musashino-shi.

Since most of the children's teachers at the kindergarten were women, female interviewers were chosen. A total of six interviewers participated in this study; all were in their twenties, and all but one were graduate students at International Christian University.

All participants in this study, adults and children, were native speakers of Japanese.

The Narrative Sessions

The narrative sessions were conducted at the kindergarten during the morning school hours, and at the first grade immediately after classes ended in the early afternoon. Each child was interviewed individually in a quiet room by two interviewers; one interviewer served as the principal elicitor, the other as the listener to whom the child addressed his stories. The child sat beside the elicitor, in front of a table with a tape recorder on it, across from the listener. In the kindergarten, the experimenter sat out of sight behind the child and elicitor operating the video machine and taking notes. In the grammar school, this was impossible because of the layout of the available room and the children's intense interest in the foreign experimenter. Almost all of the kindergarteners ignored the experimenter completely, and none of the children seemed at all self-conscious or uncomfortable about the tape recorder.

The experimental session consisted of three tasks: storytelling from eight sets of pictures, narrating the story of the Sazaesan videotape, and performing a short-term memory task with small animals. In between these tasks the interviewers engaged in conversation with the child, sometimes eliciting personal narratives from the more talkative children.

An entire session with the three tasks took approximately 30 minutes; many of the children under five years of age were interviewed in two or occasionally three sessions, depending upon the individual child's attention span and interest in the tasks. When the interview was conducted in two sessions, the first usually included about five picture series and the memory task, and the second included the remaining pictures and the Sazaesan videotape. Thus, the Sazaesan task was always performed after the child had gained practice telling stories from pictures.

A session would begin with some preliminary conversation; then the elicitor would invite the child to play a game in which he would look at pictures that made up a story, and tell the story to the listener, who would not be allowed to look at the pictures herself. Each picture story consisted of from five to eight frame cartoons depicting four children involved in various short event sequences. The listener kept her eyes covered, but nodded and said, "Un" (Uh-huh) as the child, with help and prompting from the elicitor if necessary, told the story. After each story the elicitor asked the listener if she had understood, giving her the opportunity to ask the child questions about any unclear points in his story. This task served to create a storytelling situation without placing any memory burden on the child during narration. Storytelling from the pictures was a much easier task for the children than telling the Sazaesan story, and most of the 20 subjects under five years of age were able to perform this task with some prompting either immediately or after one or two demonstrations by the elicitor.

After the child told stories from pictures, the elicitor would announce that she was going to show a Sazaesan program on the television,

with the listener out of the room, and asked the child to tell the story to the listener when she came back. The elicitor and child then watched the videotape together; when it was over, the listener returned, and asked the child the standard question, "donna hanashi datta no?" (what was the story?). At the beginning of the child's narrative and whenever necessary in the course of the story the elicitor provided a prompt. If the child fell silent, the listener would simply say "sorede?" (and then?), or if appropriate, "sorede doo shita no?" (what did he do then?). If these prompts failed, or if the child explicitly stated that he could not remember what happened next, the elicitor would give a prompt supplying the child with specific information, such as "sorede keeki tabete ita deshoo?" (then they were eating cake, weren't they?). The elicitor had a standard set of prompts to use at different points, reminding the child of the events or activities which began the next major scene.

Essentially the same procedure was followed with the adult subjects. For uniformity female interviewers were again used, although this created some social and stylistic constraint with certain of the male subjects. During the storytelling from pictures, the listener did not cover her eyes, since this would have been unnaturally childish for adults. Before the Szaesan task, adults were not told in advance that they would be asked to tell the story to the listener, in an attempt to reduce the amount of deliberate preplanning during viewing. The memory task was not performed, since the typical adult short-term memory span is well known. In addition, each adult subject was asked to tell the interviewers some interesting story from his own personal experience.

Transcription and Translation

For the present dissertation, only the data from the Sazaesan storytelling task have been analyzed. The children's data were transcribed by the experimenter and corrected by native speakers of Japanese; the adults' data were transcribed by native speakers and reviewed by the experimenter. Only data which consisted primarily of narrative rather than dialogue between interviewer and child were included in the sample; tapes which were mostly short answers to content prompts were excluded. This reduced the sample of stories told by children under five years old to only seven subjects: two boys and one girl at 3.10-4.0 and one boy and three girls at 4.4-4.8 years of age. The ability to construct a narrative from memory on the basis of a vicarious experience apparently develops within the age range sampled; more than half of the children under five years old either would not attempt the task or did not produce more than one or two clauses at a time independently.

The Sazaesan stories were, in general, rather difficult to translate, and the translations given in the following chapters were composed with the help of a native speaker of Japanese. Since the primary focus of this dissertation is the discourse level, the goal has been to preserve the basic content, style, and delivery of the stories without attempting to provide a morpheme-by-morpheme translation. The Japanese examples are given in a modified Hepburn system of transliteration, with doubled vowels indicating long vowels. Each group of words produced with a single intonation contour is given on a separate line and followed by a comma; intonation groups usually ended with rising intonation, the particle "ne", or heavy stress and higher pitch on the last syllable of the intonation group,

which is indicated in the transcription by an apostrophe. Sentences typically end with syntactic closure and falling pitch in Japanese, and the ends of sentences are indicated by periods and a capital letter starting the first words of the new sentence. The children often ended sentences with "ne" and rising intonation; this is marked by a semi-colon rather than a period. Quotation marks are used where appropriate to facilitate comparison between the English and Japanese. Inaudible or unclear words are indicated by slashes.

Intonation groups were almost always followed by a perceptible pause, which has been indicated by three dots at the start of the new intonation group. Extremely short pauses which are almost imperceptible, like minor disruptions of the speaker's rhythm, are indicated by two dots. It is impossible to capture in English the variety and subtle differences between the many types of filled pauses which occur in Japanese, including "unto" and "eto"; "nanka" (literally, "something"); "ano", and in one adult narrative "sono", which are homophonous with the adjectival deictics meaning "that"; and "koo", which is homophonous with the adverbial deictic meaning "in this way". In English these have all been rendered as "uh", which is the most common hesitation in adult narratives, or "um", which has been used more extensively in the translations of the children's stories because of its child-like quality.

"Ne" is a particle which occurs with an extremely high frequency in Japanese discourse and has no good English equivalent, although it may be translated as "you know" or "isn't it?" In general, "ne" functions to elicit confirmation from the hearer, either that he agrees with the speaker's statement or merely that he is continuing to pay attention to what the speaker is saying. "Ne" can occur alone, after a filled pause,

and in almost every syntactic environment, most frequently after subjects and entire clauses, but also after adverbials or any argument of a predicate. Typical behavior for the listener in Japanese discourse includes very frequent nodding and saying "un" (casual), "ee" or "hai" (polite), which all mean approximately "yes" or "uh-huh". These supportive utterances tend to be coordinated with the speaker's use of "ne", creating a more intensely interactive and cooperative feeling between speaker and hearer than is typical of American discourse. The extremely high frequency of this particle in narratives may be based on the speaker's need to receive constant confirmation of his right to hold the floor for such a long time. The rising intonation which is typical for "ne", and very common in these narratives, adds to the impression that narrators are seeking confirmation of their right to continue speaking, since rising intonation is used for questions in Japanese.

In addition to its interactional function, the option of using "ne" with rising intonation and a pause at so many points within a clause may have important cognitive effects with respect to language production. A high frequency of "ne" allows the speaker to break down his verbalization into extremely small intonation groups, thus reducing the amount of linguistic preplanning which must occur between pauses. An alternative way of creating such small intonation groups in Japanese, which was much rarer in these narratives, is to place heavy stress and high pitch upon grammatical morphemes such as topic, subject and object markers, and upon the last syllable of clause-final conjunctions and verbs. In the children's stories intonation groups were extremely short, often consisting of a single lexical item; for example, a genitive was often placed in a

separate intonation group from the noun which it modified. These small verbal units with "ne" create a repetitive intonation pattern which appears to be typical of Japanese children's narrative style, elicits a high frequency of response from the listener, and permits the child to plan his narrative at the rate of a few words at a time.

In English, it is impossible, or at least extremely unnatural, to produce clauses in which subject, verb, and object each are presented in separate intonation groups. However, the translations which are given attempt to preserve the size of the Japanese intonation groups in order to maintain some degree of line-by-line correspondence between the Japanese and the English, and to convey some sense of the style and delivery of the Japanese stories. "Ne" has not usually been translated, since the result would be too unnatural in English; however, the reader is invited to notice the high frequency of this form in the Japanese transcription. Most intonation groups in the Sazaesan stories ended with "ne", especially in the children's stories, and so almost every comma in the English translations corresponds with an occurrence of "ne" in Japanese.

Data Analysis and Presentation

With these transcriptions of the Sazaesan stories, it should be possible to investigate many of the theoretical issues which have been raised in previous studies of narrative structure, and also to explore features such as thematic and linguistic organization, which have been largely ignored in prior research. With respect to story structure, it will be possible to discover whether there are consistent patterns in the stories to indicate that speakers share a schema for organizing and

presenting experience in narrative form. There are many problems in interpreting the experimental evidence for story schemas, but data from other sources also supports the claim that there are typical cultural formats for the structure of narratives. Such patterns have been found in stories of personal experience told by adults and children [Chafe, 1977a; Labov and Waletzky, 1968; Labov, 1972; Kernan, 1977; Umiker-Sebeok, 1979; Brady, 1978] and in stories based on films [Chafe, 1979; Baggett, 1977]. If evidence that the Sazaesan narratives are constructed according to fixed schemas can be found, these schemas can be compared with those which have been proposed in the literature, to determine what features of current story grammars are applicable to narratives other than simple tales, and to analyze aspects of story structure which may not be covered by these grammars. Structural schemas are assumed to have an important function in the process of story comprehension; whether this is also the case for story production can be examined by determining how many of the structural features of the narratives in this sample can be accounted for in terms of general schemas. Since the input story will be the same for all speakers, if there are also shared schemas for organizing narratives, the structural unanimity of the stories produced in this task should be striking. Thus it should be possible to evaluate the notion of rules for story structure; in fact, the data should be biased in favor of interpreting story production as a rule-governed phenomenon.

To explore these issues, Chapters 3 and 4 will analyze the structure of the Sazaesan stories, comparing the adult and child stories. Analysis will focus on the task demands of producing different structural features. With respect to acquisition, the goal will be to discover the abilities

which children must have to produce adult structures, and to describe and explain the differences between adult and child story structure in terms of the development of the cognitive and linguistic skills involved in narration. Although the emphasis will be on production, it should also be possible to infer adults' knowledge of story structure, and what knowledge children may be lacking. The criterion for acquisition will be the adult narratives, to avoid making any a priori assumptions about the nature of adult competence.

Unlike generative grammars of syntax, story grammars use semantic categories in their rules, thus incorporating a certain amount of information about content. However, the analysis of narratives within schema theory has aimed primarily at discovering the structural patterns which are used to express a range of different content rather than developing a model for analyzing the content or themes of specific stories. Of course, the content of the Sazaesan stories was constrained by the content of the input videotape. Nevertheless, since it would have been impossible to verbalize every detail seen in the videotape, speakers had to decide which material to include and which to omit, making it possible to study the nature of story-specific content selection and presentation. Chapter 5 will examine the content of the Sazaesan narratives and will analyze how speakers constructed their stories around the themes which they selected for narration. Again, the emphasis will be on the nature of the tasks involved in the thematic organization of a narrative, in an attempt to account for the differences between the adults' and children's treatment of themes.

Recent studies of narratives have paid very little attention to

the linguistic organization of stories, although this is an obvious source of evidence for narrative structure. Chapter 6 will explore the relationship between story structure and the linguistic devices which are used to realize this structure. Since propositions, and the relationships between propositions, have been emphasized in the literature on narrative structure, the linguistic analysis will be limited to the connectives used to link propositions, and the placement of sentence boundaries between propositions. Thus it should be possible to discover some of the principles underlying sentence formation in discourse, one of the many linguistic processes involved in verbalization. The structure which is created within the narratives by linking propositions into sentences will be examined, and compared with the structures derived from the analyses presented in the third and fourth chapters.

The final chapter will examine the speakers' recall of the Szaeszan videotape. Since the subjects produced their stories immediately after viewing, the data will reflect the nature of recall at an early stage when memory is still quite detailed and accurate. Of course, the analysis will be subject to the problems inherent in assessing recall through production; speakers may call to mind information which they do not choose to include in their stories. However, it will be possible to analyze what speakers regarded as the most "tellable," salient part of what they recalled, and to gain some indirect insight into what was understood and stored from the original story. The hesitations and memory failures characteristic of oral narratives can be analyzed as evidence for the nature of the retrieval process. Since the "input" story is available for objective comparison, it will be possible to evaluate the accuracy

of recall. Inaccuracies can be analyzed to determine whether there is evidence for assimilative, constructive recall, and to assess whether subjects are using story schemas to guide their retrieval of information for verbalization. Since the instructions did not mention accuracy, it should be possible to gain insight into the type of recall which underlies ordinary narration.

CHAPTER 3

BACKGROUND INFORMATION AND EPISODIC STRUCTURE

Story and Episode Settings

Analyses of narrative structure within schema theory have focused on the action of stories, taking the episode as their basic structural unit. In story grammars the episode is defined in terms of set patterns for the event sequences which may occur. The events in a narrative text are assigned to the categories which make up these patterns, such as goal-attempt-outcome, and in multi-episode stories episode boundaries are placed, for example, between an outcome and a goal. Thus an episode consists of specific types of action units, and the episodic structure of longer narratives is created by the recurrence of these action sequences.

The narrative schemas generated by story grammars emphasize events, and no formal differentiation is made between events and other types of content. Only the first rule of story grammars, which stipulates that stories should begin with a setting, makes explicit provision for material that is not part of the action. Providing settings, which typically give information about the characters, time, and place of the story, requires the narrator to step outside the actual course of events of the story, and to consider which information, if placed at the beginning, could help prepare the listener for the events. Certain contextual information is more or less formulaic for traditional tales, and perhaps for less formal stories as well. Labov [1972] and Labov and Waletzky [1968], for example, have found that narratives of personal experience often begin with an

"orientation" section giving the background information for the narrative to come. But although settings are found in many types of narrative, they are not the earliest feature of story structure to be acquired. Labov and Waletzky [1968] found that orientation sections "are typically lacking in the narratives of children" and even in the stories of "less verbal adults." Developmental studies have shown that production of this type of information increases with age in the stories of children [Kernan, 1977; Menig-Peterson, 1978; Umiker-Sebeok, 1979].

The narratives collected for the present study confirm the validity of the setting-plot schema for vicarious narratives in Japanese. All ten adults began their narration with background information, usually a character introduction, a locative setting, certain background events, and a theme. Four adult speakers started their stories by telling the interviewer the names and family relationships of the main characters, and five established through a brief dialogue that the interviewer was familiar with the characters in the Sazaesan series. In contrast, none of the children attempted to introduce the characters to the interviewer. Perhaps this was because the interviewers may have seemed to be Sazaesan experts or fans to the children, since they were carrying around a television set and showing a Sazaesan program. The adults, who had a greater understanding of the experimental situation, usually assumed that the interviewer who left the room during the showing of the videotape might need to be reminded of the cast of characters. Although the adults' and children's different interpretations of the experimental context may have influenced their production of story settings, the lack of introductions in the children's stories is consistent with Watson [1972] and Kernan

[1977]; apparently children often fail to present an adequate introduction of story characters.

The information produced most consistently in the story settings of these narratives were the background events leading up to and motivating the basic "behavioral situation" [cf. Kernan, 1977] for this particular story. All ten adults mentioned two background events, namely, that since a character named Taeko was sick, her toddler Ikura was being cared for at Sazaesan's house. Thus all provided a locative setting for the story; one adult also added a relatively empty temporal setting, "aru hi ni" (one day). Only two children between 5.8-6.0 years, one six year old, and two seven year olds, included both background events mentioned by the adults in their introductions. Since these events were recounted during the first scene, but were not actually depicted at the very beginning of the videotape, it appears that the ability to abstract background information and use it as a preface to the action was just beginning to emerge in the children over five years of age.

Thematic orientations were also very common, and seem to fit Labov's category of "abstracts" [Labov, 1972]. Nine of the ten adults and four of the five children with adult-like settings stated, immediately before the first events of the story, that Ikura was a very mischievous child. Only one narrator, an adult taking a psycholinguistics course, began his narrative with a different theme: "...ano...kodomo no gengo...shuutoku ni kan suru hanashi datta n desu yo." (...uh...it was a story about child language...acquisition). The following two examples illustrate the great similarity between the adults' story settings and those produced by the four children. (To the left of each excerpt from a narrative, the

speaker's age and sex is given.)

- Adult ... Are .../laughs/... ano ne, (1)
 F ... Taekosan ga ne byooki ni natchatta no ne.
 ... Sorede'
 .../laughs/... are ... ano ... Ikurachan ga ne,
 ... ano-- ... Sazaesan no ouchi de koo ... mendoo,
 mite morau koto ni nat ... ta n dakedo',
 ... Ikurachan ga monosugoi itazura o suru wake na no sa.
 ... Uh .../laughs/... well,
 ... Taeko got sick.
 ... And then,
 .../laughs/ ... um ... uh ... Ikura,
 ... uh-- ... it was arrange...d that he would be taken care of,
 ... at Sazaesan's house uh,
 ... but the thing is, Ikura causes a lot of trouble.

- 5.11 ... Eto ne, (2)
 M ... Ikurachan ... no ne okaasan ga byooki ni natte ne,
 ... soshite Ikurachan ga Sazaesan no uchi ni ne,
 ... azukerarete ne,
 ... soshite ne,
 ... Ikurachan ga ne ... ironna itazura shita no ne.
 ... Well,
 ... Ikura's mother got sick,
 ... and then Ikura was taken care of,
 ... at Sazaesan's house,
 ... and then,
 ... Ikura ... did a lot of mischief.

In story grammars the beginning of a narrative is usually the only place in which the rules explicitly allow for the inclusion of background information. However, a number of researchers analyzing narratives have noted that background material may appear throughout a story. Bowditch [1976] refers to this information as the "durative/descriptive structure" of a story, which provides "a spatial, characterological, and durational context" for the temporally ordered event sequence. Hopper and Thompson [in press] distinguish between the foreground and the background of a narrative, stating that the foreground consists primarily of chronologically ordered,

punctual, transitive events presented in main clauses, and the background emphasizes durative or repeated activities, intransitive events, scene-setting states, and evaluative comments. These authors have not analyzed the placement of background information from a structural point of view, but they did find material which fits this category in the body of the narrative texts they examined, and not merely at the beginning. Kintsch and his colleagues are the only researchers within schema theory who have attempted to account for the location of contextual information throughout a narrative; they postulate [Kintsch et al., 1977; Kintsch, 1977; Van Dijk, 1977] that each episode in a story begins with an "exposition" which provides an orienting frame for the coming action.

In the Sazaesan narratives, background information was not limited to the initial story setting, but was interspersed regularly throughout the narratives in a manner similar to that proposed by Kintsch. The features of content which most clearly segmented the stream of narration into units were changes along certain contextual dimensions, such as time, location, and character configuration; Chafe [1979] has made similar findings with a different sample of vicarious narratives. In the Sazaesan stories, the narrators shifted back and forth between the action of the plot and background information, and this alternating texture was responsible for the most striking structural characteristic of the stories, their episodic structure. Although a new episode could sometimes be identified on the basis of repeated action schemas, the clearest boundaries were those points where new characters arrived upon the scene, the action moved to a new location, temporal gaps occurred in the event sequence, or the narrator changed the perspective from which he was

presenting the story. Thus at least for certain types of stories, an adequate structural model should provide for the inclusion of various types of background material at regular intervals throughout the narrative.

As Chafe [1979] also found, contextual changes tended to co-occur and usually corresponded to scene changes in the videotape which the narrators had seen. Thus to a large extent the background information preceding a new episode was a verbalization of visually experienced changes along the dimensions of character configuration, time, place, and event sequence in the videotape. Taking a change in location as the tentative criterion for a new "scene," the Sazaesan videotape can be divided into approximately eleven different scenes. Each new scene opened upon a new spatial location, most often a different room within Sazaesan's house, but also occasionally the doorway or "genkan," which was usually the point of arrival or departure for characters. Every scene either began with the arrival of a new character or opened upon a new grouping of the characters already present in Sazaesan's house. At the start of seven scenes there was at least a slight temporal gap in the course of events; for example, characters who were talking in the children's room at the end of the second scene were suddenly shown gathered around a table having a snack at the cut beginning the third scene. Each scene depicted a new event sequence, or at least a new conversation.

In presenting their narratives, speakers often explicitly mentioned the changes which occurred at the beginnings of new scenes, thereby recreating to some extent the structural divisions in the videotape. Thus the Sazaesan narratives provide support for the proposal that speakers share a schema for narratives in which stories are defined as having an

episodic structure. This definition seems to be shared by makers of films and television programs, which consist of a sequence of scenes; this inherent structure is apparently recognized by viewers, and reflected in their vicarious narratives. If the different types of background material are categorized as settings, the structural result of verbalizing these changes was a setting-events schema for the organization of episodes. Like the initial story settings, the episode settings consisted of information abstracted from individual scenes which could make the event sequence more readily comprehensible to the listener by orienting her in time and space, and providing her with a background mental image including the objects and characters "on stage," which makes the event sequence easier to visualize.

Developmental Differences in the Presentation of Background Information

Although the use of episode settings was the most consistent structural feature in both the children's and adults' narratives, there were differences in the types of information in settings and the frequency with which they were mentioned in the children's narratives as compared to the adults' and across the range of children in the sample. Table 1 presents the percentage of the total number of episodes in the stories of each age group which began with the different types of background material. (When a scene from the videotape was divided into two parts and presented separately at different points in the story or when the same scene was presented twice, as sometimes occurred in the children's narratives, two separate episodes were counted.)

TABLE 1. Percentage of episode settings including each type of information.

Age	Character	Time	Place	Perspective	State	Goal	Activity
3.10-4.8	.07	.03	.13	.07	.03	.26	.10
5.0 - 5.4	.43	.23	.19	.05	.08	.09	.14
5.8 - 6.0	.37	.15	.20	.003	.05	.08	.12
6.4 - 6.8	.30	.23	.16	.18	.07	.12	.16
7.0 - 7.4	.42	.16	.21	.16	.08	.13	.10
Adult	.61	.58	.44	.42	.18	.07	.05

The relative frequency of different types of background information in narratives depends, of course, upon the nature of the particular events being recounted, and perhaps even upon the type of story being told. Menig-Peterson [1978], for example, found somewhat different proportions of these types of background information in children's personal narratives. The figures in Table 1, however, should give some indication of developmental differences in the production of background material in vicarious narratives.

As Table 1 shows, the information most frequently mentioned in episode settings was the arrival of a new character or characters. Only explicit arrivals of characters on the scene were counted in this category, although new characters were often mentioned near the beginning of a new episode, without any indication of how they came to be at Sazaesan's house. Children under five years old were the only subjects who did not mention arrivals more frequently than any other type of setting information for new episodes. There was no obvious developmental trend among the children between 5.0 and 7.4 years of age, but the adults included

arrivals in their episode settings much more frequently than these children. Chafe [1979] also found that character configuration was the strongest determinant of episode boundaries, with 89% of all episode transitions in his sample having some change along this dimension. It is interesting that stories based on input as different as this traditional Japanese cartoon and Chafe's film about a boy who steals some pears should both be structured around changes in character configuration. Perhaps this is one of the more common organizational principles for stories, at least in the visual medium.

As the much higher frequency of arrivals in the adult narratives suggests, one major deficiency of the children's episode settings was the failure to mention arrivals; characters who had not been "on stage" suddenly proceed to speak and act. The following narrative provides a clear example of this problem. Ikura's father is explicitly said to have gone home in the third line, but then speaks in the tenth line before he even arrives on the scene in the thirteenth line.

- 6.4
M ... Ikurachan no papa ga kite ne, (3)
... sorede ne,
... tsurete kaette itte ne,
... oneechan toka oniichan ga ne,
5 ... "Ikurachan ga kite ne,
... hikidashi ne,
... akenai yoo ni" tte yutte ne,
... sorede ne,
... Ikurachan no ... otoosan ga ne,
10 ... "hikidashi aketa koto ne,
... okotte ageru" tte yuttara ne,
... tsugi no hi ne,
kite ne,

... Ikura's father came,
... and then,
... he took him home,
... and the brother and sister,
5 ... said ("let's make sure that) when Ikura comes,
... he won't open,

... the drawers,"
... and then,
... when Ikura's father,
said "I'll scold him,
... for opening your drawers,"
... the next day,
he came over,

In the following example, Ikura's father also speaks, on line 3, without having ever been mentioned in the story.

4.6
F ... Taekosan ... Taeko obachan, (4)
to-- ... sorede ... byooki ga naotta no.
Sorede "netsu ga /naorimashita/" tte yut zembu yutte,

... Taeko ... Mrs. Taeko,
uh-- ... then ... got better.
Then "her fever /got better/" he sai said everything,

Thus essential background information about characters was often omitted.

In the Sazaesan videotape, there tended to be differences in the nature of time within and between scenes [cf. Chafe, 1979]. The events within a scene usually occurred in close succession, but at episode boundaries there were often clear gaps in the temporal sequence. At the end of the third scene, for example, Ikura is being held by Sazaesan and is crying; at the start of the fourth scene, he is playing happily with Tara. In this way six of the eleven major scenes in the Sazaesan videotape depicted the passage of varying amounts of time since the prior scene. Certain time changes were depicted visually in outdoor scenes showing, for example, the sunset or the starry night sky.

These temporal discontinuities in the videotape were reflected in the references to time which speakers made in their episode settings. Temporal references were defined rather loosely, and included mentions of absolute time, such as "yoru" (night), references to "film time," such as "saisho" (in the beginning) and "saigo" (at the end), vague references to

temporal sequence, such as "ato" (afterwards), and specifications of the time of one event relative to another event or situation, as in the following example:

adult ... Sorede ... sono ... minna ... iraira shite ta (5)
 F tokoro ni ne,
 ... kondo wa sono-- ... Sazaesan ... are nan dakke ne.
 ... Sazaesan ga ne,
 ... sono ... "jaa yoosu o mi ni itte kimashoo" tte yuu wake.

 ... Then ... uh ... when everyone was all upset,
 ... and then uh-- ... Sazaesan ... what happened next?
 ... Sazaesan,
 ... uh ... says 'well I'll go and see how she's doing,'

Time references that are incorporated into lexical items were also included in this count, as in the example, "... De-- ... yuuhan tabenagara" (And-- ... while they were eating dinner (literally, "evening rice")).

As Table 1 shows, temporal information was mentioned in the adults' episode settings almost as frequently as the arrivals of new characters. The children, however, provided temporal settings at the beginning of new episodes much less frequently. Only 15.0-23.1% of the episodes of children between 5.0 and 7.5 years of age began with some mention of time. Temporal references were almost totally absent from the narratives of the children under five years old, appearing at the start of only 3% of their episodes. The children's episode settings were often deficient in that they failed to specify time changes when it was not possible to deduce them from the actions being recounted, and when omission of temporal information made it difficult to understand the course of events. For example, in the following narrative there is no indication of any time gap between the fourth and fifth lines, although there is an episode boundary at this point and the events recounted on lines 5 to 9 took place

on a different day.

- 6.7
M ... tsugi no hi', (6)
... Ikurachan ga ... kitara,
... Wakame tachi ga mata arasarenai yoo ni,
... gamu teepu o hatte,
5 ... soshite ... mmmm soshite--,
Ikurachan ga',
... imi ga waku yoo ni natte',
... "eemu ... eemu" ... Ikura no okaasan nan dakke ni oshiete',
... sono itta koto oshiete,

... the next day,
... Wakame and the others stuck on tape,
... so that if Ikura came
... they wouldn't get (their things) messed up again,
5 ... and then ... mmmm then--,
... she understood,
... Ikura's meaning,
... and (when he said) "eemu ... eemu" Ikura's mother told
what it was,
... and she told what he said,

Since the adults and many of the children made frequent temporal references even where this was not necessary, it seems that temporal information is, in itself, felt to be an essential feature of narratives. Temporal references contribute to the general "orienting" function of episode settings, preparing the listener for the kinds of activities which may occur. The children 5.0-7.4 years old were apparently learning to provide the listener with temporal orientation, but the children under five years old had not yet begun to pay attention to temporal information during narration.

After changes in character configuration and time, the most frequently mentioned information in adult episode settings was spatial change. As Table 1 shows, adults provided spatial information at the beginning of 44% of their episodes, whereas among the children the frequency ranged from 13 to 21%. The youngest children used place changes

somewhat less frequently than the others; however, spatial change was the second most common type of information in the episode settings of the youngest group. Changes in place were apparently more salient to the children under five years old than changes in either character configuration or time; location was the only common type of setting information in the narratives of the older children and the adults which the youngest children used with comparable frequency.

Although Sazaesan's house served as the general setting for the entire narrative, depending upon how a speaker presented his story, there could be points at which spatial information was necessary. A common failing of the children's episode settings was the omission of spatial changes when this would result in an extremely abrupt or confusing transition to the next episode. The following examples are typical:

5.1
M ... /hito/ sa, (7)
... okaasan ga naotte sa,
... Ikura ... oniisan ga sa,
... dendenmushi ... dendenmushi ... mitsukete sa,

... /someone/,
... his mother got better,
... and Ikura ... Katsuo,
... found a snail ... snail,

5.8
F ... ojichan ga kite ne, (8)
... "Ta Tarachan zutto konai no?" tte yutte ne,
... unto "okaasan ga genki ni natta kara,
okaasan to issho no hoo shi shi shizuka yo" tte yutte ne,
... soshite ne,
... kotoba ... akachan no kotoba de mo ne,
... okaasan wakatta no ne;
... soshite ne,
... Wa Wakamachan "go gomen ne" tte yutte ne,

... his father came,
... and they said "isn't Ta Tara coming at all?",
... um and he said "his mother got better,
so he'll be qui qui quieter with his mother,"

5 ... and then ... then,
 ... his mother understood,
 ... his words ... even the baby's words;
 ... then,
 ... Wa Wakame said "I'm sor sorry."

In these cases the child proceeds from the tenth episode, in which Norisuke tells the children that Ikura's mother has recovered, to the next and final episode, in which Taeko and Ikura are visiting Sazaesan and Taeko "translates" Ikura's talk about the snail for the other children. The transition to the final scene takes place on the third line of example (7) and the fifth line of example (8). However, there is no indication given of the spatial change, which would prepare for the sudden reference to a snail in example (7), and would allow the hearer to visualize the final scene in example (8). As the examples demonstrate, the children often omitted more than one necessary type of information from an episode setting; the changes in time and characters at the boundary between the last two episodes are also ignored in examples (7) and (8).

The types of information mentioned least frequently in the episode settings of the adults were goals, background states, and ongoing activities. The adults mentioned background states much more frequently than the children, usually to establish the presence of objects which would be important in the coming sequence of events. The following example is typical:

adult	... De sorede tonde ittara ne,	(9)
F	kondo wa /breathes/ ... kondo wa ooki na ... un ... okaasan no hikidashi ga aru deshoo. ... K ano jootoo no kimono ga haitte iru. ... Sono hikidashi o akechatte ne,	

... And then when they went running,
... this time /breathes/ ... this time the big ... uh ... the
 mother's drawer is there, you know.
... Uh the one that has her k her best kimono inside.
... He had opened up that drawer,

Actually, this kind of background information is not really necessary, and many speakers described this scene simply by saying that Ikura pulled out the drawer and the kimono fell on the floor, without having mentioned the kimono in advance. However, the adults were more likely than the children to set the stage with background information, even when it could be inferred from the events.

In contrast, the children, with the exception of the youngest group, mentioned ongoing activities as a background for the main events of an episode somewhat more frequently than the adults. Children at each age in the sample included background activities in their episode settings more frequently than background states, whereas the reverse was true of the adult narratives. For example, the children often mentioned that everyone was eating in the third scene before describing how Ikura threw food, or said that Ikura and Tara were playing in the garden in the final episode before telling that Ikura found a snail. Sometimes the children described a background activity in a setting, but not the one which would be most useful in preparing the listener for the events of the episode. For example, in setting the stage for the third scene, one child mentioned that Katsuo and Wakame were talking, but did not mention that they were eating, which would have given a better background for the mention of coffee on the last line.

- 3.11 (10)
M ... unto ne,
... Katsuochan to ne Wakamechan ne,
... hanashi shiteru toki ni,
Ikurachan ga ne,
... mono o nagete ne,
... soshitara ne,
... unto ... koohii no naka ni haitchatta no.

... um,
... when Katsuo and Wakame,
... were talking,
Ikura,
... threw something,
... and then,
... um it went into the coffee.

Another type of episode setting which was more common in the children's than in the adult's stories was a statement of the reason motivating the main actions in an episode. This information was common in the children's stories because they tended to identify with Ikura in describing the mischief scenes, and mentioned his goal of finding medicine for his mother, whereas the adults either failed to mention Ikura's purpose or else saved this information to be the "surprise ending" of their stories. In fact, the children under five years old mentioned Ikura's goals more frequently than any other type of background information. Stein and Glenn [1979] also found that in retelling stories children had very good recall for the goals of the main character. A typical example of this kind of episode setting in the Sazaesan narratives is the following:

- 5.2 (11)
M ... sorede ... eto ... sorede ... de',
... Ikurachan no okaasan ga',
... ga byooki ... de,
... sorede ne,
... sorede',
... Ikurachan ga',
... ga ... eto ... Sazaesan chi no oniisan ni,
... eto ... benkyoo ... no ... a ... eto ... hikidashi akete,
... okusuri sagashite ta no.

... then ... um ... then ... and,
... Ikura's mother,
... was ... sick,
... and then,
... then,
... Ikurachan,
... um ... opened the desk ... uh ... um ... drawers,
... um ... of Szaesan's brother,
... and was looking for medicine.

As the last line of this example illustrates, descriptions of events are often interpretive, and incorporate the viewpoint of the narrator and/or particular story characters. This kind of interpretive description is the earliest expression of point of view in the children's narratives. The videotape actually presented Ikura's actions from the viewpoint of Szaesan's family until the final scene. However, the youngest children were closer to Ikura's age, and seemed to empathize with the way he was misunderstood by his elders. Perhaps young children tend to regard intention as being inherent in actions, and it may have been difficult for them to describe a purposive action from a viewpoint other than that of the actor.

Although in such cases point of view is expressed subtly through the way events are described, adult speakers often manipulated point of view more obviously by shifting back and forth among different "worlds" of experience in telling their story. These "worlds" [cf. Chafe, 1980; Tannen, 1980] included the world of the videotape, in which Szaesan's family is babysitting for Ikura; the world of the story, in which the narrator is retelling the plot of the videotape as a story; the mental world of the speaker, who is aware of his own internal reactions and mental processes; the world of the experimental situation, in which the subject first sees the videotape and then performs the task of narration

for the interviewer. In the adult narratives, these experiential worlds were reflected in the use of at least five different perspectives or viewpoints during narration: direct observer, narrator, introspector, film-viewer, and interviewee. Speakers often changed their point of view at episode boundaries, when they began to provide the background information for new event sequences. Changes in contextual dimensions such as time and space were verbalizations of changes which were "in" the videotape; narrators simply had to focus on, and mention, the static features of their mental images as they recalled the videotape. Changes of perspective, in contrast, are a reflection of what was "in" the videotape only to the extent that scene shifts, which are points of discontinuity in the story line, seem to stimulate their production. As will be discussed in the seventh chapter, speakers typically experienced memory problems at scene shifts, as the flow of recalled material for narration was temporarily interrupted. Apparently at these gaps in the continuity speakers tend to become aware of their own mental processes, of the fact that they are telling a story, and of the experimental context. Briefly stepping outside the world of the videotape, speakers will make references to themselves, the interviewer, and the story as such. Thus changes in perspective, like shifts from the action of the story to background information, tended to occur at scene changes, contributing to the demarcation of episode boundaries.

As Table 1 indicates, children under six years of age rarely changed perspective at episode boundaries, but six and seven year olds shifted point of view at episode boundaries much more frequently. Adults, who started 42% of their episodes with a perspective change, clearly think

that this information is appropriate for inclusion in an oral narrative.

A closer examination of point of view gives some insight into the children's development of the different perspectives which appear in the adult narratives. To analyze point of view in detail, each narrative was divided into a sequence of segments told from a single perspective, and the percentage of the total segments told from each point of view was calculated for each narrative. The figures for the subjects within each of the six age groups were then combined to give an estimate of the frequency of each perspective in the narratives of each age group.

Table 2 presents the relative proportions of narrative segments told from each perspective.

TABLE 2. Percentage of narrative segments told from each perspective.

Age	Direct Observer	Narrator	Introspector	Interviewee	Film- Viewer
3.10-4.8	.55	.25	0	.20	0
5.0 - 5.4	.55	.21	0	.24	0
5.8 - 6.0	.57	.22	.17	.04	0
6.4 - 6.8	.46	.29	.17	.08	0
7.0 - 7.4	.46	.18	.22	.14	0
Adult	.46	.21	.24	.07	.02

The most common point of view in the narratives at all ages was the "direct observer" perspective, in which the story is told as if it had happened in real life, and the speaker had been able to observe the events and background states in the videotape directly [cf. Tannen, 1980]. The percentage of story segments in this mode is somewhat higher for the

children under six years old who did not tell their narratives from as many different perspectives as the older children and adults. The "direct observer" perspective is apparently the basic mode for narration, even for the recounting of vicarious experiences. There were many subtle differences within this perspective, as speakers sometimes used interpretive or evaluative terms in their descriptions, but these have not been analyzed in detail.

A much less common point of view was the "narrator" perspective, in which the speaker adds brief frames for the events which indicate that they were part of a pre-existing story. In this perspective are included the opening and closing formulas, as well as phrases such as "saigo no hoo wa" (in the end). This point of view is similar to the film-viewer perspective in that it implies a vicarious, rather than direct, experience of the events being told, but does not indicate how the story was experienced. Example (12) below illustrates an unusually elaborated use of this perspective, in which the child uses a "narrator" frame as the beginning of each new episode, from which he recounts only the single most salient event. Each "narrator" segment reminds the listener that the events being recounted were experienced as a story having a structure of its own which the child is trying to reproduce.

- 6.7
M ... Ano ne, (12)
... Ikurachan ga sugoi ... ii mon ... Sazaesan no uchi de
agareta no.
... Sorede,
... ichiban saisho no dekgoto wa,
... Wakame no sukaato ... A! ... sukaato o yogoshite,
... nibanme no dekgoto wa',
... Ikura ga',
... machigaetta.
... Ikurachan wa / / dashite / / koto to.

... Moo hitotsu wa,
... e--to Ikura ga ... Ikurachan tachi ga',
... kasutera tabeteru toki ni,
Ikura ga koo ... buu-- to,
... kasutera o nageta toki,
... e--to ... Katsuo no mae ni aru koocha no ... ni haitchatte,
... Katsuo no kao ni kakatchatte',
... moo hitotsu no dekgoto wa',
... Wakame tachi ga',
... moo narete,
... e--to ... Tarachan to asonde te,

... Um,
... Ikura /meaning unclear/ Sazaesan's house.
... Then,
... the very first event was,
... he messed up Wakame's skirt ... Oh! ... skirt,
... and the second event was,
... Ikura,
... no, that's wrong.
... Ikura pulled out /inaudible/.
... Another thing was,
... u--m Ikura ... Ikura and everyone,
... when they were eating cake,
... Ikura like this ... whoosh,
... when he threw cake,
... u--m ... it went into the tea in front of Katsuo,
... and splashed on Katsuo's face,
... and another event was,
... Wakame and the others,
... then had gotten used to him,
... and u--m ... were playing with Tara,

The frequency of "narrator" perspective was fairly stable across the age range of children sampled, ranging from 18 to 29%, and did not differ from the frequency of this perspective in the adult narratives. However, although the frequency of narrator segments relative to the total number of story segments was about the same across the age range, the younger children had fewer story segments told in different perspectives, and so their use of "narrator" perspective was actually quite limited. In fact, none of the children under six years old used "narrator" frames at episode boundaries; instead, their use of this perspective consisted entirely of opening and closing formulas. Production of these formulas

generally increased with age, with an unexpected reversal of the frequency of closing formulas in the oldest group of children. Since the stories were begun in response to the interviewer's question, and there is no traditional introductory phrase for recounting audio-visual narratives, opening formulas were less necessary and less frequently produced than closing formulas. Table 3 summarizes the frequency of these formulas.

TABLE 3. Percentage of narratives with opening and closing formulas.

Age	<i>Opening Formula</i> "saisho/hajime" (at first, in the beginning)	<i>Closing Formula</i> "oshimai/owari/owatta" (the end/it ended)
3.10-4.8	.14	.29
5.0-5.4	.20	.30
5.8-6.0	.20	.40
6.4-6.8	.40	.50
7.0-7.4	.40	.20
Adult	.50 *	1.00

*These five adults placed the opening formula after their story setting, at the point where the videotape began, but only one child did so. The adults used the same opening formulas, but much more varied and syntactically complex closing formulas, than the children.

The six and seven year olds used at least twice as many "narrator" frames as the younger children, and were beginning to show the adult use of this perspective at episode boundaries, and not just at the beginning and end of their narratives.

A perspective which first appears in the narratives of the older five year olds is that of the "introspector." This category was used to describe all the cases in which the speaker referred to his own thoughts

or memory. While the remarks of the "introspector" seemed to be addressed to the listener, it is also easy to imagine the speaker producing these comments even if he were only talking to himself. In fact, "introspector" segments often have precisely this quality, as in example (12) above. On line 8, the child says "machigaetta" (I made a mistake), and continues his story without waiting for any kind of response from the listener. Sometimes children began their narratives in this perspective, as in the following examples:

5.11 N-- ichiban hajime nan dakke na. (13)
 M Un-- ... wakatta.
 ... Eto ne,
 ... Ikurachan ... no ne okaasan ga byooki ni natte ne,
 Uh-- what happened first?
 Um-- ... I've got it.
 ... Well um,
 ... Ikura ... 's mother got sick,

7.3 ... Are ... saisho ne, (14)
 M ... are ... yoku wakannai kedo sa,
 ... are ... m ... mannaka no hoo wa ich ... yoku shitteru;
 ... mannaka no hoo wa ne.
 ... Saisho Ikura ... are ... oba ... Ikurasan ... Ikurachan no ne,
 obasan ga netsu ... netsu de ne,
 ... byooki ni natte ne,
 ... Um ... the beginning,
 ... um ... I don't really know,
 but ... um ... m ... the middle I know the bes ... very well;
 ... the middle.
 ... In the beginning Ikura ... um ... Ikura ... Ikura's,
 mother got sick,
 ... with a fever ... fever,

None of the children under 5.8 years made this kind of introspective comment, but children of 5.8 years and older used it in about the same proportion, although in absolute numbers much less frequently than the adults. The number of such introspections increased from only four

segments in all the narratives of the children of 5.8-6.0 years to nine segments among the six year olds and fourteen segments among the seven year olds. Thus at about six years of age, the children began to refer to their own mental processes while performing the task of narration. It is not clear whether this is because the children have increased in introspective ability at this age, because they have learned that in certain task situations it is appropriate to comment on one's ongoing mental activity, or a combination of both factors.

The "real world" situation in which the narratives were produced was an interview. The "interviewee" perspective covers all the questions and comments which were addressed directly to the interviewer. In the adult narratives, this category included any questions and conversation with the interviewer at the beginning of the story concerning her familiarity with the Sazaesan series and the main characters, requests for the names of characters if these were forgotten in the course of the story, and speakers' apologies for the failings of their narratives. The abstract in one adult narrative was included in this category, since it seemed to be directed toward the interviewer, who responded with surprise that a Sazaesan program would be about language acquisition. Evaluative comments, which also seemed to be addressed to the interviewer, were included; one adult, for example, said, "Moo omoshiroi n" (It was really funny) just before the closing formula. When point of view is considered, many of the devices for "evaluation" which Labov [1972] has described can be seen as clear examples of the narrator shifting to a more interactive perspective in telling the story, seeking to evoke a response in his listener. In the children's narratives, the "interviewee"

perspective consisted largely of references to memory failure, when these were used to explain why the child had stopped telling the story, or to elicit prompting. The following example is typical:

- 5.2
M ... Ikurachan ga ne, (15)
... hikidashi hippatta.
/Interviewer: sorede?/
... Sorede,
... koko kara wasurechatta.

... Ikura,
... pulled out the drawers.
/Interviewer: and then?/
... Then,
... I forgot the rest.

The proportion of these segments was highest among the youngest two groups, although the absolute frequency of such remarks was generally quite low at all ages.

The "film-viewer" point of view was the least common perspective in the Sazaesan narratives; it was used by two of the male adults, and not by any of the women or children. The following example illustrates this point of view:

- Adult
M ... dooshite daroo tte yuu koto datta wake de ne. (16)
... Sorede ... tsugi bamen ga tenkai shite ne.
... Kondo mama to ne,
... mama to Ikurachan ga ne,
mama ga genki ni natte ne,

... The thing was, they didn't understand why (Norisuke
knew about the mischief).
... Then ... next the scene changes.
... Then the mother,
... the mother and Ikura,
... the mother gets better,

As Tannen [1980] has pointed out, telling a narrative from this perspective seems to depend on cultural factors. American speakers recounting

Chafe's film were apparently concerned to present themselves as sophisticated movie viewers, and in the course of their narratives discussed the film as such, criticizing the colors, sound track and costumes, and incorporating an account of the events into the "film-viewer" perspective in descriptions such as, "and then from a long way off ... they zoomed in on a ... /on a/ ... a ... child on a bicycle." Chafe's Japanese subjects, in contrast, almost never made such references to the film. In the Sazaesan narratives, use of the "film-viewer" perspective was limited to exactly three references to scene changes in the videotape, all quite similar to example (16) above. The videotape was never discussed from a technical standpoint, and events were never recounted within a "film-viewer" frame. This may be because these Japanese narrators were not as interested in the technical medium per se as Chafe's American subjects were. However, another aspect of the film-viewer perspective is that it gives the speaker a role in the narrative and his experience in viewing the story, rather than just the story itself, is focused. Therefore, Japanese speakers may also avoid the film-viewer perspective because they do not wish to include themselves in the story, as many Americans apparently do.

The manipulation of different points of view during a story is probably one of the more difficult aspects of narration to master. Young children at first may not be able to take more than one point of view within the storyteller role. In their Sazaesan narratives, the children tended to stay within the "direct observer" perspective and the world of the story, unless they were forced back into the "real world" by a failure in memory. The earliest voluntary elaboration of "direct observer"

narration is apparently the addition of narrative formulas, first as an opening and closing frame for the story as a whole, and later as part of the setting for new episodes. The younger children's comments about themselves or questions to the interviewer took them completely out of the "story world"; the older children, however, were beginning to integrate their own introspections into the story without suspending narration completely. At some point between seven years of age and adulthood, the children will also learn to incorporate evaluations addressed to the interviewer into their stories. The increasing ability to vary the perspectives taken during narration can be seen as one aspect of the child's developing attention to information other than events in telling stories.

Degrees of Episodic Structure

Within the framework of schema theory, the episodic structure of the Sazaesan narratives could be captured by formulating a rule such as Episode → Setting + Events. One problem which arises is that the speakers' production of episode settings was not entirely consistent. For example, certain adults apparently felt that episode settings were not necessary immediately following the story setting and within the sequence of mischief episodes. Three of the ten adults had no setting on the first episode after their introduction; since the introductions gave the necessary place and background information for the mischief episodes, a more specific setting for the first episode was not required. Similarly, six of the ten adults omitted one or more settings when presenting a series of mischief episodes. Again, sufficient background had already

been provided in the introduction. Furthermore, the adults often explicitly stated the theme that Ikura was very mischievous, and this provided an interpretive setting for mischief episodes, as the following examples illustrates.

- Adult ... Sorede ne sore wa monosugoku ne itazura ... itazura (17)
 F na no.
 Akamboo ga.
 .. Sorede hikidashi wa hikkurikaesu wa ne;
 ... moo okaasan no,
 5 ... soko no Sazaesan no okaasan no',
 ... -- ichiban ii ... kimono nanka /moo/ ne,
 ... hikkurikaeshite ne.
 ... Moo-- ... te ga tsuke/rare/nai wake.
 / / keeki o agereba,
 10 keeki o nageru wa ne.
 ... Demo-- un-- ... nan de?
 ... G genkan no kutsu wa dasu wake;
 kutsuzumi wa,
 ... un ... sukaato ni tsukechau toka ne;
 ... sugoi itazura na wake.

 ... Then he was terribly mischievous ... mischievous.
 The baby.
 ... Then he overturns a drawer;
 ... he overturns,
 5 ... the mother's,
 ... Sazaesan's mother's,
 ... uh-- very best ... kimono.
 ... There is really nothing they can do.
 Like if they give him cake,
 10 he would throw it.
 ... But-- uh-- ... what was it?
 ... He pulls out the shoes in the entrance;
 he smears shoepolish,
 ... uh-- ... on her skirt and all;
 ... he is terribly mischievous.

It seems clear that since the speaker is presenting the specific events as illustrations of the preceding and concluding generalization about Ikura's behavior, the lack of separate settings for each episode is not a deficiency. No setting is given for the first episode, which begins on line 3. The conditional on line 9 is the only setting for the next episode,

which is reduced to a single event, and the location "genkan" (entrance) at the start of line 12 is the only setting information for the following episode.

In current story grammars such omissions are accounted for by deletion rules or by placing parentheses around the optional elements in rules, as in Episode $\rightarrow$ (Setting) + Events. However, settings were truly optional only in certain, limited contexts and for a deletion rule to have any value, it would be necessary to specify the conditions under which a setting can be omitted without seriously reducing the comprehensibility of the episode. The rule for episode settings would have to be sensitive to a fairly wide range of different kinds of information which had already been presented in the story, like the theme at the beginning of example (17). Furthermore, any rule for episode settings must also be sensitive to the following context, that is, the events of the episode, since the background information which is required for any episode depends upon which aspects of a scene the narrator chooses to mention. Thus the particular type of setting which is necessary for understanding episodes based upon the same scene from the videotape varied from story to story, and there was no totally general, objective way of determining in advance what information a setting should include. As a result, a generalization providing for episode settings in these narratives would represent a typical schema for presenting information, but would not have much predictive value unless it could be formulated in a context-sensitive way.

Even when settings were provided, their adequacy varied considerably. Certain objects or events strongly imply particular times or places,

and so settings could be omitted in some cases without impairing comprehension; for example, it would be unnecessary for a speaker to introduce the location "genkan" (entrance) as a setting for Ikura's throwing shoes, since in a typical Japanese house, the "genkan" is the only place where shoes are to be found. Still, advance mention of contextual information in many of these cases, although not strictly necessary, would give the listener a better preparation for the event sequence. In analyzing the Sazaesan narratives, the adequacy of episode settings was considered case by case, and settings were categorized as "inadequate" if the speaker failed to prepare the listener for information which was presupposed in the course of the episode or if the transition between two episodes seemed abrupt, confusing, or inaccurate.

As Table 1 has shown, the children tended to include different information in their episode settings from the adults, and omitted information which the adults usually mentioned; therefore, their episode settings often did not provide adequate background for the following event sequence. Table 4 presents the percentage of narrators at each age having zero, one, or two inadequate episode settings. (Only unprompted episodes were counted in the children's narratives, since the interviewer's prompts provided setting information.)

TABLE 4. Frequency of inadequate episode settings.

Age	None	One	Two
3.10-4.8	--	.33	.67
5.0 - 5.4	.20	.50	.30
5.8 - 6.0	.56	.44	--
6.4 - 6.8	.40	.30	.30
7.0 - 7.4	.40	.30	.30
Adult	.70	.20	.10

Clearly, there was improvement over the age range of children. None of the youngest group and only two children of 5.0-5.4 years had adequate settings for each unprompted episode, but at least 40% of the children in each group over 5.8 years did have adequate settings for all unprompted episodes. It is also evident that the use of episode settings is not completely mastered in this age range; 30% of the children in the two oldest groups still had two or more inadequate settings in their stories.

However, as Table 4 shows, there were also three episode settings in the adult narratives which seemed inadequate, and one adult even had two inadequate settings within his story. That speaker gave the following transition between the last two episodes in his story:

Adult M	... Netsu ga sagatte, ... ano-- ... medetashi medetashi nan desu kedo ne. ... De okaasan wa ... wa ne, ... monosugoku ... sono Ikurachan no ... itte iru koto waku n desu tte ne, ... Her fever goes down, ... and uh-- ... everything seems fine, ... but his mother, ... says "I have no problem ... understanding what ... Ikura says",	(18)
------------	--	------

No indication is given of the temporal gap or the change in characters which occur between these two episodes. In fact, Ikura's mother is not even present in the tenth episode, but suddenly begins to speak at the start of the final episode. The only indication of an episode boundary is the switch in point of view from the "narrator" segment in the second line, where the speaker gives the traditional folktale closing formula for happy endings, "medetashi medetashi," back to the "direct observer" perspective to recount the events in the final scene of the videotape.

One of the other inadequate episode settings in the adult narratives also occurred at the same transition point. In her description of the tenth scene in the videotape, this narrator described Norisuke's apology for Ikura's mischief, and concluded the episode with the amazement of Wakame and Katsuo. At the start of her final episode, she refers to the temporal interval between the last two episodes only vaguely, with the phrase "ato de" (afterwards), and does not mention the change in characters which has taken place.

Adult F	... Dakara 'okashii naa' to omotteru no ne, futari tomo. Fushigi de ... tamaranai no ne. ... De ato de kiite miru to ne, ... ano ... "Ikurachan ga hanashite kureta" tte yuu no ne. ... So they were thinking "that's strange," the two of them. It was strange and ... they couldn't figure it out. ... And afterwards when they asked, ... uh ... (she) said "Ikura told me."	(19)
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Ikura's mother, who is not even present in the tenth episode, begins to talk without arriving "on stage" at the start of the last episode. Therefore, in evaluating the children's performance, it is important to remember that even the adults did not always present all the background information in their settings which was necessary to understand the events which follow.

On the other hand, the adults often provided much more background material than was strictly necessary for understanding the course of events easily or visualizing a scene accurately. The high percentage of episodes in the adult narratives containing each type of background information in Table 1 indicates that their settings were frequently

more than adequate. Thus there are greatly varying degrees of adequacy in episode settings, from complete omission to the production of some but not all the necessary background information, to the provision of much more than the minimal amount of context required. If it is primarily the shifts to contextual information which serve to delineate episodic structure, as in the Sazaesan stories, then the amount of information included in episode settings governs the degree of episodic structure apparent in a narrative.

Thus when a speaker omits some or all of the information necessary for an adequate episode setting, one result is that the boundary between that episode and the preceding one is not clearly marked. For instance, in example (19) above, since the time change is not clarified, and the arrivals of new characters are not mentioned, the final episode seems to be a continuation of the preceding episode. The boundary between the last two episodes of the story was much clearer when speakers explicitly stated that after a few days Taeko and Ikura came over to Sazaesan's house to visit, before recounting the events of the final episode. Thus, depending upon the number of content changes which occurred between scenes in the videotape, and the number of these which speakers chose to include in their narratives, the boundary between successive episodes could vary considerably, both at the transitions between different episodes in the narrative of a single speaker, and at the same transition point in the narratives of different speakers.

Chafe [1979] found that in the narratives produced by his subjects, there was a "continuum of episode boundary strengths." At any episode boundary there could be changes along one or more of several different

dimensions, such as space, time, character configuration, and event sequence. Changes along these dimensions tended to cluster, but did not all co-occur at each episode boundary. Furthermore, the different types of change are themselves "scalar," and Chafe [1980] points out that at any one point in a narrative there may be more or less of a change in location, in time frame, in protagonists, or in the action.

In the Sazaesan narratives the boundaries between episodes varied considerably in strength, that is, in the clarity with which they were marked. This can be demonstrated by comparing the number of dimensions along which different episodes are differentiated from one another within speakers' narratives. Of course, as Chafe has pointed out, since each type of change can vary in degree, it is impossible to quantify the amount of change at a particular episode boundary in an entirely accurate, objective way. However, a rough estimate of the strength of any given episode boundary can be made by counting the number of different types of content change which the speaker mentions. In the Sazaesan narratives, speakers also tended to use certain adverbs and conjunctions at the beginning of new episodes, such as the temporal conjunctions "sorede" (then), "kondo" (next), and a variety of other expressions, including "tateoba" (for example), and "mata" (again). These connectives, especially "sorede/soshite" (then) were not limited to the start of new episodes and could be found throughout the narratives. However, they did occur very frequently at episode boundaries, and were occasionally the only overt indication that the speaker was beginning a new episode. Therefore, the occurrence of these connectives has also been counted as a type of boundary marker at episode transitions.

Speakers also frequently experienced difficulty recalling and beginning to verbalize information at the start of new episodes, as evidenced by the long, drawn-out hesitations, such as "ano--" (uh--) and comments such as "nan datta?" (what was it?) that they produced to fill the silence at these points. In contrast with the mention of content changes or use of boundary-marking connectives, hesitations and expressions of memory failure are "involuntary" boundary markers. However, like certain conjunctions, they occurred very frequently at the beginning of new episodes, and sometimes provided the only clue that a speaker had started to recount a new scene from the videotape.

Thus in the Sazaesan narratives, there were many different overt indications of episode boundaries in speakers' narratives: their mention of changes in content, such as time, space, and character configuration; their shift to a different narrative perspective; their use of temporal conjunctions and other connectives; their hesitations; and their memory problems. Memory failure was often referred to explicitly in the narratives of the adults and older children; the younger children simply stopped narrating until the interviewer supplied a prompt. Typically, more than one "boundary" feature could be found at the transitions between episodes. As a rough measure of the strength of episode boundaries, the number of such features which appeared at the beginning of new episodes in each narrative was counted, and then the average number of features per episode boundary for each age group was calculated. Table 5 presents the average number of features used at episode boundaries by the speakers of each age, as well as the range of variation from the smallest to the largest number of features used at any one episode boundary by any of the narrators in each group.

TABLE 5. Strength of episode boundaries.

Age	Average Number of "Boundary Features" per Episode	Range of Features
3.10-4.8	2.0	1.3 - 2.7
5.0 - 5.4	2.6	2.0 - 3.6
5.8 - 6.0	2.3	1.6 - 3.2
6.4 - 6.8	2.5	1.5 - 3.1
7.0 - 7.4	3.0	1.7 - 4.3
Adult	3.2	1.8 - 5.6

As Table 5 shows, the continuum of episode boundary strengths which Chafe found in the narratives of his subjects could also be found in the Sazaesan stories throughout the age range sampled. The youngest children produced the smallest average number of markers per episode boundary, and the oldest children marked episode transitions more clearly than the children under seven years old. At least in the number of boundary markers there was not much difference between the oldest children and the adults. Even the youngest children in this sample could mark episode boundaries to some extent, and the ability to mark them more clearly increased with age.

Thus speakers could emphasize or de-emphasize the episodic structure of their stories. Clearly, in these stories episodic structure was not created by a simple, predictable translation of visually experienced scene changes into episodes. The Sazaesan narrators exercised considerable freedom in their verbalizations of the videotape, emphasizing certain boundaries by mentioning numerous contextual changes or adding their own change in perspective, and in other cases simplifying the structure of

the videotape by ignoring scene-internal changes. For example, although the adults often began a new episode by noting new characters, the arrivals which they mentioned were by no means the only ones in the videotape. Eight of the scenes in the videotape depicted character changes within, and not just at the start of the scene, but only two of these were ever mentioned in the adult narratives. Similarly, changes of location within a single action sequence and brief temporal gaps within the same episode were typically ignored. As Table 4 has shown, the children were not as consistent as the adults in mentioning contextual changes; on the other hand, they also sometimes mentioned the minor scene-internal discontinuities which adults ignored. Several times event sequences which were invariably treated as single episodes in the adult narratives were divided into two entirely separate episodes by a child narrator. Thus the children in this sample were still learning how to create a clear episodic structure for their stories by selective mention and omission of background information.

Summary and Conclusions

In general, the Szaesian narratives provide support for the story grammar generalization that narratives consist of a setting plus a series of episodes, and for Kintsch's claim that episodes begin with an "exposition." However, analysis of the Szaesian stories has pointed out certain inadequacies in current formalizations of the episodic structure of narratives. The simplicity and clarity of the rules and tree structures which are used in story grammars to represent speaker knowledge of ideal story structure do not capture the varying degrees of episodic structure

which actually occur in spoken narratives. It is especially striking that this variability should be found even in stories based upon the same input, which has already been interpreted and segmented to some extent by the film-maker, and in stories based upon a cartoon like "Sazaesan," which necessarily involves even further simplification than "live" shows. Clearly, the addition of labels such as AND, THEN, and CAUSE to tree diagrams cannot begin to capture the complexity of the relationships between episodes in the Sazaesan videotape. Although the great majority of scenes which speakers used in their narratives were related by temporal sequence, the dimension of time was only one aspect of the complex continuities and discontinuities in story content between episodes. A much more complicated means of representation than has been proposed to date would be needed to formalize the relationship between, for example, two adjacent episodes separated by a time gap but united by the presence of the same characters in the same location, or between episodes occurring in immediate temporal succession but separated by the arrival of new characters on the scene. The implications inherent in a constituent structure "tree" representation of narrative structure, namely, that episodes are non-overlapping units, equally distinct from one another, are not supported by data from narratives which adults and children actually produce.

Event sequences take up the majority of speakers' narratives, and can therefore be regarded as the basic material out of which stories are constructed. Based upon the Sazaesan narratives, it is clear that even an informal description must also specify speakers' knowledge that stories are typically constructed from certain types of background

information, including at least the following: characters, time, space, objects, goals, motivations, ongoing activities, and the narrator's own opinions, comments, and introspections. To some extent the provision of background material in a story is simply the necessary means of avoiding presupposition violation, and applies to all types of discourse. However, the adult narrators' frequent mention of this information, even when it could easily be deduced from the event sequence or was irrelevant to the plot, suggests that certain background information is part of speakers' knowledge of what stories should be like. It appears that adult narrators kept the entire set of contextual dimensions in mind in recalling the videotape for narration, and constructed their stories by verbalizing changes which occurred along these dimensions throughout the story. From a structural point of view, the observable result of this process is the "fuzzy" episodic organization of the narratives. From the standpoint of psychological processes, the apparent rules for story and episode settings fall out from an approach toward narration which takes into account the listener's needs. Thus if background information is to serve the function of helping the listener understand the events of an episode, it must be verbalized at the beginning of each new event sequence; this results in the setting-events "rule" for episode structure.

With respect to acquisition, the major difference between the structure of the stories told by the adults and by the children can be simply stated in terms of a difference in their respective story grammars: many children have not yet added the category "setting" to their set of rules for story structure. Stated differently, the children, in contrast with the adults, constructed their stories by reporting changes along

only one dimension, namely, events. In viewing the Sazaesan videotape, the children in this sample surely perceived a considerable amount of information about the other dimensions which adults typically mentioned, such as time, space, and character configuration. However, although this information may well have been included in their recall of the videotape, they did not focus their attention on it during narration. A number of factors may be responsible for this failure to narrate the contextual dimensions of the story.

In terms of plot, the type of information which appears in episode settings is not particularly important. If a child does not mention that Taeko has arrived at Sazaesan's house, the listener may be confused when she suddenly addresses Wakame and Katsuo. However, for the plot of the story, the important information is Taeko's solution to the mystery of how Ikura's father knew about his mischief. Thus setting information is not salient with respect to the plot since it does not convey the main points or themes of the story.

In the present case, the events of the Sazaesan videotape may also have been more salient to the children than other types of information because of a difference in the way they were experienced during viewing. If stories are regarded as a series of happenings or changes, those which the child actually observed in progress were usually changes in the action rather than in time, space, or character configuration. For example, in the videotape, time changes had to be inferred, and many of the changes in character configuration and location simply appeared on the screen rather than "happening." However, sometimes these changes did occur as events in the videotape, as when a new character would arrive

at Sazaesan's door, but the children still often failed to mention them. Furthermore, reasons for actions and goals were just stated rather than depicted in the videotape, but were mentioned frequently even by the youngest children.

The background information which children tend to omit thus is not essential to the plot of the story, and tends to be experienced as the visual backdrop for the main events; it is essential only from the point of view of the listener who is trying to understand the events of the story. Chafe [1980] has characterized settings as containing the kinds of information which people want to have in "peripheral consciousness." He suggests that "there are different kinds of information which peripheral consciousness 'requires,' without which the self, as the user of consciousness, is uncomfortable and disoriented"; this includes information regarding at least the following aspects of the environment: place, time, people and their salient characteristics, background activity, and perhaps the weather and any relevant props. If this information is not inferrable, Chafe states, a person will focus on it to establish it in consciousness; then it can be retained in peripheral consciousness as background information. In presenting this kind of information, Chafe claims, the narrator of a story takes account of the listener's need to have an orientation before hearing the sequence of events.

The child narrator, on the other hand, does not seem to be aware that he should inform the listener of changes in time, space, and other background dimensions. The child certainly has much of this information in peripheral consciousness as he verbalizes an event sequence, but he does not realize that he must focus on it in order to introduce it into

the consciousness of the listener. To form the intention of verbalizing this information, the child must realize that the listener needs to know it. The child may first have to develop some awareness of the function of this type of information in his own peripheral consciousness, and then learn that the listener needs to have this function filled as well. Since the production of settings thus requires that the child narrator be able to take the listener's point of view, the omission of background information from stories can be described as an "egocentric" behavior [Piaget, 1955; Brady, 1978].

In analyzing the production of settings, it seems important to distinguish between the passive, unconscious knowledge of narrative structure which a child may have, and his ability to produce this structure when telling a narrative of his own. It is quite likely that at a certain age children may "know" that stories and episodes begin with settings, and expect to hear contextual information at these points in a narrative. It is extremely difficult to measure this kind of passive knowledge in any objective way, but through a production task it is at least possible to measure the child's ability to make use of whatever knowledge he may have at a particular stage of development. Certain features of narrative structure may be more accessible to the child than others; if adult "rules" for settings are based on taking the listener's point of view during narration, acquisition of settings can be expected only when the child has attained a cognitive level where he can perform the many tasks involved in narration, such as retrieving material from memory and verbalizing it in accordance with linguistic rules, and still take the point of view of the listener. The difficulty of the task being performed

may affect the apparent egocentricity of a child; providing background information may be easier in other kinds of narrative tasks and contexts than it was for the Sazaesan narrators [cf. Menig-Peterson, 1978 and 1979].

From a developmental perspective, the child's incomplete acquisition of story and episode settings can be understood in terms of the function of the information included in settings and the cognitive decentering required before the child will seek to fill that function in his story. Table 4 suggests that there is improvement in the children's ability to consider the listener's needs around the age of five, when the percentage of children having two or more inadequate episode settings dropped from 66.6 to 30%, and children began to produce story settings. There is another increase in the number of children who provided story settings at the age of 5.8 - 6.0 years, but no further development occurs in the production of either story or episode settings through the remainder of the age range in this sample. It would be difficult to define the end-point for acquisition of settings, since even two adults occasionally failed to provide adequate episode settings. And, acquisition cannot simply be dated from the time at which the child is able to produce any settings, since almost all the children within this age range produced at least one adequate setting for an unprompted episode, yet their stories were often strikingly deficient in background information compared to the adult narratives. Production of this material is a matter of degree, and the same speaker's level of attention to contextual dimensions can vary within the course of a single narrative, and varies noticeably from speaker to speaker even among adults, who differ in storytelling ability.

Thus acquisition cannot be regarded as an event occurring at a particular time, the learning of particular pieces of information or rules about story structure. Rather, acquisition of narrative settings consists of increasing progress toward maintaining a constant, high degree of attention to the listener's needs during narration. This progress may or may not continue until the child is a good storyteller. But when the child reaches a certain cognitive level, he will be able, in general, to take the listener's point of view into consideration in telling his story; in terms of the development of narrative schemas, attaining this level constitutes acquisition of story and episode settings.

CHAPTER 4
EPISODE SCHEMAS

Common Schemas for Event Sequences

A basic assumption of schema theory is that the structural patterns formulated in story grammars are shared by members of a culture or cultures having the same narrative tradition, as speakers of the same language share a set of grammatical rules. If this assumption is correct, then we would be justified in expecting that people of the same cultural group, especially when telling a story based upon the same experience, would use the same or similar narrative schemas. The present narratives offer an opportunity to test the hypothesis that there are general rules for constructing narratives, and to compare the schemas used to organize these stories based on an audio-visual experience with those proposed for simple narrative texts. There is less pre-organization of the input in the present case than in texts, but a television story such as the Sazaesan videotape is more structured than ordinary experience, and so the similarities across speakers might be striking. The preceding chapter has examined the treatment of background information in the Sazaesan stories; in the present chapter, the main body of narrative content, the "events" section of episodes, will be analyzed.

In general, an analysis of the stories provides evidence for the existence of a set of shared organizational patterns which can be used to present the events of an episode. Many of the episodes conformed to structural schemas which have been proposed in recent research on narratives. The most common pattern, for example, was a division of the events

following the episode setting into an action or series of actions followed by a reaction on the part of one or more story characters. This schema corresponds to the simple events-reaction structure proposed by Rumelhart [1975], and usually occurred in descriptions of the mischief scenes. The following are typical examples of this structure:

Adult ... De toku ni ne, (20)
F atama ... ano ... Katsuokun to,
... sore kara ... Sazaechan no tsukue no naka o
mechakucha ni hi ... hikkakimawasu n desu ne.
... Nakami o dashite,
moo hikidashi dashichatte,
/Interviewer: Ikurachan ga./
... Ikurachan ga.
... De moo kazoku juu de,
chotto komatte ta n desu yo.

... And especially,
um ... uh ... he ru ... rummaged through the things inside
Katsuo and,
... also ... Sazaesan's desks.
... He pulled out the things inside,
and even pulled out the drawers,
/Interviewer: Ikura./
... Ikura.
... And really the whole family,
didn't know what to do.

5.8 ... soshite ne, (21)
F ... kondo ne,
... Wakamechan to ne,
Katsuokun no ne,
... toko no hikidashi ne,
... zembu ne,
... dashichatte ne,
... soshite ne,
... mata kite ne,
... soshite ne,
... ne,
... mata ne Katsuochan to ne,
... "ma ma" Wakamechan okotte ne,

... and then,
... next,
... he pulled out,
... all,

... the drawers in,
... Wakame and,
... and Katsuo's room,
... and then,
... he came again,
... and then,
... you know,
... Katsuo and,
... Wakame got angry again (and said) "oh no!"

In the children's narratives, reactions often consisted of actions taken in response to something which another character says, with the emotional reaction, or "internal response," being implied in the type of action taken, as when Ikura cries after being scolded. Another clear case of reactions which convey an internal response were apologies, as in the following example.

5.11
M ... Soshite kara ne, (22)
... eto ne,
... Ikurachan no okaasan no ne,
... e ... ga ne,
... kaze hiite te ne,
... Ikurachan wa ne,
... eto ne,
okusuri sagashite ta n da tte.
... Soshite kara ne,
... eto ne,
... eto ne,
... eto ne,
Ikurachan ne,
Wakamechan ni ne,
ayamatta no.

... And then after,
... um,
... Ikura's mother's,
... u ... mother,
... had a cold,
... and "Ikura,
... um,
was looking for medicine" she said.
... And then after,
... um,
... um,
... um,

Ikura,
apologized,
to Wakame.

Sometimes a reaction consisted of a verbal response, again with the emotions being implied by the character's words, rather than stated explicitly by the narrator, as in the following example.

- 5.10
F ... sore kara ne, (23)
... unto ... hi ... hikidashi o akete ne,
... unto ita no o ne,
... Norisukesan ga ne,
... "doomo go gomeiwaku shimashita" tte yutta no ne;
... soshite ... "doo ... dooshite ne,
... yutta no ka?" tte ne,
... Szaesian to Katsuokun ga ne,
... sore to Wakamechan ga ne,
... itta no ne;

... and after that,
... um ... Norisuke,
... said "I really ... ap ... apologize,
... that
... he opened the dr... drawers;
... then ... Szaesian and Katsuo,
... and Wakame too,
... said,
... "wh ... why,
... did he say that?";

These examples illustrate a common trend in the children's narratives; they often did not explicitly mention a character's feelings if his words or actions made them clear. Stein and Glenn [1979] found that the children in their sample tended to omit "internal responses," which were often redundant with story events.

Table 6 summarizes the frequency of the three types of reactions which occurred in the Szaesian stories: actions, verbal responses, and internal reactions. The youngest children mentioned the reactions of characters to event sequences much less frequently than children over five

years of age. The seven year olds included reactions in their narratives more often than any of the younger groups, and adults more often than any of the children's groups. There were also clear developmental trends in the proportion of different response types, with the youngest children having the highest proportion of "action" responses to events. For some reason, the older five year olds also had a high rate of "action" responses and a very low proportion of internal responses. The adults mentioned verbal and internal responses, almost to the exclusion of actions. This probably resulted from their different point of view in telling the story, since the "action" responses mentioned by the children, such as Ikura's crying or the apologies made to him, reflected their identification with Ikura. The youngest children included much less dialogue in their stories than the other groups, and this is reflected in their very low proportion of verbal reactions. The adults tended to mention internal reactions explicitly, even when they were redundant with "action" or verbal responses; the internal response in these cases served as a kind of preliminary thematic statement to be illustrated by the following reactions.

TABLE 6. Frequency of reaction types.

Age	Action	Verbal	Internal	Total Reactions
3.10-4.8	.54	.15	.31	12
5.0 - 5.4	.29	.32	.39	28
5.8 - 6.0	.41	.45	.14	22
6.4 - 6.8	.25	.46	.29	28
7.0 - 7.4	.29	.39	.32	41
Adult	.03	.49	.48	73

Reactions were the most common information provided in addition to event sequences within episodes; speakers also frequently mentioned the reasons or motivations for events. Thus a common schema for episodes was reason-events, as the following example illustrates:

- 4.5
F ... sorede ne, (24)
... sorede ... sorede ne,
... okaasan ga byooki datta kara ne,
... kusuri o ne,
... ageyoo to ... shit shite ta no.

... and then,
... and then ... and then,
... his mother was sick,
... so he was try trying ... to give her,
... medicine.

Less frequently, explanations were presented after the event or events in an episode, as in the following example:

- 3.9
M ... unto ne, (25)
... Ikurachan wa ne,
... to ne Katsuokun to ne,
... Katsuokun n
... unto ... nan dakke
/Interviewer: Katsuokun to ... Wakamechan?/
... Wakamechan no ne,
... unto ne,
... daiji na ne,
... unto koo un o ne,
... unto ne,
... so unto ne,
... hikidashi kara ne,
dashite ne,
... unto ... Ikurachan no okaasan ga,
... byooki dakara ne,
... unto kusuri o sagashite ita no.

... um,
... Ikura,
... uh Katsuo and,
... Katsuo's,
... um ... um
/Interviewer: Katsuo and ... Wakame?/
... Wakame's,

... um,
... important,
... um uh um,
... um,
... th um,
... he pulled things out,
of their drawers,
... and um ... Ikura's mother,
... was sick,
... so um he was looking for medicine.

The reason-events schema has not been described as such in story grammars, but probably overlaps to some extent with the goal-attempt schema, since internal goals may be implicit in reasons. One striking difference between the schemas involving reasons in the present narratives and the structural schemas usually described in story grammars is that in this case the order of elements in the schema is interchangeable. This probably reflects subtle differences in point of view. From the actor's perspective, formation of a goal precedes the actions performed to achieve the goal, but from the viewpoint of the observer, goals are often discovered only after events have taken place. Thus both orders occur in actual experience, which is probably the ultimate source of many aspects of narrative schemas.

One inadequacy of story grammars is their inability to deal with extended dialogue, although the dramatization of conversations among story characters is an important feature of narratives in many cultures. There was a considerable amount of dialogue in the Sazaesan videotape, and one type of subdivision within the events of an episode was created by a shift of topic during a conversation. In the next example, the events of the episode consist largely of a long conversation between Ikura's father and members of Sazaesan's family. Norisuke's words are divided

into two sections by the topic change from Taeko's recovery to Ikura's mischief on line 15:

- 6.6 (26)
 F ... shite ne,
 ... un-- "kyoo wa ne,
 ... are Ikurachan wa?" tte ne,
 ... Katsuokun to ne,
 5 Wakamechan ga ittara ne,
 ... un ... ano .. a "Wa ... Ikurachan no ne,
 ... mama wa ne,
 ... moo ne netsu ga sagatta kara" tte tte ne,
 ... sorede "mo mada ... ne,
 10 ... ano ... mendoo wa mi mirenai n ja nai n desu ka?"
 tte yuttara ne,
 ... "Ikurachan mo ne,
 ... mama no soba ni ita hoo ga ii ... ii rashii kara ne,
 ... dakara ne,
 ... ii" tte yutte ne,
 15 ... shite ne,
 ... "ouchi no ouchijuu uchijuu no ne,
 ... hikidashi akete ne,
 ... sumimasen ne" tte yutte ne,
 ... "owabi ni ... k kondo shika ... unto shikatte okimasu
 kara" tte yutte ne,
 ... and then,
 ... uh-- when Katsuo and,
 Wakame said,
 5 ... uh "where's Ikura
 ... um today?"
 ... um .. uh .. u ... he said "Wa ... Ikura's,
 ... mama's,
 ... um fever has gone down already,"
 ... and then when she said "but she still can't take care of him,
 10 yet ... can she?",
 ... he said "Ikura,
 ... seems happier with his mother,
 ... so,
 ... it's okay,"
 15 ... and then,
 ... he said "I'm sorry that,
 ... he opened all the drawers,
 ... in your house,
 ... and he said "to make up for it ... I'll sco ... uh scold him,"

Such topic shifts were common in the stories of the older children and adults who had long narratives and recounted the dialogues in detail.

Since the videotape depicted a series of visits, the final portion of an episode often consisted of a departure. A common schema for episodes, therefore, was setting-events-departure, as the following example illustrates:

- 5.10 (27)
 F ... unto ne,
 ... Ikurachan no ne,
 ... okaasan ga ne,
 ... byooki datta no ne;
 ... sorede ne,
 ... Sazaesan ga ne,
 ... koorimakura ni ne,
 ... unto ... futon o kakete ageta no ne.*
 ... Sorede ne,
 ... Sazaesan ga kaette kita no ne.
- ... um,
 ... Ikura's,
 ... mother,
 ... was sick,
 ... and then,
 ... Sazaesan,
 ... um ... put the futon,
 ... over an icebag for her.*
 ... Then,
 ... Sazaesan came home.

Sazaesan's return home at the end of the scene where she helps Taeko was not actually shown in the videotape and, like certain other arrivals and departures, had to be inferred from the re-grouping of characters depicted after a scene change. In their narratives, speakers were more likely to omit departures than arrivals, and to let the listener deduce, for example, that characters who were not at their own house at the end of the day did return home. The most frequently mentioned departure was Ikura's return home with his father at the end of the first day. This was probably

*This is a grammatical error; the child should have said, "koorimakura o futon ni kakete" (put an icebag on the futon).

because Ikura's presence at Sazaesan's house was the focus of attention throughout the first seven scenes of the videotape, and also because this departure was shown in detail in the videotape. Descriptions of the eighth scene usually included at least an arrival and a departure, and sometimes, as in the following example, had the full setting-events-departure schema:

- 6.6
F ... shite, (28)
... ano ... ne,
... "sumimasen" tte ne mukae ni kita toki ni ne,
... oyasai motte ta no ne;
... shitara ne,
... gohan no wa ne,
sakki ne,
Sazaesan ga ne,
... o ... ano ... "tanomarete ne,
... ano ne,
gohan ne,
tsukutte ne,
... tabesasete okimashita yo" tte yutte ne,
... shite ne,
... Ikurachan ombu shite ne,
kaetta no.

... and then,
... um,
... when he came to get him and said "thank you,"
... he was carrying vegetables;
... and then,
... Sazaesan,
... said "for dinner,
I already,
... o ... um ... I was asked,
... and um,
I made,
dinner,
... and had her eat it,"
... and then,
... he carried Ikura on his back,
and went home.

The episode schema most frequently described in the literature on narrative structure, goal-attempt-outcome, was extremely rare in these

narratives. It did sometimes occur when a child described a mischief episode as a search. In the following example, the child presents Ikura's goal, his attempts to achieve that goal, and the negative outcome which resulted.

- 7.2
F ... sorede ne, (29)
... Wakamechan no ne,
... hikidashi toka ne,
... akete ne,
... okusuri o ne,
... mitsukeyoo to shite ne,
... sorede ne,
... hon toka ne,
... unto dashichatte ne,
... sorede ne,
... nakat ... nakut ... nakatta no ne;

... and then,
... he opened,
... Wakame's,
... drawers and all,
... and tried to find,
... medicine,
... and then,
... uh he pulled out,
... books and stuff,
... and then,
... it wasn ... wasn ... wasn't there,

Perhaps since Ikura's attempt resulted in failure, the outcome was often omitted, and goal-attempt with no conclusion was a common schema used in describing this scene. In contrast, the adults never used a goal-attempt outcome structure for these episodes, and never mentioned Ikura's goal until the end of their stories. This was partly a difference in point of view, since none of the adults told this narrative from Ikura's point of view. The adults also apparently wanted to create suspense for their listener by presenting Ikura's real motivations as the "surprise ending."

The goal-attempt-outcome schema also was used by a few speakers in describing the eighth scene of the videotape. In that scene, Wakame

and Katsuo intend to complain to Ikura's father about his mischief and rush to the door, but upon seeing his exhausted state, feel sorry for him and give up their plan. The following example illustrates this pattern:

- 5.2
F ... dakara yoru ni natte, (30)
ojisan ga kaette kita no ne.
... Soshite ne,
... Wakamechan to ne,
... Katsuokun kan kan okoroo to omottara ne,
... unto ne,
... Sazaesan chi no tame ni ne,
... nanka ne,
... cnegi toka ne,
oyasai ippai katte kite kureta kara,
... ne,
... "kankan ni okorenakatta n da" tte.
- ... so it became night,
and his father came home.
... Then,
... when Wakame and,
... Katsuo were planning to get really mad,
... um,
he came bringing a lot of vegetables,
... and things like,
... onions and stuff,
... for Sazaesan's family,
... so um,
... "we couldn't get really mad" (they said).

Goals were also mentioned in recounting the scene in which Wakame and Katsuo tape shut their drawers to prevent Ikura from doing any further mischief. However, once again, their attempts did not bring about the desired outcome. For although the mischief was averted, this was because Ikura stayed at home on the second day. It is interesting that in this program, which is aimed at children, none of the attempts of the children in the story to achieve their goals are successful, and the desired results ultimately come to pass without the children's intervention.

The episode-internal structures which could be identified in the

Sazaesan narratives often were based directly upon the structure inherent in the scenes of the videotape, as in most of the examples cited so far. Therefore, it might appear that speakers were not actively imposing structural schemas upon their experience, but simply reproducing the schemas which were used by the creator of the videotape to organize the action. However, in selecting information for narration, speakers also sometimes created episode structures which reorganized the events actually seen in the videotape. In the first three scenes of the videotape, for example, Ikura was shown performing various mischief, and this was followed by the reactions of the older children and the adults in Sazaesan's house; thus the events-reaction schema was repeated several times. However, in their narratives, speakers sometimes re-structured these scenes into a single events-reaction schema by presenting the mischievous actions from two or more episodes, and giving the reactions only at the end of the last mischief episode described. The result of this reorganization is that one or more episodes may have only a single unit following the setting, namely, "events," as the following example illustrates:

- Adult ... un--to saisho wa, (31)
 F ... kutsu no koo ... haitteru ne,
 ... kutsu no ... todana.
 /Interviewer: Kutsubako?/
 5 ... Kutsubako.
 ... Ne,
 ... A! getabako tte yuu no ne.
 ... Kutsu o ne,
 ... zembu ne,
 10 koo-- hikidashite,
 ... de bonbon bonbon hoorinageta no.
 ... Sorede ... Wakamechan no yoofuku-- yogoshichatte,
 ... sorede ne,
 ... fuu toka ... ano ... Wakamechan to',
 15 ... sore kara Katsuokun no hikidashi zembu hikkurigaeshite',

- ... demo-- ... nooto mo nanimo ka mo zembu soto ni
chirakashita wake.
... Demo futari tomo sugoi okotte ne,
- ... U--m in the beginning,
... the shoe ... cupboard,
... that the shoes uh ... were in.
/Interviewer: The shoebox?/
5 ... The shoebox.
... You know,
... Oh! it's called the geta-box.
... He pulled out uh--,
... all,
10 ... the shoes,
and threw them around.
... Then ... he got Wakame's clothes dirty,
... and then,
... clothes and all ... uh ... he overturned all of Wakame,
15 ... and Katsuo's drawers,
... bu--t ... he scattered their notebooks and everything.
... But both of them got really mad,

This speaker begins the second episode of her narrative on line 13 of this example, postponing the reactions which occurred at the end of the first scene until she has recounted the second mischief scene.

A much less common variation of this pattern was to omit the events of a mischief episode, and to mention only the reaction. The following speaker, for example, recounted the second mischief scene in the typical events-reaction pattern, but gave only the reactions to the mischief in narrating the third scene. This example is similar to the postponement of reactions until all the mischief has been presented, but in this case the reactions span two episodes.

- Adult ... De toku ni ne, (32)
M atama ... ano ... Katsuokun to,
... sore kara ... Sazaechan no tsukue no naka o mechakucha
ni hi ... hikkakimawasu n desu ne.
... Nakami o dashite,
5 moo hikidashi dashichatte,
/Interviewer: Ikurachan ga./
... Ikurachan ga.

- ... De moo kazoku juu de,
chotto komatte ta n desu yo.
... De-- ... nan dakke na?
10 ... De-- ... yuuhan tabenagara,
... minna de "komatta komatta" tte itta ... itta n desu yo.
- ... And especially,
um ... uh ... he ru... rummaged through the things inside
Katsuo and,
... also ... Sazaesan's desk.
... He pulled out the things inside,
5 and even pulled out the drawers,
/Interviewer: Ikura./
... Ikura.
... And really the whole family,
didn't know what to do.
... And-- ... what was it?
10 ... And-- ... while eating dinner,
... everyone said ... said "oh no. What should we do."

On the ninth and tenth lines the typical episode-initial hesitating, memory failure and background information appear, but the only events which this speaker selected from the next scene for narration were the verbal reactions of the characters. Thus in this episode the events consisted of reactions, and could be regarded as a continuation of the "reaction" section which concluded the prior episode on lines 7-8 above.

The schemas for episode-internal structure which have been illustrated in examples (20-32) were very common in the Sazasan narratives at all ages; typically episode structure could be described either partly or entirely in terms of one or more of these schemas. Table 7 summarizes the relative frequencies of these most common schemas in the narratives. Each episode was categorized in terms of the schemas which it included; the categories are not mutually exclusive, and a single episode might be categorized in terms of more than one schema which it included. Episodes which did not include any of these schemas were categorized as "other." Since almost all episodes included some kind of events, the "events"

TABLE 7. Relative frequencies of typical schemas for events.

Age	Events	Reactive	Goal-Oriented	Explanatory	Events + Departures	Topic Shifts	Other
3.10-4.8	.32	.35	--	.12	.06	--	.15
5.0 - 5.4	.32	.35	.01	.11	.07	.04	.11
5.8 - 6.0	.44	.30	--	.13	.05	.06	.02
6.4 - 6.8	.37	.31	.05	.07	.08	.08	.05
7.0 - 7.4	.35	.37	.04	.09	.07	.03	.04
Adult	.14	.49	.08	.05	.09	.06	.09

category refers only to those episodes which consisted solely of an unelaborated event sequence, with no reactions, conversations, departures, goals or outcomes. In the category of "reactive" schemas were counted episodes which omitted the event sequence, giving only reactions, and any episode which included an events-reaction sequence. Goal-oriented episodes included all those having goal-attempt and goal-attempt-outcome schemas. Episodes in which reason-events or events-reason schemas occurred were categorized as "explanatory." The majority of the episodes in the stories of each age group consisted of event sequences and/or reactions. Explanatory schemas were much more common than goal-oriented ones in the stories of the children under six years of age; both types were rare in the narratives of the older children and the adults. Topic shifts did not occur in the stories of the youngest children, who tended to mention single utterances, but no dialogue. Episodes which did not include information fitting any of these categories were rare at all ages, but somewhat more common among the children under 5.4 years old.

Thus the Sazaesan narratives provide evidence for the view that speakers know a set of typical patterns for organizing the presentation of experience in narrative form; when different speakers verbalize a particular experience, the same structural patterns will recur with high frequency in a large number of stories. Each narrative schema apparently serves as a guide for content selection and verbalization, and during the course of narrating complex experiences, speakers can use these schemas as local formulas for presenting information. It is striking that these schemas are so general that they are probably not limited to a particular culture, or even to the narrative genre.

Structural Variation and Ambiguity

Although recurrent schemas could thus be identified in the Sazasaen stories, it would be misleading to suggest that they provide much support for current story grammars. In the first place, episode-internal schemas in these narratives were often different from the schemas which have been proposed in recent research. Two of the schemas, events/conversation-reaction and goal-attempt-(outcome) have also been proposed to describe episode structure in other narratives, but certain modifications of these schemas, such as the omission of "events" from the former schema and "outcome" from the latter, would not be acceptable according to story grammars. In the present sample, these omissions were obviously based upon the particular course of events in the Sazaesan videotape; since the events-reaction schema was repeated several times, either component became redundant, and since the children's attempts to achieve goals were thwarted, the negative "outcomes" could be omitted. Even the more flexible schema for episodes suggested by Kintsch [1977] was not applicable to many of the Sazaesan episodes, because scenes in the videotape reiterated complications without providing a resolution, and this was how many speakers also constructed their episodes. As Mandler and Johnson [1977] have pointed out, current schema-based models need to work out the range of acceptable variations, or "transformations," of the basic structural patterns outlined in story grammars.

Sometimes the order of elements in the schemas in the Sazaesan narratives differed from the order in story grammars. As noted above, reasons and goals could either precede or follow the main events of an episode. Sometimes children also presented the actor's goal in the middle of event descriptions, and this did not seem very different from

the comments and afterthoughts which adults often interjected within an event sequence. Other schemas, such as events-reaction, invariably occurred in the same order throughout the age range in this sample, although the reverse order has been found in other studies. For example, Stein and Glenn [1978] found that children sometimes re-ordered a reaction to come before the events causing the reaction when retelling a story from memory, as in, "Albert felt sad ... He had been caught by a fisherman." Although this seems to be an acceptable variation, it never occurred in the Sazaesan stories. Further research on the range of acceptable order variations for different schemas and the reasons for the existing orders could increase our understanding of narrative schemas. Certain orders seem to be based upon possible sequences of events in the real world; others, such as setting-events, seem to be based upon the function which particular elements serve in a story. Thus, since background information helps the listener to visualize and comprehend the event sequence, it would serve no purpose if placed in a different position; even the children in this sample never changed the order of the setting-events schema.

Another difference between the structure of episodes in the present narratives and recent proposals was that episodes in the Sazaesan stories were sometimes structurally ambiguous, and could be interpreted in terms of more than one common schema. Thus, one problem in analyzing the structure of episodes was that it was sometimes impossible to determine which schema the speaker may have had in mind. In the following example, the reactions to the events of the first episode also serve as the reason for the events of the second.

- 5.2
F ... ano ne, (33)
... unto ne,
... unto ne,
... to Ikurachan ga ne,
5 ... un ... Katsuokun no ne,
... tsukue to Wakamechan no tsukue o ne,
... eto ne,
... to itazura shite ne,
... hon toka dashichatta no ne;
10 ... sorede ne,
... unto "Ikurachan ga ne,
... to ne,
... dooshite okonnai no?" tte oneisan kiita no ne;
... soshite ne,
15 ... unto ne "hito no akachan dooshite ... / /?" ne,
... tte yuu kara ne,
... Ikurachan ga ne,
... itte ne,
20 ... unto ne,
... okashi nagetara ne,

... uh,
... um,
... um,
... uh Ikura,
5 ... uh ... messed up,
... um,
... Katsuo's,
... desk and Wakame's desk,
... and pulled out books and stuff,
10 ... and then,
... um they asked their sister "why don't you get angry
... uh,
... at Ikura?"
... and then,
15 ... um they said,
... "why are you / / someone else's baby?";
... so um when Ikura,
... said,
... "apuu,"
20 ... and um,
... threw a piece of cake,

In this example it is not really clear where the episode boundary occurs; the events of the first nine lines are taken from the second scene of the videotape, the reactions of lines 10-16 actually occurred at the end of the first scene, and the last five lines begin the events of the

third scene. In other cases, speakers preserved the actual sequence of events in the videotape more accurately and the episode boundaries were clearer, but still structurally ambiguous. In the following narrative, the reactions of Katsuo and Wakame to the mischief in one episode include the formation of the goal for their unsuccessful attempt to complain to Ikura's father in the next episode.

- Adult ... De sorede ne mata ... okaasan no ichiban taisetsu ni (34)
F shite iru kimono o yogoshichau no ne.
... De sorede sonna koto yatte te ne,
... totemo moo ... hontoo ni gyangu mitai na taifuu mitai
na kanji de ne,
... sh... un ... futari tomo okotte,
5 ... ojisan ga kitara ne,
zettai ni ... shitsuke ga warui nante yuoo to omotte ta no ne;
... de soko de ne ojisan ga ... konnichi wa tte yatte
kita n dakedo,
... sono toki ne--,
... aware ni mo,
10 .../laughing/ ooki na kamibukuro o kakaete ne,
... ironna-- ... kudamono toka yasai toka ... konna ni ano
kaish ... kaisha no kaeri na no ni ne,
... sebiro kita mama konna ni kakaeteru no ne;
... sore jaa kawai soo ni natte,
nanim o ienai mama de ne,

... And then ... he dirtied their mother's most treasured
kimono.
... And then he was doing that kind of thing,
... and it seemed just completely ... like a hoodlum or
a typhoon (had come through),
... th... um ... and they both got angry,
5 ... and thought when his father comes,
we'll definitely ... say that he's spoiled.
... And at that point his father ... came (saying) "hello,"
... but then--,
... pitifully,
10 .../laughing/ he was carrying a big paper bag,
... and various ... fruit and vegetables and things ... like
that um although he was on his way home from the
offi... office,
... still wearing his suit he was carrying all that;
... well they felt sorry for him,
and they just couldn't say anything,

If the analysis of schemas is restricted to single episodes, this passage may be interpreted as two events-reaction episodes, with an episode boundary at the seventh line; in the first episode, Ikura does mischief and Wakame and Katsuo get angry, in the second, Ikura's father arrives looking overworked and they feel sorry for him. If the analysis is permitted to cross episode boundaries, the reaction on lines 5-6 marks the beginning of a goal-attempt-outcome sequence. Another interpretation would be that the second episode represents an attempt-outcome schema from which the goal has been omitted because it is redundant with one of the reactions of the prior episode. Clearly, the choice among these different analyses will be arbitrary. Since the goal-attempt-outcome schema has been emphasized in the literature on narratives but did not occur very frequently in this sample, any event sequence which could be interpreted as an instance of this schema was so analyzed. Usually, however, schemas were analyzed within episode boundaries, and so, for example, the reaction described on lines 10-11 in example (32) was taken as the "events" of the episode which begins on line 9, rather than as part of the reactions of the prior episode.

Examples (33) and (34) illustrate that the interpretation of the schemas in one episode sometimes depended upon how the events from the prior episode were analyzed. In some cases the interpretation could also be affected by more distant information. The following episode, for example, seems to fit the typical events-reaction schema for narrating a mischief scene.

- 5.2
F ... soshite ne, (35)
... soshitara ne,
mata Ikurachan ga ne,
... unto hikidashi o akete ne,
... unto ne,
... Katsuokun to Wakamechan no ne,
obenkyoo no tokoro ne,
... yoku dashi toka akete ne,
... soshite',
... unto ne,
... itazura shita n... ta no ne.
... Soshite ne,
... unto ne,
Katsuokun to Wakamechan kankan okotta no ne;

... and then,
... and then,
again Ikura,
... um opened drawers,
... and um,
... in Katsuo and Wakame's,
study room,
... he kept pulling out drawers and things,
... and then,
... um,
... he mess... messed things up.
... And then,
... um,
Katsuo and Wakame got really mad;

However, earlier in her narrative, this child had stated that Ikura was looking for medicine for his sick mother. And so the same episode could also be analyzed in terms of a goal-attempt-outcome schema with the goal omitted because it had already been mentioned. Many of the children in this sample did not mention the reason for Ikura's mischief in their stories, but stated his goal correctly when questioned by the interviewer afterwards. Furthermore, as will be discussed in the next chapter, the children often presupposed that the hearer knew information which they had not established at the appropriate point in their stories. Even children who produced what appears to be an events-reaction episode might actually have been thinking of the events in terms of a goal-attempt-

outcome schema, but simply forgot that they had failed to present the goal. In analyzing the structure of an episode, usually only the information explicitly mentioned in that episode was taken into consideration; however, this probably did not always match the speakers' intentions.

The problem of structural ambiguity is not usually discussed in the literature on narrative schemas, perhaps because most of the stories on which these studies are based have been so simple. Kintsch [1977], however, has pointed out that "a text is always somewhat ambiguous," and that the same list of propositions may be represented by more than one type of structure.

This kind of ambiguity may be even more common in narratives based on fairly complex stories in the visual medium, which do not provide as much pre-interpretation of the events as do narrative texts. In Baggett's [1977] experiment on the perception of episode structure, for example, subjects were asked to divide a "flipbook" of 571 photos taken from the film "The Red Balloon" into episodes, and to divide each episode into exposition, complication, and resolution. There was much greater variability in the photos chosen as boundary points within than at the start of episodes. Whereas 70.6% of the subjects agreed with the modal choice for expositions which marked the beginnings of new episodes, there was only 56.4% agreement with the modal choice for complications, and only 56.9% agreement for resolutions. Thus even given explicit instructions and time to consider their decisions carefully, Baggett's subjects divided the sequence of events within episodes differently from one another.

In light of these experimental findings, it is not surprising that the narrators in the present sample, when required to produce a story with no time for reflection, tended to organize their presentation of events within episodes differently. Furthermore, in the Sazaesan videotape, the events in the mischief scenes were deliberately ambiguous, and the presentation of these scenes either as unmotivated events followed by reactions, or as unsuccessful attempts to achieve a goal, depended upon the point of view chosen by the narrator.

If this kind of structural ambiguity is typical, story grammars will have to be modified to deal with some degree of indeterminacy. Some experiences are inherently open to more than one interpretation in terms of typical schemas, and speakers do not always clearly assimilate such an experience to one schema or another; rather, the narrative they produce conveys both schemas. Apparently, different schemas are not always mutually exclusive; speakers can rearrange and combine them with greater freedom than is usually supposed.

Perhaps the most striking difference between the present findings and recent story grammars is that in most cases the schemas outlined in Table 7 did not exhaustively describe episode-internal structure. Typically, especially in the adults' narratives, episodes did not consist of a single schema. One episode, for example, might contain a series of events-reaction schemas, or combine an events-reaction schema with a goal-directed sequence or a conversation having a topic shift. Although certain schemas recurred frequently, and it was possible to categorize most episodes in terms of one or more common schema which they contained, the actual narrative categories which occurred in an episode, and the

way these were combined, varied from speaker to speaker, and even within the narrative of the same speaker. Thus it was quite rare for several speakers to agree in the number, type, and order of narrative categories chosen to verbalize any one scene from the videotape, even if many did use, for example, the events-reaction schema somewhere within their episode. Individual speakers might follow the reaction section with a conversation among the characters on a different topic, interpose an evaluation section between the events and reactions, include a departure which others failed to mention, etc.

To measure this variability, a scale was constructed, ranging from 1, which represents total unanimity in their choice of schema among the speakers who mentioned a scene, to 0, which represents total disagreement, with each speaker who mentioned a scene using a different episode schema. The measure takes into account the number of speakers who verbalized a scene, the number of different schemas used, and the number of speakers who used each of these schemas, to determine a degree of unanimity between 1 and 0 for each scene recounted in the narratives at each age group. (See footnote 1 for a description of the formula which was used.)

Table 8 (a) summarizes the degree of unanimity in organizing the narration of scenes from the videotape. Only scenes which were mentioned four or more times in the stories of three or more different age groups were considered. Using these criteria, seven scenes from the videotape were mentioned frequently enough to measure the degree of unanimity with which they were schematized. As the table shows, the variation across episodes was great; for an individual episode the difference on this scale between the age group showing the greatest unanimity and the group

with the least unanimity ranged from .10 to 1.00. It is apparent that different scenes from the videotape were more or less amenable to schematization. The final scene was verbalized with the greatest variety of different episode structures; each of the ten adults schematized this scene somewhat differently. The eighth scene, in which Ikura's father comes to take him home, was apparently much more susceptible to verbalization in terms of common schemas; each of the six children 5.8 - 6.0 years of age who included this scene used a simple "events" schema.

TABLE 8. Unanimity in choice of episode schemas.

(a) Scene	Average Unanimity in Schematizing Across Speakers	(b) Age	Average Unanimity of Speakers Across Episodes
1	.54	3.10-4.8	.49
2	.47	5.0 - 5.4	.33
3	.50	5.8 - 6.0	.52
6	.47	6.4 - 6.8	.40
8	.52	7.0 - 7.4	.53
10	.35	Adult	.39
11	.26		

Table 8 (b) presents the average unanimity of the speakers within each age group in their choice of episode schemas, considering only those episodes which four or more speakers in an age group included in their stories. No developmental trends were apparent across the age range of children, and the adults were not different from the children. The greatest difference was between the younger and older five year olds, with the former showing low agreement and the latter high agreement than

compared to most other age groups. Thus variability in schematization is apparently a stable phenomenon at all ages; given the same audio-visual story segment, speakers will organize their narrations of that material differently.

The variety of episode structures in the Sazaesan stories, and the flexibility with which the common schemas were treated by the narrators, suggest that a different approach to the concept of rules for story structure is appropriate. Certain salient organizational patterns, such as events-reaction, probably recur so frequently in stories of many different kinds that they function as ready-made formulas for understanding and verbalizing certain experiences. Yet speakers can modify existing schemas to fit new situations, as they did in recounting the series of mischief episodes in the Sazaesan videotape, and can also recall and present information which does not fit a schema exactly. Thus at least at an early stage of recall, there is considerable evidence for the accommodation of set schemas to particular experiences; speakers freely rearrange, abbreviate, elaborate, and combine the available set of simple patterns. The general picture which emerges is one of partial assimilation, that is, partial structuring of experience in terms of fixed schemas. The individual schemas themselves may simply reflect the most common, or salient, aspects of unique experiences. As Table 8 indicates, it would be impossible to propose a single schema which would account for all features of all verbalizations of even a single episode, let alone an entire narrative, which would be valid for more than a very limited number of speakers.

In discussing narrative schemas, it is important to consider the

nature of real experience, which is probably their ultimate source. As Table 8 shows, different scenes from the Sazaesan videotape were more or less amenable to schematization in terms of typical patterns. Chafe [1977a, 1977b] has emphasized the role of experience in shaping narrative schemas, and has pointed out that schemas are not just ways of organizing discourse, but also ways of interpreting the world and organizing behavior. Some cases of schematization, he states, are so obvious and salient that they actually take place during the experience itself and form part of a person's perception and memory of that experience. To some extent, this "schematizability" is culture-specific. In modern American culture, for example, Chafe has found evidence that stories of "hassles" follow a relatively fixed structural pattern across different speakers, which reflects the ordinary course of events in dealing with various types of bureaucracies in this country. Similarly, in Caddo, a North American Indian language, narratives often are constructed around a typical sequence of events comprising a "visit"; Chafe explains that the Caddo, like other American Indian groups, have traditionally spent a great deal of their time visiting, so the visit is a stereotyped pattern of behavior which has an important role in everyday life. The "visit schema" represents both the typical course of events in an actual visit, and serves as the structural pattern for many narratives. Thus depending upon the culture, certain experiences will recur so frequently, and with such similar structure, that all members of the culture will recognize an instance of that experience when it occurs, and will share a set of expectations about how they should organize a narrative based upon that experience.

Other experiences are less common, and do not fit any ready-made cultural stereotypes; the narratives recounting these experiences will show greater individual variation. Chafe [1977a] has suggested that much of visually experienced stories, like personal experiences, may remain available in largely analogic mental representations, with little pre-interpretation in terms of schemas. In these cases, the selection of schemas for presenting a certain sequence of events will occur at the time of narration, and the same speaker may choose a different schema for telling a particular story on different occasions. Thus actual experiences may be more or less interpretable in terms of pre-existing stereotypes. As a result, just as texts fitting a well-known narrative schema are easier to comprehend than ones having an unfamiliar structure [cf. Kintsch, 1977], so personal and vicarious experiences may be easier to narrate, depending upon the degree to which they conform to an expected course of events.

From the perspective of language acquisition, the child must hear the stereotyped schemas for narrating personal and vicarious experiences in his culture, and must also experience situations and events which fit existing cultural schemas to varying degrees. Depending upon the type of experience, there may be no adult model, only partial or variable models, or even more than one clear, appropriate model for narration. Perhaps in all but the simplest cases, the typical set of narrative schemas will account for only part of the structure of an experience.

In light of these considerations, it will probably be necessary to revise and limit the notion of "rules" for story structure. The structure of discourse may be less predictable than the organization

which holds at the sentence level, and the rules or structural schemas used to verbalize experience may not account for story structure nearly as exhaustively as grammatical rules can describe syntactic structure. In the Sazaesan narratives, it was not possible to fit each proposition of the story to a general structural schema; many clauses either were structurally ambiguous or occurred in unique combinations of elements from more than one different schema.

Even when narratives could be appropriately described in terms of the common schemas on a very general level, there were often further structural subdivisions not accounted for by the common schemas. In the Sazaesan stories, speakers differed greatly in the amount of information which they produced in elaborating narrative categories such as "reaction." When speakers produced many clauses in a category, it was often possible to identify more or less distinct subunits on the basis of content changes, use of connectives, and the occurrence of hesitations. In the mischief episodes, for example, the "reaction" section following the events was frequently divided into two parts, the children's reaction followed by the adults' reaction, as in the following example:

- 5.1
F ... kondo ne, (36)
... "pa pu--" tte itte ne,
akachan wa ne,
... ano ne,
5 ... kasutera nagechatte ne,
... unto ... koohii ga haha ... okao ni hanekaetchatte ne,
... sorede ne,
... Katuokun mo ne,
... unto ne,
10 ... "soo yuu toki ne,
... sonna koto ne,
... sonna ko ne,
hippatakeba ii n da" tte itte ne,
... sorede ne,
15 ... sorede ne,

"hito n chi no akachan hip... hippataku no,
 ... dame dakara ne,
 ... unto ne,
 ... ato de ne,
 20 ... Katsuokun ne,
 ... unto ... oko ... uno ... ne,
 obachan ga okotte ageru kara ne,"
 ... tte itte ne,

 ... next,
 the baby,
 ... said, "pa pu--",
 ... and uh,
 5 ... threw a piece of cake,
 ... and um ... the coffee spl... splashed in his face,
 ... and then,
 ... Katsuo,
 ... um,
 10 ... said "when that kid does,
 ... things like that,
 ... you should hit,
 ... him,"
 ... and then,
 15 ... and then,
 she said,
 ... "you can't,
 ... h.. hit somebody else's child,
 ... so um,
 20 ... later on,
 ... his mother will ... um ... get ... um,
 get angry at him,
 ... for you,"

In this example the repeated conjunctions and pauses on lines 14-15 suggest a certain degree of boundary between the two reactions. However, in general, it was difficult to determine whether the schema categories, such as "reaction," within episodes should be analyzed into more specific subunits. In the following narrative, for example, the child gives three reactions in sequence, but the evidence for subdividing this "reaction" section seems minimal.

5.1
 M ... Oniisan "kora!" tte okottara (37)
 naitchatte ne,
 ... o oneesan ga ... yutta ... yasashiku shite sa.

... When the brother got angry (and said) "hey!",
he cried,
... and the s... uh sister ... said ... "be nice to him."

Since the child connects the reactions of Katsuo and Ikura with the conjunction "-tara" ("when"), but connects these to the reactions of Sazaesan with the less specific "-te" ("and/and then"), there is some linguistic evidence for subdividing this "reaction" section into "children's reactions" and "adults' reactions." The hesitations at the beginning of the third line support this subdivision. However, as this example shows, the degree of boundary within episodes is often very slight, and there is much less evidence for these subdivisions than for the boundaries between episodes. Furthermore, since fewer speakers produced any given subunit, it was difficult to equate the content of subunits across speakers in an objective, consistent way. Therefore, no attempt has been made to analyze subdivisions of the narrative categories in terms of general schemes.

Structural Elaboration vs. Centration

Thus when speakers told long, detailed narratives, the structural schemas which were valid across speakers could not capture all the structure which was present in their narratives. Typically, schemas provided a comprehensive analysis of story structure only when each category was filled by one or two clauses, creating the kind of reduced narrative similar to those often used in experimental studies. In these cases, analyzing episode structure, even in terms of very general schemas such as events-reactions, often resulted in a clause-by-clause categorization; this was typical of many children's stories. In the following passage, for example, the child used the events-reaction schema, giving

only a single clause for each category.

- 3.11 (38)
M ... Sorede sa,
... kondo Ikurachan ga sa,
... itazura moo shite sa,
... unto sa,
okaasan ga okotta n da mon ne.

... And then,
... next Ikura,
... was really naughty,
... and um,
the mother got mad.

In many cases, episodes in the children's stories consisted of a single event, fact, or utterance which was selected from all the events in a scene for narration. Applebee [1978], who analyzed the development of children's response to stories, has also found that the preoperational children in his sample tended to focus attention on a single, striking detail and to neglect other important aspects, a phenomenon which, following Piaget, Applebee calls "centration." In evaluating stories, the six year olds in Applebee's sample often explained their like or dislike for a particular story on the basis of a single memorable incident, rather than upon the story as a whole. For example, when asked why she liked Cinderella, one child of 5.10 years answered, "She went to the ball." Applebee found that centration on a specific incident occurred at least once in 36.4% of the responses of the six year olds and 18.2% of the responses of the nine year olds.

There were many examples of centration in the children's Sazaesan narratives. In the following story, the child reduced the second mischief scene to a single action.

- 5.2
M ... Ikurachan ga ne, (39)
... hikidashi hipatta.

... Ikura,
... pulled out the drawers.

In the following case, the child mentions an arrival and a background activity in the episode setting, but recounts only one event.

- 7.1
F ... soshite ne, (40)
... ano ne,
... mata asobi ni itte ne,
... soshite ne,
... nanka o tabete te,
... "katatsumuri ga iru n deshoo" toka yutte ta no.

... and then,
... um,
... they went to visit again,
... and then,
... they were eating something,
... and he was saying something like "there's a snail you know."

The following two narratives provide a clear contrast between a centralized and an elaborated description of the same event sequence:

- 5.1
M ... Sorede ... akachan ga nanka ... unto nanka nageta no. (41)
... Then ... the baby threw something ... um something.

- 5.11
M soshite ne, (42)
Ikurachan yookan tabeyoo to shite,
... yookan ne,
... fooku de ne,
sashite ne,
Katsuokun no tokoro ni nagete ne,
... ocha haitte ne,
ocha ga ne,
... hanekaette ne,
Ikurachan no ne,
... Katsuokun no ne,
... eto ne,
kao ni bechantte atatte ne,

and then,
Ikura was going to eat yookan,
... and he stuck,
... the yookan,
... with his fork,
and threw it at Katsuo,
... and it went into his tea,
and the tea,
... splashed,
... and hit,
Ikura,
... Katsuo,
... um,
in the face,

It is true that adults also sometimes produced only one or two clauses to describe an entire scene from the videotape; however, this often occurred when they were summarizing the various mischief which Ikura performed in illustration of a general theme, as in the following example.

Adult	... Shite,	(43)
M	iroiro o oita o suru n de, sono ... hikidashi o ... ano ... nante yuu ka, genkan no kutsu no', ... ano-- ... shimatte aru toko o, zembu ... kutsu o dashicha soto e dashichattari, ... shite ano-- ... minna de ... ano hoojii-- de, ... keeki tabeyoo to omottara, sono keeki o .. minna..n nagetari, ... soo yuu no / ga /, ... koto de, ... sono ... sugoku oita o suru wake desu yo ne.	
	... and then, he did various mischief, and uh ... the drawer ... uh ... what do you call it, ... um-- ... the place where, the shoes in the entrance are kept, he pull.. pulled out all ... the shoes, ... and then uh ... when everyone, ... was going to eat cake, he th threw ... his ... whole ... piece of cake, ... and he did that sort of, ... thing, ... and um ... he was terribly mischievous.	

Thus, reduction of a complex scene to a single event can occur for different reasons, and a complete analysis should differentiate between summarization and centration. However, the children almost never stated general themes explicitly, and their reduced or centrated episodes usually seemed incomplete from an adult point of view.

Therefore, at the risk of confounding occasional summaries with centrated event sequences, a rough measure of the frequency of centration in the narratives has been taken by counting the number of episodes which consisted entirely of one or two clauses. Table 9 gives the percentage of subjects within each group who produced one or more centrated episodes, and also gives the percentage of centrated episodes across speakers for each age group.

TABLE 9. Frequency of episode centration.

Age	Percentage of Subjects Who Produced Centrated Episodes	Percentage of Total Episodes which were Centrated
3.10 - 4.8	.86	.48
5.0 - 5.4	.90	.29
5.8 - 6.0	.70	.28
6.4 - 6.8	.80	.20
7.0 - 7.4	.80	.27
Adult	.30	.04

As Table 9 shows, there was no apparent age trend in the number of children producing at least one centrated episode; however, the youngest group did produce more centrated episodes. Almost half of the episodes in the youngest children's stories consisted of only one or two clauses,

whereas the frequency of centrated episodes in the other children's stories averaged about 30%, except for the six year olds, who were the most advanced in this respect, with only 20% centrated episodes. In contrast, only three of the adults produced any centrated episodes, and these episodes constituted only 4% of the total number of episodes in the adults' stories. These findings are similar to Applebee's, and suggest that the failure to elaborate the "events" section of episodes in these children's narratives is one expression of a more general psychological phenomenon.

Interpreting centration in terms of narrative schemas, it would be possible to state, for example, that these children have learned one simple rule for episode structure, namely, Episode → Event, and that they assimilate each complex scene they recall to this schema when verbalizing a narrative. However, it seems likely that centration, or rather the psychological factors underlying centration, are responsible for the apparent structural rule, rather than vice versa. Although Chomsky [1965] stressed that generative grammars were explanatory theories, the rules such as Episode → Event which can be formulated within a story grammar do not, from a developmental or psychological point of view, explain the behavior of children who produce this kind of episode.

The production of centrated episodes and unelaborated event schemas in the children's Sazesan narratives is consistent with their treatment of episode settings. Just as the children tended to focus on the events of an episode and to omit settings, so within the event sequence they tended to mention actions and to omit the motivations and reactions of the characters. These characteristics of the children's stories indicate

the relative salience which the action of a story had for them compared to other dimensions, as well as their lack of concern for the listener's point of view during narration. In omitting information about time, place, characters and other typical settings, the children failed to provide the listener with the background information which would make comprehension easier. Similarly, the restriction of information along the dimension of "action" to event sequences without any reactions or reasons, and the centration of event sequences upon single actions, also makes the listener's task more difficult, since the probable causes, results, and detailed sequence of events must be inferred. Although this information is somewhat predictable, given the main event of an episode, a narrative which consists of a series of unelaborated events will clearly be more difficult to understand than one which regularly provides a build-up and denouement for each main event.

Summary and Conclusions

In this chapter the Sazaesan narratives have been analyzed to determine whether the adults are constructing episodes on the basis of a shared set of cultural schemas or rules for narrative structure, and to gain insight into how these rules may develop in children. A number of schemas, or organization patterns, have been identified, which seem to be shared by the adults and to have been acquired by many of the children in this sample. Yet these schemas only partially account for the structure of many episodes in the narratives, and are best considered as ready-made cultural patterns which are at the speaker's disposal during narration, to be used when appropriate even just for part of a particular

episode. They do not seem to be "rules" which the speaker must follow to produce a "grammatical" episode, nor are they even analytical tools which can describe the structure of episodes exhaustively.

The difference between the episode structure of the children's and adults' stories lies primarily in the reduction of the full adult schemas to limited, action-oriented patterns. A comparison of the child and adult Sazaesan narratives suggests that the development of episode structure consists of a progressive elaboration of the sequence of salient, observable events which form the basis of a narrative. As Table 7 has shown, there was no apparent increase in this age range in the frequency with which children provided reactions to event sequences, which was somewhat lower than the adult frequency, and also no decrease in the frequency with which they produced episodes consisting entirely of an event sequence, which was much higher than the adult frequency. This is similar to the fairly constant frequency of inadequate episode settings between the ages of 5.0 - 7.4 years. There is evidence that the children over five years were at a more advanced stage than the youngest group, since they produced a lower percentage of inadequate episode settings for unprompted episodes, and also a lower percentage of centralized episodes. Thus it appears that children first begin to elaborate event sequences, producing initiating and resulting events. The most frequently produced setting information in the children's stories, changes in character configuration, often consisted of events, namely the arrival of a new character at Sazaesan's house. At a more advanced stage, children begin to mention more frequently the events which do not involve physically apparent changes, such as internal reactions, as well as the parts of

event schemas, such as reasons, which are not actions or events.

To some extent, children's focus on the action of a story and their reduction of narrative schemas can, like the omission of story and episode settings, be viewed as an egocentric behavior. It may also be true that during narration, the child can only perform a limited number of tasks at once, and centration reflects a kind of quantitative cognitive limitation of the type often postulated to account for early phases of language development, such as mean length of utterance restrictions [cf. Bates, 1976]. As with the production of background information, the child's use of narrative schemas for episode structure is a matter of degree, rather than a simple dichotomy between acquisition and non-acquisition. Children with centrated episodes also often produced very adult-like episodes, and adults occasionally produced centrated episodes which seemed deficient, or minimally adequate. Since the production of elaborated episode structures varies even in a single speaker's narrative, apparent acquisition may result from the degree of psychological and linguistic resources available at any particular point during a narrative. Therefore, as with settings, it would be difficult to specify an age of acquisition for adult-like episode structures. Instead, there is much individual variation within each age group, with some five year olds producing narratives much more similar to the adult stories than certain seven year olds. Clearly, much more research is necessary to discover the bases of acquisition of such a complex skill as organizing episodes within a story, including the nature and frequency of exposure to different types of stories, the effects of practice and feedback [cf. Brady, 1978; McNamee, 1979], and the development of the

cognitive and social prerequisites for producing stories which are comprehensible to a listener.

FOOTNOTE

¹I am grateful to Robert Bernardo for devising the following formula to measure the degree of unanimity in schematizing episodes:

$$\log \left[\frac{(n_1 - 1)^2 + (n_2 - 1)^2 + \dots + (n_n - 1)^2}{(n_1 + n_2 + \dots + n_n - 1)^2} + 1 \right]$$

where $n_1, n_2 \dots n_n$ represent the number of speakers using each schema. The purpose of this formula is to create a scale ranging from 0, indicating total disagreement, to 1, indicating total unanimity in speakers' choices of episode schemas. One is subtracted from each value representing the number of people using a particular schema so that a single speaker choosing a unique schema will contribute nothing to the index. Each value is squared to weight a group of speakers choosing the same schema according to its size. The log portion of the formula, $\log[(x)9 + 1]$, was used in order to stretch out the lower end of the scale and to maintain its 0-1 range.

CHAPTER 5

THEMATIC ORGANIZATION

Although recent research on narratives has focused primarily upon structure, analysis of what constitutes a good story must also consider content. Story grammars are intended to represent people's knowledge of narrative structure which is independent of the particular content of individual stories. The plots of traditional folktales, or simple stories modeled after such folktales, are generally assumed to represent the typical, or ideal content of a narrative. Of course, a considerable amount of content information is already incorporated into the structural schemas for narratives which have been proposed. Even Propp's analysis of folktales, which he describes as "morphological," actually consisted of a very specific list of permissible topics and types of events, such as "villainy," "deceit," and "flight." Obviously, much of the content Propp described is limited to the particular type of folktale he examined. More recent story grammars vary in their degree of specificity, but are designed to describe narrative structure on a higher level of generality than Propp's scheme. Thus although schemas such as setting-events, or events-reaction, incorporate semantic or conceptual information about the kinds of content which are appropriate, the categories themselves are fairly abstract and general, in order to accommodate the more specific content of a range of stories which are about different things. Thus story grammars do not provide a model for content analysis beyond the general requirements of the definitions of the narrative categories which appear in the rules of the grammars.

The adult narratives in the present sample differed from the children's stories not only in structure, but also in content, that is, in the material which was chosen for inclusion in the story, and how that material was presented during the course of narration. In this chapter, the content of the Sazaesan stories will be analyzed and the treatment of themes in the child and adult narratives will be compared. Since there is no single model for content analysis which is generally accepted at the present stage of research on narratives, the discussion will draw upon prior work conducted within various different theoretical frameworks.

Van Dijk [1977] presents an approach to the analysis of the content of individual narratives in terms of the notion "discourse topic." In van Dijk's theory, "for a sequence to have a topic, each sentence ... must 'satisfy' this topic, directly or indirectly." Van Dijk states that any such passage, in which each sentence can be said to satisfy a particular topic, is "coherent with respect to topic." The actual topic itself, which van Dijk expresses as a proposition, may or may not be directly expressed in the discourse. Such sentences need not occur, but are often given to emphasize the topic. Topical sentences, van Dijk proposes, have a specific function in the cognitive processing of discourse: they either "announce" the topic of a passage or, when they appear at the end, serve to confirm the topic inferred by the reader. Topical sentences facilitate comprehension by providing the topic of a passage directly, instead of leaving the construction of the topic to the hearer/reader.

Van Dijk's notion of topic provides a useful starting point for analyzing the content of the Sazaesan stories, since it can serve as a general definition of a story theme. In the adult Sazaesan stories

explicit topical, or thematic, sentences did occur, usually at the end of story settings, presenting the theme of Ikura's mischief. Theme-introducing sentences were much rarer in the children's stories, but did occur even in the narratives of some of the youngest children. These sentences probably serve not only to facilitate comprehension on the part of the listener, but also to help the speaker focus the information which he is about to present by directing it toward a particular topic.

In the Sazaesan narratives, since topical sentences were rare, there were almost no direct references to the possible meaning or message of the story, even in the adult narratives. Therefore, it was primarily the speakers' choice of material for inclusion in the story which gives some insight into what they thought the story was about; the underlying themes must be inferred from the events and dialogue which were presented. Despite the great differences in the length of the adult narratives, almost every piece of information seemed "to the point," that is, directed toward the presentation of a particular theme. Practically the only clauses which were not obviously theme-directed were those presenting background information, which did not always contribute directly to the plot.

Each of the adult narratives could be analyzed as having four to six themes from among the following: 1) Taeko's sickness, 2) babysitting for Ikura, 3) Ikura's mischief, 4) Wakame and Katsuo's anger, 5) how Ikura's parents discovered his mischief, and 6) Taeko's ability to understand Ikura's babytalk. Of these themes Ikura's mischief was central, with the other themes leading up to or arising as a result of his mischief. All ten adults and 91.3% of the children included the mischief theme in

their narratives. Taeko's sickness and Sazaesan's babysitting for Ikura set the stage for his mischief, and all ten adults mentioned these two themes as well. Sazaesan's babysitting for Ikura was included in the stories of 78.3% of the children and Taeko's illness in 73.9%. The fact that these were "background" themes probably accounts for their omission in several of the children's narratives.

Thus the adult narratives tended to include a larger number of themes than the children's narratives. The average number of themes per story among the adults was 6.3. The youngest children averaged only 3.7 themes, and the children over five years of age included an average of 4.2 - 5.5 themes in their stories. Although the children did tend to omit certain themes, it is clear that they were able to abstract the gist of the story they had seen, and to base a verbal account upon the themes which were interesting to them.

The Problem-Resolution Schema

One of the differences among the adult narratives was the amount of information speakers gave in support of a particular theme. One speaker might present a whole series of episodes which presupposed a topic such as "Ikura was mischievous," whereas another speaker would merely state this fact with no further elaboration. A comparison of the adult and child narratives revealed that even when a child presented a large amount of information in support of a particular theme, his treatment of that theme still often seemed inadequate from an adult point of view. To specify the nature of this inadequacy, the adult stories were examined in detail to discover which information was invariably included, and can

therefore be regarded as embodying the essential features of a particular theme, and which information was omitted in the shorter adult narratives. This analysis led to a refinement of the notion of theme with respect to the Sazaesan stories, and a division of each theme into two essential components, which can be characterized as a problem and its resolution.

For example, Ikura's mischief posed a problem for Sazaesan and her family which was resolved on various levels. The simplest solution was Ikura's departure at the end of the day and/or his failure to come again on the next day. One version of this "default" solution was to state that Taeko had recovered; speakers who had established that Ikura was being cared for at Sazaesan's house because his mother was ill could simply allow the listener to infer that Ikura would stay at home if she was better, and that his mischief would no longer pose a problem for Sazaesan's family. A more explicit resolution of the mischief problem was to mention that Wakame and Katsuo taped shut their desk drawers to prevent Ikura from vandalizing their possessions. An emotional resolution could be provided by recounting the reconciliation between Ikura and Sazaesan's younger brother and sister. The ultimate solution given in the videotape was the discovery that Ikura's mischief was, in fact, a well-intentioned attempt to find medicine for his mother.

The other themes can also be analyzed as pairs of problems and resolutions. Wakame and Katsuo's anger is to some extent a problem in itself; in many stories this theme of anger was developed into a theme of controversy between the adults and children over whether or not Ikura should be punished for his mischief. The events which most clearly resolve the problem of Wakame and Katsuo's anger are the apology they

receive from Ikura's father, his promise to treat them for having put up with Ikura, and Ikura's own apology to them in the final scene of the videotape. If the story is told from Ikura's point of view, Wakame and Katsuo's anger arises from their misinterpretation of his behavior, and this problem is resolved when his true intentions are revealed in the final scene.

The background themes of Taeko's illness and Sazaesan's babysitting for Ikura clearly exhibited a problem-resolution structure. The former could be minimally covered by stating that Taeko was sick and later that she recovered; the babysitting theme could be handled by mentioning Ikura's presence at Sazaesan's house, and noting either that he went home on the first day and/or did not come back on the second.

The themes involving babytalk were complicated even from an adult point of view, and were omitted by most of the children. Although all ten adults mentioned the problem of how Ikura's parents found out about his mischief, and the resolution that Ikura told them, only 19.6% of the children mentioned this theme. Similarly, all but one adult included the theme that mothers are able to understand their children's babytalk, but only 28.3% of the children's stories did so. These themes were not only somewhat unusual, but also were presented almost entirely verbally in the videotape, and therefore were probably much less salient to the children than the mischief and anger themes, which were repeatedly enacted.

Analysis of the narrator's treatment of themes in terms of problems and resolutions provided a satisfying means of capturing the intuitively felt differences between the content of the child and adult narratives. In the adults' stories, a problem and its resolution were the two pieces

of information which were not omitted in presenting any of the six main themes. With the exception of a few descriptive details or background material used in episode settings, it was possible to identify for almost every clause of the adult narratives which problem was being assumed, illustrated, left pending, or resolved by the information being narrated. Although greatly differing amounts of information were verbalized by different speakers in support of any given problem and its resolution, no adult narrative contained passages which were not directed toward a particular problem or its resolution. The videotape itself could easily be analyzed in these terms; in fact, it seems likely that the problem-resolution schema was a basic organizing principle for the creator of this story. This schema was probably also an important factor in the adult's processing of the videotape, as well as in their recall of it for narration. Clearly, the ability to recognize and utilize this schema would be a tremendous help in comprehending and later retrieving and verbalizing this story.

The notion of a problem-resolution schema in narratives is, of course, not a new one. In fact, it is one of the basic features of the various structural schemas for narratives which have been proposed, such as the problem-solving episodes of Rummelhart [1977], the complication-resolution structure proposed by Labov [1972] and by Kintsch [1977] and van Dijk [1977], and corresponds roughly to the goal-attempt-outcome schemas of Mandler and Johnson [1977], Thorndyke [1977], and Stein and Glenn [1979]. However, the Sazaesan story cannot be neatly divided into a single overall problem-resolution structure, nor does each individual episode fit this pattern. Rather, from a structural point of view, the

story is a series of episodes corresponding to scenes in the videotape, and the problems and resolutions which occur within the plot cross-cut this episodic structure, occurring within a single episode, across an episode boundary, or with a gap of several episodes between problem and resolution. At least for this particular story, the notion of a problem-resolution schema seems most applicable to an analysis of narrative content rather than structure.

The treatment of the problem-resolution schema which seems to be closest to the one required for the Szaeasan story is to be found in the work of Propp. In his analysis of Russian fairy tales, Propp pointed out that there is often a relationship between two events in a story which are dependent upon one another and form a pair, both halves of which must be present if the story is to be complete. He found that many of the "functions" which constituted his basic units of analysis were arranged in such pairs; for example, prohibition-violation, struggle-victory, pursuit-deliverance. All of the tales which Propp examined proceeded either from an initial act of villainy, such as the kidnapping of the Czar's daughter, or from a situation of insufficiency or lack which leads to a quest, as when the hero lacks a bride. These functions are morphological equivalents, and one or the other is obligatory for all tales; Propp states that, "... a tale (skazka) may be termed any development proceeding from villainy or a lack ... through intermediary functions ... or to other functions employed as a denouement." The peak of the narrative constitutes the other half of the pair given at the start of the tale; in this function the initial misfortune or lack is liquidated, as when the kidnapped person is rescued, or the hero finds a

bride. Although the overall structure of the folktale consists of a problem and its resolution, there may also be other mutually dependent pairs of content in any particular folktale.

Propp treated this correspondence between pairs of functions as a structural matter, but it can also obviously be regarded as a question of content selection. That is, if a storyteller produces the first part of such a pair, he must remember to produce the second at some later point, and if he has in mind a particular resolution as the climax of the story, he must prepare the listener by presenting the problem early on in the story. Thus the particular content of individual stories may be organized around two such peaks of salience, which together constitute the minimal necessary information for expressing certain events and the themes underlying them. In a plot such as that of the Sazaesan story, the contribution of any piece of information to the problems and resolutions in the story line can be taken as a measure of relevance. Irrelevant information can be defined as information which does not play a part in establishing or resolving any of the problems in the plot, or which is not required by the structural schema for narratives, such as settings or opening and closing formulas.

In the children's Sazaesan stories the problem-resolution schema was the major source of content selection in most cases. In fact, some of the shortest and most primitive narratives were based exclusively on this principle, which seems to override all other considerations as the child leaps from the statement of one problem to its resolution, ignoring all the material which came in between the two in the videotape. In the following narrative, for example, lines 1-7 describe the sixth scene in

the videotape, and lines 8-14 recount the solution to the mischief problem which occurred in the ninth scene.

- 4.5 ... ano ne, (44)
M ... Ikurachan ga ne,
okusuri o ne,
... hikidashi kara dasoo to shita no.
5 ... Ano soshite ne,
zembu ne kimono ya ne,
... oyoofuku o dashichatta no.
... Katsuokun wa ne,
... ano ne,
10 Wakamechan wa ne,
... soshite ne,
... gamu teepu o hatt oite,
... Ikurachan ga itazura shinai yoo ni,
... shirushi o tsuket oita no.

... um,
... Ikura,
tried to take,
... medicine from the drawers.
5 ... um then,
he pulled out kimonos,
and clothes and everything.
... Katsuo,
... um,
10 Wakame,
... then,
... stuck on tape,
... so that Ikura wouldn't mess things up,
... they put on signs.

Another child in the youngest group focused on a different problem, Taeko's illness. She summarizes Ikura's search for medicine in the first eleven lines of her story, and then leaps to the tenth scene of the videotape, in which Taeko's husband tells of her recovery.

4.6

F

(45)

... ano ne,
... unto ne,
... Ikurachan ga ne,
... unto ne,
... ippai ironna mono dashite ne,
... unto ne,
oku ... okaasan ga byooki dakara,
... okusuri sagasoo to shite ne,
ironna mono dashita n dakedo ne,
... unto ne,
mitsukannakatta kara,
... unto ne,
... un un ... ano ne,
... moo ne,
... unto okaasan no byooki naotta kara ne,
... ano ne,
... ano unto ne,
... ano ne,
... ano ne,
... unto ne,
... naotta kara ne,
... unto ne,
... Ikurachan no otoosan ga ne,
... "okaa ... mama no ... okaasan no byooki ga naorimashita"
... tte yutte ne,
... yutta no.

... uh,
... um,
... Ikura,
... um,
... pulled out lots of things,
... um,
med ... his mother was sick,
... so he tried to look for medicine,
and he pulled out different things,
... but um,
he didn't find any,
... so um,
... um um ... uh,
... already,
... um his mother got better,
... um,
... uh um,
... um,
... um,
... uh,
... she got better,
... so um,
... Ikura's father,
... "moth... mommy ... mother is better" he said,
... he said.

The generality and significance of this problem-resolution schema is shown by its appearance in the fantasy narratives of children at a very early age. It occurs in the Pitcher and Prelinger [1963] collection of fantasy narratives of American children between two and seven years old, and constitutes the pattern of the example from this collection analyzed by Harvey Sacks [1972]: "The baby cried. The mommy picked it up." Botvin and Sutton-Smith [1977], studying the narratives of 80 American children between three and twelve years of age, define fantasy narrative as "fictional narratives embodying the resolution or attempted resolution of some central conflict or concern." In their study the children were asked to make up a story, which could be as long as they wished, about anything that interested them, and were told to be as creative and original as possible. Their findings reveal that the ability to create stories embodying the problem-resolution schema developed at about the same age as the youngest Sazaesan narrators. Children under three tended to form primitive narratives by stringing together a series of proper nouns without any statement of action or events, but with merely the implication of action; slightly older children stated events and actions explicitly, but simply strung them one after another with no relationship between events. At about four or five years of age, the

children began to organize their stories around a central conflict, usually a lack or villainy, and produced narratives that were not static descriptions, but involved a progression of events from an initial to a final state. Thus at this point simple narrative structures based on a single problem-resolution pair emerged. The Sazaesan narratives are consistent with this finding, since the youngest children, aged 3.10-4.5 years, were familiar enough with the problem-resolution schema to recognize it in the complex story which they saw, and to make it the basis of all, or at least part, of the narratives which they told.

Treatment of the Problem-Resolution Schema

Although in many cases the children used the problem-resolution schema successfully, a major difference between the content of the adult and child narratives was that the children often failed to resolve the problems which they presented in the course of their narratives. Children would say, for example, that Taeko was sick but never mention that she later recovered, that Ikura was being cared for at Sazaesan's house but not that he ever went home, that Ikura's parents knew about his mischief but not how they found out, etc. Thus the children's narratives often seemed inconclusive and lacking in cohesion, as various problems were raised and left pending. There was no improvement across the age range in this sample: 30 - 40% of the children in each age group produced at least one problem which was never resolved.

The failure to resolve problems seems to be primarily a question of memory, since there was sometimes a large gap with much intervening material between the statement of a problem and its resolution.

Difficulty with this feature of problem-resolution pairs is apparently not limited to children. Propp has discussed the gap which often separates the problem from its resolution in the fairy tales which he analyzed, and has pointed out that this distance between the two halves of a pair can result in a discrepancy between the beginning and the ending of a story, since the narrator may not recall the initial problem by the time he reaches the resolution. Thus Ivan may set out after a steed at the start of a tale, but return with a princess at the end. Sometimes, Propp found, a particular problem is never resolved in the course of a tale; in one story the enchantment of a boy is not followed by any breaking of the spell, and he remains a little goat for life. Such cases are paralleled in the Sazaesan stories by the children's failure to resolve certain problems raised in the beginning of the story.

The significance of the gap between problem and resolution can be shown by comparing the frequency of unresolved problems in the case of Taeko's illness and Ikura's presence at Sazaesan's house, which were raised in the beginning of the videotape but not resolved until the end, with the problems of how Ikura's parents found out about the mischief or how Taeko is able to understand Ikura, which were resolved immediately after they were brought up. Eleven children failed to resolve the former two problems, but no child presented a problem without a resolution for the two problems which were resolved with no gap in the videotape.

A more striking and prevalent deficiency in the children's narratives was neglecting to present the problems which were later resolved in the story, resulting in the use of unjustified presuppositions. For example, many children throughout the age range mentioned that Ikura's

mother got better near the end of the story without having said that she was sick, or that Ikura went home without having said that he was at Szaesan's house. Table 10 shows the percentage of subjects at each age who had presupposition failures in their narratives.

TABLE 10. Percentage of narratives with 0 - 3⁺ presupposition failures.

Age	0	1-2	3+
3.10 - 4.8	.17	.83	0
5.0 - 5.4	.20	.70	.10
5.8 - 6.0	.44	.67	0
6.4 - 6.8	.30	.50	.20
7.0 - 7.4	.30	.60	.10
Adult	1.0	0	0

This kind of presupposition error occurred in the narratives of 67 - 83% of the children in each age group, with no indication of any improvement in this age range. Thus in recalling material from the videotape for narration, it was obviously much more difficult to plan ahead and verbalize information that would be presupposed at some later point than to recall which problems that had already been presented were awaiting resolution.

Furthermore, recall of problems at a point well in advance of their resolutions sometimes required the child to attend to background information, which had not been emphasized in the videotape. Thus Taeko's illness, for example, is merely mentioned in passing when Szaesan is trying to calm Wakame's anger. To present this information early in the story requires that the storyteller consider which information the listener needs to know in order to understand the story, and not simply

which information he finds particularly interesting. To avoid unjustified presuppositions, the child must plan the outline of the plot from the listener's point of view from the very beginning of his story.

Botvin and Sutton-Smith [1977] have also found the distance between problem and resolution relevant to the analysis of children's stories. After the emergence of single problem-resolution stories at around four to five years of age, the next developmental stage in their data was the interposition of material between problem and resolution, which appeared at around six years of age. Seven year olds began to conjoin two or more problem-resolution pairs, but with a loss of the action elements intervening between problem and resolution which had emerged at the prior stage of development. At the next level, narratives were again expanded by placing material between problems and their resolutions. At around eleven years of age, children could embed one problem-resolution pair within another, and in the final stage of development, around twelve years of age, multiple embedding of problem-resolution pairs appeared. Botvin and Sutton-Smith note that embedding one such pair within another places "a greater demand on the storyteller's cognitive capacity" since the child must be able to "construct a mental image of the entire narrative" before he begins telling it. As the number of intervening sub-plots increases, they claim, each intervening sequence places "an increased burden on memory." The difficulty which the Japanese children experienced in producing both parts of a problem-resolution pair, and especially in maintaining a gap between the two, seems to be consistent with Botvin and Sutton-Smith's findings.

The Sazaesan story included several, often overlapping, problem-

resolution pairs. Although the story does not lend itself to a direct comparison with Botvin and Sutton-Smith's analysis in terms of conjoining and embedding, it is clear that as the number of problem-resolution pairs in the children's Sazaesan stories increases, it will be increasingly difficult for them to plan in advance which information the listener will need at some later point, while also keeping in mind which problems still need to be resolved. There was some tendency for the number of problem-resolution pairs per story to increase with age. Table 11 presents the percentage of children in each group who produced different numbers of problem-resolution pairs. The majority of the children at each age gave from one to three pairs. One or two of the children in each group under 6.0 years failed to produce any complete problem-resolution pair, and the four children who produced five pairs were all over six years. In comparison, three adults produced three or four problem-resolution pairs, while the rest had five or more.

TABLE 11. Percentage of narrators producing different numbers of problem-resolution pairs.

Age	0	1-2	3	4	5	6
3.10-4.8 *	.33	.50	.17	0	0	0
5.0 - 5.4	.10	.60	.20	.10	0	0
5.8 - 6.0 *	.22	.44	.22	.11	0	0
6.4 - 6.8	0	.50	.30	0	.20	0
7.0 - 7.4	0	.60	.30	0	.10	0
Adult	0	0	.10	.20	.10	.60

*One child had been eliminated from each of these groups: a boy of 3.11 who did not see the entire videotape and a boy of 5.9 who misinterpreted a prompt and jumped to the end of his story.

In many cases children seemed to be aware that treatment of a particular theme required presentation of both a problem and its resolution, but had trouble timing this presentation. The youngest children, as in examples (44) and (45), would focus on a certain problem and proceed immediately to its resolution, skipping most of the intervening plot. Having presented the resolution, which usually was based on one of the later scenes in the videotape, children sometimes seemed confused, as if they were aware that there was more to the story, but were unable either to backtrack and fill in the parts that they had omitted or to proceed to the end of the story. Prompting scenes from an earlier point in the videotape than where a child had stopped was generally unsuccessful in eliciting any more than brief answers.

In other cases a child would not remember to present a particular problem until he was at the point of resolving it. In the following example, the child did not mention that Ikura's mother was sick until she was giving the explanation of his mischief at the end of the story.

- 6.7
F ... Sorede ... Ikurachan no ne okaasan to issho kita no. (46)
... Soshite ne,
... ano ne ... Ikurachan ga ne,
... ano ... okusuri"o ne,
... okaasan ga byooki datta kara okusuri o ne,
... ano sagashite ta n da" tte.

... Then ... Ikura came with his mother.
... Then,
... um ... Ikura said,
... um ... medicine",
... my mother was sick
... so um I was looking for medicine".

In some cases a child gave the resolution too early, before the problem had been clearly presented as such. Then, as in the following example, he might repeat the resolution in its correct place.

- 6.4 (47)
 F mata kite ne,
 ... sorede ... akachan ga ne,
 ... "happa no ue ni ne,
 ... katatsumuri ga iru" tte,
 5 sono okaasan ni oshiete ageta no ne;
 ... sorede ... demo ne,
 ... unto okaasan ja nai kara ne,
 ... mada ne,
 ... Katsuokun tachi shiranai no;
 10 wakaranai kedo ne,
 ... sorede "dooshitara wakaru no?" tte kiita no ne;
 ... soshitara "okaasan ja nai to ne,
 ... wakaranai" tte itta no.
- they came again,
 ... and then ... the baby,
 ... told his mother,
 "there's a snail
 5 ... on the leaf;"
 ... and then ... but,
 ... um they were not his mother,
 ... so still,
 ... Katsuo and the others didn't know;
 10 they didn't understand,
 ... but then "why do you understand?" they asked;
 ... and then she said "if you're not his mother,
 ... you won't understand."

Since the narrator explains why the children don't understand Ikura in lines 7 - 10, the listener knows the answer to the problem when it is presented in line 11, and Taeko's words become anti-climactic. In this case, if the narrator is to preserve the suspense, he must present the information in the order in which he himself became aware of it when viewing the videotape, rather than taking an "omniscient" viewpoint. Only by withholding information revealed at later points in the videotape can the narrator recreate the suspense he originally experienced for his listener.

Clearly, this involves a sophisticated manipulation of points of view during narration, which was beyond the ability of many of the children within this age range. A striking point of comparison between

the children and the adults was their treatment of Ikura's search for medicine. In the adult narratives this was never mentioned before the final scene, when his real intentions are discovered through Taeko's ability to understand his speech. This version necessarily takes the viewpoint of Sazaesan and her family, who did not understand Ikura's motivation until the end; this was also the viewpoint which the narrators experienced when they originally saw the videotape. The adult narrators preserved the suspense and recreated this viewpoint by giving this information only as the ultimate resolution to the mischief problem. The child narrators, in contrast, frequently took Ikura's point of view, giving his motivation at the same time that they recounted his actions. Between 20 - 50% of the children in each age group told the early mischief scenes either entirely from Ikura's point of view, as in examples (44) and (45), or from Wakame and Katsuo's viewpoint as well, as in the following example:

- 5.2
M ... de', (48)
... Ikurachan ga',
... ga ... eto ... Sazaesan chi no oniisan ni',
... eto ... benkyoo ... no ... a ... eto ... hikidashi akete,
... okusuri sagashite ta no.
... No koto wakannai de,

... and,
... Ikura,
... Ikura ... um ... opened Sazaesan's brother's,
... um ... study ... uh ... um ... drawer,
... and he was looking for medicine.
... They didn't know that,

Thus, point of view can interfere with problem-resolution organization by leading the child to reveal characters' intentions or knowledge prematurely.

At times children even presented events which had not been seen

in the videotape at the point when Ikura must have performed them. In the following example, the child states that Ikura told his mother about the mischief at the end of the first day, rather than saving this information until Sazaesan's family discovers it. Therefore the information that Taeko knows about the mischief, which comes on the last line, fails to present a problem to the listener, who has already been told how she found out.

- 5.2
M ... sorede Ikurachan no ouchi e kaetta no. (49)
... Sorede',
... Ikurachan no ohana ... Ikurachan ... no ... Ikurachan wa ne,
... Tarako obasan ni hanashita no.
... Hiki ... dashi hippatta koto.
... Sorede',
... netsu ga sagat ... mata Norisuke ojisan ga ne,
... kita no ne;
... sorede ne,
... Ikurachan ... ja nakute ne,
... e ... Tarako obasan no netsu ga ne,
... byooki datta no ne;
... sorede ne,
... netsu mo saga ... sagatte',
... Tarako obasan wa',
... Ikurachan no ... akachan no hanashi o ... o sh ... sh
shitteru no ne;

... and then they went home to Ikura's house.
... Then,
... Ikura's stor ... Ikura ... 's ... Ikura,
... told Mrs. Tarako.
... That he pulled out the drawers.
... Then,
... her fever went dow ... Mr. Norisuke,
... came again;
... and then,
... not Ikura,
... uh ... Mrs. Tarako's fever,
... she was sick;
... and then,
... her fever wen ... went down,
... and Mrs. Tarako,
... kne ... kne ... knew Ikura's ... the baby's story.

This child was having considerable difficulty presenting information in the right order as he dealt with two different problems and their resolutions at the same time.

Sometimes a child was obviously aware of the desirability of maintaining suspense by withholding certain information, but still would reveal the information too soon, eliminating the necessary gap between problem and resolution. In the following example the child tries on lines 8-10 to build up suspense, but then almost immediately reveals Ikura's real motivation.

- 6.6
F ... ano ne, (50)
... Szaesian de ne,
... Ikurachan ga ne,
... saisho ano ... kutsu o ne,
5 ... kutsubako no ne,
... naka ne,
... sagashite ite ne,
... nani o ne,
... sagashite ita ka wa ne,
10 ... mada wakannai n dakedo ne,
... Ikurachan ga ne,
... zembu o ne,
... kutsu toka o ne,
... hoorinagete dashite ita no ne.
15 ... Sorede ne,
... sorede ... eto ne,
... nande ka tte yuu to ne,
... Ikurachan no ne,
... okaasan ga ne,
20 ... ano ... byooki na no ne;
... sorede,
... netsu o dashite ne,
... ouchi de nete n no ne;

... um,
... at Szaesian's,
... Ikura,
... in the beginning um ... the shoes,
5 ... was searching,
... inside,
... the shoebox,
... and you don't know yet,
... what,

10 ... he's looking for,
... but Ikura,
... pulled out and threw around,
... all,
... the shoes and things.
15 ... Then,
... then ... um,
... the reason is,
... Ikura's,
... mother,
20 ... um ... is sick;
... and then,
... she has a fever,
... and is sleeping at home;

There were timing problems in the narratives of 30 - 40% of the children through six years of age; however only one of the seven year olds had a problem with timing.

In general, the adults did not have timing problems with the Sazaesan story. However, building suspense and withholding information (especially the punch lines of jokes) is a narrative skill which sometimes even adult storytellers have not perfectly mastered. Differences in the success of the adult Sazaesan narratives seemed to depend largely on the amount of information presented in support of a particular theme, especially the amount of material given in establishing the problem which is later resolved. For example, most adults built up to the babytalk theme with the apology from one of Ikura's parents for his mischief and the amazement and confusion of Sazaesan's family, who could not understand how they knew about the mischief. Thus considerable suspense was achieved before the revelation that Ikura had told his parents. This revelation then builds up to the problem of how they can understand Ikura. In contrast, one of the adults simply began the final scene with a blunt statement of the problem, namely, that Taeko says she understands Ikura.

- Adult ... De okaasan wa ... wa ne, (51)
M ... monosugoku ... sono Ikurachan no ... itte iru koto
... waku n desu,
... hoka no kodomotachi wa,
zenzen wakannai.
... Hoka no hitotachi wa wakannai n desu.
... Soshite,
... saigo ni itta no wa,
... ano ... sa,
... Wakame ... ga ne,
... "dooshitara kodomo no ... koto ga waku no?" tte kiita no.
... Tara 'mama ni naru koto yo' yuu.
- ... And his mother,
... (says) "I have no problem ... understanding what ...
Ikura ... says",
... the other children,
don't understand at all.
... Other people don't understand.
... Then,
... at the end what she said (was),
... uh,
... uh ... Wakame,
... asked "how do you understand children's words?"
... Then she says "you have to be a mother."

Thus although the adults did not actually omit problems or resolutions, they showed different degrees of skill in using the problem-resolution schema to create a dramatic narrative.

Irrelevant Story Content

Although the problem-resolution schema was usually the major criterion for content selection in the stories of both adults and children, the children sometimes presented irrelevant information as the main point of an episode. According to the definition of relevance which was proposed at the beginning of this chapter for the Sazaesan stories, relevant material contributes in some way to the establishment of one of the six main problems of the story or to their resolution. The adult narratives contained information which did not support any problem-

resolution pairs, but this information was always clearly part of a setting, or merely a brief descriptive detail subordinated to the main events. In the children's narratives, however, irrelevant activities and events were sometimes the only information from a particular scene in the videotape which was chosen for narration.

These irrelevant segments in the children's stories featured two types of information. Sometimes interesting or unusual information which had been visually focused by means of close-ups in the videotape was presented as the main or only point of an episode, such as the snail on a leaf in the garden in the final scene, or the image of Ikura's father, who at the end of the first day arrives loaded down with groceries, a very unusual state for a Japanese man. In other cases the children focused on familiar, everyday activities from their own lives which were depicted in the videotape, such as playing, eating, sleeping, doing household chores, rather than upon the main events. In the following example, lines 1-5, 6-7, and 8-10 are based on three different scenes from the videotape, each of which included relevant thematic information, as well as the details which this child chooses to focus on.

- 6.6
F ... Sorede ne, (52)
... sorede ... nanka ano Sazaesan no ne,
... o ano okaasan ga ne,
... ano nanka osara toka ne,
5 ... odaidokoro de aratte ita no ne.
... Sorede Wakamechan ga ne,
... odaidokoro ni kite ne,
... "nanka otetsudai suru mono nai?" tte itte ne,
... sorede,
10 ... un soshitara ne,
... sorede ne,
... sorede ne,
... sorede ... nanka Ikurachan wa ne,
... ofuton ni haitte nete ne,
15 ... sorede ... ano ne,

... Ikurachan no ne otoosan ga yoru ne,
... nanka ... okaimono no fukoro o ne,
... sagete ne,
... nanka meron toka nanka katte kita no ne.

... Then,
... then ... um uh Szaesan's,
... m um ... mother,
... um was washing dishes and things,
5 ... in the kitchen.
... Then Wakame,
... came into the kitchen,
... and said "isn't there anything I can do to help?"
... and then,
10 ... uh and then,
... and then,
... and then,
... and then ... um Ikura,
... got into bed and slept,
15 ... and then ... uh,
... Ikura's father at night,
... came carrying,
... uh ... a shopping bag,
... with melons and things that he bought.

This kind of focus on the "homey," familiar activities of the children's own lives, as well as any unusual or interesting departures from these activities, decreased the degree of thematic cohesion in the narratives of the children as compared to the adults, except for the stories in which playing and eating were made the major themes, with problems and their resolutions being largely ignored.

From 40 - 66.6% of the children in each group through 6.8 years of age produced a total of eight to twelve irrelevant segments per group, ranging in size from a single clause within a larger episode to three full episodes, as in example (52) above. However, only 30% of the seven year olds had irrelevant information in their narratives, and each of those children had only a single irrelevant segment. Thus there may be some indication of progress at the upper end of this age range toward the adult standard of content selection, in which salience is identified

with thematic relevance.

These irrelevant segments were usually simply descriptive stagements and were not presented in a problem-resolution format. The following example is from the narrative of a child whose entire story was based upon the theme of eating. The inconclusive, irrelevant quality of the final two lines is typical of the narratives in which children focused on the snail without indicating any relation between this information and the other themes around which their story had been constructed.

- 5.10
F ... sore kara mata asa ne, (53)
sorede ne,
issho ni gohan tabete ne,
... sore kara ne,
... Wakamechan tachi wa ne,
... eto ne,
mata gohan tabete te ne,
... Tarachan tachi sakki ni tabeta kara ne,
... eto ne,
asonde te ne,
... happa no tokoro ni dendenmushi ga nokkatte ta no.

... after that again in the morning,
and then,
they ate together,
... and after that,
... Wakame and the others,
... um,
were eating again,
... and Tara and the others had eaten first,
... so um,
they were playing,
... and there was a snail on the leaf.

Some children did impart a certain degree of interest and suspense to their final episode by giving it a problem-resolution structure. In the following case, Ikura says that there is a snail on the leaf, and the problem which has to be resolved is whether or not he is correct.

- 5.1
F ... Ikurachan chi no uchi de ne, (54)
... oniichan to oneechan to okaasan ga ne,
... agatte ta no ne;
... sorede ne,
... Ikurachan ga ne,
osoto ni ne,
dete ne,
... "dendenmushi ga ita yo" nante okaas ... jibun no
okaasan ni itte ne,
... oneechan to oniichan wa ne,
mi ... osoto ni mi ni itta n no.
... Hap ... sore kara happa no tokoro ni atta no ne;
... sore o ne,
... akete mitara
"hontoo da ne" ... nante yutte ne,
... sore kara ne,
... dendenmushi ga ita no.
- ... at Ikura's house,
... the brother and sister and mother,
... had come in;
... and then,
... Ikura,
... went,
... outdoors,
... and he said "there's a snail" to his moth ... his own mother,
... and the brother and sister,
loo ... went outside to look.
... The lea ... after that it was there on the leaf;
... when they opened
... it,
"it's true" ... they said,
... and after that,
...

But although these children realized that the snail scene could be structured in a problem-resolution format, they apparently did not realize that this scene had no meaning for the story except as an illustration of Taeko's ability to understand Ikura's babytalk. Thus although knowledge of the problem-resolution schema may help children to recognize the crucial aspects of a theme which must be verbalized, selecting material which fits this schema does not automatically provide children with relevant information.

Rather, the selection of appropriate content seems to be based ultimately upon the narrator's understanding of what a good story should be about. It seems obvious that a good story should be about something interesting; Kintsch et al. [1977] state that the complication of an episode "must provide something interesting or remarkable" involving "an element of surprise" in the shift from the exposition. Clearly, there was a difference between what the adults and children regarded as "tellable" in the Sazaesan videotape. In the Sazaesan story, the surprise was contained in the themes of discovery and Taeko's ability to understand Ikura, and the adult perception of these themes as the message of the story is reflected in the title of the videotape, "Babytalk." Although the version of the story that the adults saw did not include this title, they apparently all shared the understanding that this was essential to the meaning of the story, since all included at least one of the two themes involving babytalk. (The children did see the title, but most were probably unable to read the Chinese characters.) The story of a baby doing mischief and annoying people would have little interest for an adult without the unusual "twist" of the baby having a secret purpose which he can only communicate to his parents. To children between 3.11 and 7.4 years, however, a younger child's mischief is interesting in itself, perhaps because it reflects sibling conflicts which are important in their own lives. Thus a major difference between the adult and child narratives was that the children do not seem to believe that a good story must depart significantly from the ordinary course of daily events.

There is considerable evidence in the literature on children's stories to support this idea. In her study of the stories invented by

270 children from two to five years of age, Ames [1966] found that 33-35% of the stories at each age group in her sample had "kind and friendly" themes, which would include the playing theme in many children's Sazaesan narratives; sleep themes were also popular in Ames' data. Watson's [1972] collection of stories by Hawaiian children between five and seven years of age also included themes of playing and eating. In his re-analysis of the Pitcher and Prelinger [1963] stories of children between two and seven years of age, Applebee [1978] found that although a high proportion of stories dealt with various developmental problems and rules of behavior, a second large group of stories focused on the everyday world. In these "comfortable" stories, Applebee states, children relax within the confines of a world which is posing no immediate problem, focusing on themes like eating and sleeping.

The similarity between the themes chosen for verbalization by the child Sazaesan narrators and produced in the invented stories of American children is striking, and can be found in stories about problems as well. The most popular theme at all ages in Ames' sample was some kind of violence, including spanking, falling down, getting hurt, banged or bumped into, all of which were either discussed or depicted in the mischief sequences in the Sazaesan videotape, and were included in the children's treatment of the mischief and anger themes. Stories about "good and bad" and things being broken were popular in Ames' sample, and contributed to the mischief and anger themes in the Sazaesan story. Somewhat less popular themes in the American children's stories, which were also present in the Sazaesan story, included sibling rivalry (the conflict between Ikura and the older children mirrors this rivalry), crying, and

sickness. Thus the central themes of mischief and anger, as well as the background theme of sickness, were topics which American children of slightly younger age found appropriate for inclusion in their own invented stories. The events in the Sazaesan videotape which were depicted to convey these themes may have been intrinsically interesting to the children, and this probably led them to focus on these problems and resolutions and select them for narration. Apparently the author of the Sazaesan story expected Japanese children to be interested in the same range of themes which occurred in the stories which the American children in Ames' study told spontaneously. However, Japanese adults generally agree that Sazaesan is not really meant for children only, and the rather strange ending of this videotape indicates that the author was also concerned with making this a good story from an adult point of view.

The clearest evidence for the development of children's notion of appropriate story content, from the description of typical activities to problem solving or goal-directed behavior, is to be found in a study by Stein and Glenn [1977a] on story creation. In this study, eight kindergarteners, eight third graders and eight fifth graders were given some brief setting information and asked to "finish the story," making up any kind of story as long as it was a "good story." In addition to narratives lacking any structure, and the reactive and goal-oriented episodes which have already been discussed, the children sometimes produced "descriptive sequences." These stories consisted of a series of statements which described the protagonist, his surroundings and the activities which he carried out. However, these activities were not directed toward the achievement of a goal and the events were not causally

connected. Thirty-two percent of the stories having any structure told by the kindergarteners and third graders fell into this category, but only 11.6% of the fifth grader's stories were descriptive. When the fifth graders did give descriptive information, it almost always served as a setting. Thus, until about ten years of age a significant minority of American children think that a story may consist of a description of ordinary daily events. It would be interesting to investigate the source of this belief, and possible models in the stories to which children are exposed.

In the present case, the children did not have to invent a story of their own, but merely to comprehend and reproduce a story already incorporating adult features, and their narratives appear somewhat more advanced than those of Stein and Glenn's subjects. Only five children, all under six years of age, told a Sazaesan story which did not have at least one problem-resolution pair. For these children, content selection was apparently motivated by a general notion of "typical events of the day," with children playing, mothers making dinner, and fathers arriving home from work. Their focus on such themes suggests that they either completely missed, or chose to ignore, what were the real themes or "message" of the videotape for the adult narrators. The inherent interest which typical activities held for the children as compared with the adults led to a lack of problem-resolution orientation in a few narratives, but usually just to the inclusion of a few irrelevant passages.

Thematic Cohesion

Another major difference between the adult and child narratives was the degree of thematic unity in the story as a whole. The inclusion of irrelevant segments clearly disrupted the semantic cohesion of children's narratives. A less obvious, but important factor detracting from the unity of the children's stories was that individual themes did not recur as frequently throughout their stories as in the adults' narratives. The adult speakers seemed to be more aware of the desirability of creating semantic cohesion across episode boundaries, and incorporated supporting information for the themes they had selected wherever possible. In contrast, the children tended to mention or illustrate a particular problem less frequently before resolving it; they did not bring up the same problem and leave it pending several times.

A typical contrast between the adult and child treatment of thematic material is provided by the following two versions of the eighth episode, in which Ikura's father comes to take him home at the end of the first day. A minimal version of this episode, used by only two adults but many of the children, included only the babysitting theme, that is, the arrival of Ikura's father, and perhaps also his departure with Ikura, and can be illustrated by the following example:

- 7.1
F ... unto ne, (55)
 ... soshite ne,
 ... Ikurachan wa ne,
 ... ne,
 ... otoosan ga mukae ni kita kara ne,
 ... kaetta ne;

 ... um,
 ... then,
 ... Ikura,
 ... um,

... his father came to get him,
... so they went home;

In contrast, in the expanded version given below, the speaker reiterates the themes of Taeko's illness, Ikura's mischief, and Wakame and Katsuo's anger. This version of the scene also provides background for the baby-talk themes, since Wakame and Katsuo fail to tell Ikura's father about the mischief, and will therefore be amazed when he knows about it the next day.

Adult F ... unto-- ... soshitara ... yuugata / / Norisuke (56)
ojisan ga',
... to ... Ikurachan mukae ni kuru n dakedo,
... to-- ... sorede ... A! ... Wakamechan to Katsuokun wa,
... monku o sugoku itte yaroo to omotte,
genkan ni tonde iku wake.
... s ... dakedo',
... to nanka Norisuke ojisan no ... nan ... tsukarehateta
yoo na ... sugata o miru to,
... sorede ... yuuhan no ... okazu ni nanika ... suupaa ka
nanka de katte / kiteru tsutsumi /
nanka kawaiiso de ienakute',
... sorede sono ban wa',
... sono / / ... Ikurachan ga kaette',
... de "tsugi no hi mata ... onegai shimasu" tte
kaette iku kara,

... um-- ... then ... in the evening / / Mr. Norisuke,
... um ... came to get Ikura,
... but uh-- ... then ... Oh! ... Wakame and Katsuo,
... were going to really complain,
and dashed out to the entrance.
... Th ... but,
... uh ... uh when the looked at ... Mr. Norisuke's ... uh
... tired figure,
... and then ... (see that) he
had bought a bag
full of things ... for dinner ... at the supermarket or somewhere,
uh they felt sorry for him and couldn't say anything,
... and that evening,
... that / / ... Ikura went home,
... and (he said) "I'll call on you ... again tomorrow,"
and went home so,

Thus the centration typical of the children's episodes limited the number

of themes per episode, and thereby reduced the thematic cohesion of their stories.

Table 12 presents evidence for the difference in thematic cohesion between the adult and child narratives, giving the average number of themes per narrative and per episode for each age group. The children not only had fewer themes in their stories, but also included fewer themes in any one episode. Therefore, there was less opportunity for semantic cohesion across episodes.

TABLE 12. Average number of themes per episode and story.

Age	Number of Themes per episode	Themes per story
3.10-4.8	1.2	3.7
5.0 - 5.4	1.4	4.9
5.8 - 6.0	1.6	4.9
6.4 - 6.8	1.4	5.5
7.0 - 7.4	1.4	4.2
Adult	2.0	6.3

To explore thematic cohesion in more detail, each episode in the narratives was categorized according to the type of themes it included. Table 13 presents the percentages of episodes for each age group which contained entirely new themes, the same theme as the prior episode, a return to a theme which had not been mentioned for more than one episode, both the latter types of "old" themes, or a new theme plus an old theme which had already occurred in the story. There were no important differences in any of these categories between the ages of 5.0 and 7.5 years. The children under five years of age had more episodes including

only new themes, more returns to a somewhat distant theme, and no episodes at all which included both new and old themes. Thus there were fewer themes shared across episode boundaries or connecting distant episodes.

TABLE 13. Thematic cohesion: the percentage of episodes presenting new and old themes.

Age	New	Same	Return	Same and Return	New and Old
3.10-4.8	.53	.23	.23	--	0
5.0 - 5.4	.45	.20	.11	.02	.22
5.8 - 6.0	.41	.21	.16	.02	.20
6.4 - 6.8	.41	.24	.12	.03	.20
7.0 - 7.4	.43	.27	.13	.04	.13
Adult	.19	.38	.13	.17	.14

The adults were strikingly different from the children in three categories: they had fewer episodes which did not return to a theme from an earlier point in their narrative and many more episodes which had the same theme as the immediately preceding episode. Overall, 67% of the adult episodes, but only 32 - 47% of the children's episodes included an old theme. Accordingly, the degree of semantic cohesion, especially thematic links between consecutive episodes, was much greater in the adult narratives.

Thus one of the important things which children must learn in using the problem-resolution schema is to present information reestablishing a given problem throughout a narrative, rather than simply presenting the problem once. Paradoxically, if the child could remember to do this, there would be a smaller gap between problem and resolution, and he would

be less likely to forget to resolve the problem. The most common difficulty with the problem-resolution schema for these children was to remember in advance to present the problem. The next step is learning to keep the problem in mind throughout the narrative so that when information which supports that theme is available, the child will verbalize it. This strategy adds to the suspense and prepares the listener for the resolution. It also results in the sense of thematic unity which differentiated the adults' narratives from the children's.

Summary and Conclusions

The notion of schemas, or expectations which guide narrators in producing stories, has proved applicable not only to the structure but also to the content of the Sazaesan story. Speakers have certain expectations about what kinds of content are appropriate for storytelling. The fundamental assumption seems to be that the content of a story should be interesting. The themes of the Sazaesan stories and evidence from the literature on narratives indicate that adults find topics which go beyond ordinary everyday life interesting, whereas young children are often satisfied with descriptions of fairly mundane activities. To the extent that their narratives can be taken as evidence of their comprehension of the videotape, it appears that in watching the Sazaesan program the children would focus on these trivial, background activities, and use these as the core around which they constructed their narratives. There were only two children in the sample whose stories consisted primarily of such descriptive sequences, one child of 3.10 years whose story was a rather confused chain of descriptions of playing, with many of the events

of the videotape misinterpreted as playing, and a child of 5.10 years who told a story centered around playing and eating. Except for occasional irrelevant segments, most children in this age range focused on one or more of the same themes as the adults. However, only 55% of the children, none under five years of age, included any mention of babytalk, the "message" of the story from an adult point of view.

Another basic expectation shared by all adults and most of the children is that stories should be about people encountering and resolving problems. Acquisition of the problem-resolution schema seems to be quite early; it has been found in the narratives of children as young as 2.9 years [Sachs, 1972], and was the earliest identifiable structure in Botvin and Sutton-Smith's data on children between three and twelve years old. In the Sazaesan sample only five children, all under six years of age, did not have a single successful problem-resolution pair in their narratives.

Analysis of the Sazaesan stories has suggested several further developments which must take place before children's treatment of story content is like that of adults. Children must learn to handle more than one problem and resolution in a single story, to remember to include both parts of problem-resolution pairs even when they are separated by other story material, to take the point of view in presenting events which will preserve the suspense inherent in the problem-resolution schema for the listener, to avoid emphasizing events and descriptive details which do not contribute to any problems or resolutions, and to unify the story by reiterating the problems which are awaiting resolution. These skills had not yet been completely mastered by many of the children in this sample.

In order to attain the adult level of competence in organizing and presenting story content, children need sufficient experience with a variety of stories to learn how the problem-resolution schema is handled in good narratives. However, as with certain other narrative schemas, the ability to make use of this knowledge in telling stories seems to be based upon cognitive developments in memory and decentering. Thus selecting topics which will be of interest to the listener, anticipating background problems which must be mentioned in advance, taking the viewpoint which creates suspense for the listener, and periodically reminding the listener of which problems will later be resolved are all behaviors which, in Piagetian terms, require decentering. Similarly, the child's memory must have reached a certain level of development before he will be able to keep several different problems and resolutions in mind throughout a story, producing both parts of each pair at the appropriate points. Thus comparison of the content of the adult and child Sazaesan narratives again suggests that, as in other areas of language acquisition, successful narrative performance must await the development of various cognitive prerequisites.

CHAPTER 6

LINGUISTIC ORGANIZATION: SENTENCES AND CONJUNCTIONS

Prior Research on Sentences in Discourse

In addition to the cognitive processes involved in selecting and organizing the content of a story, there must also be cognitive processes primarily devoted to verbalization per se, that is, to the conversion of content into linguistic structures. One linguistic structure which is created during narration is the sentence, which usually consists of more than one clause or case frame. In their analysis of narrative structure, writers of story grammars have generally taken the single clause or proposition as their basic cognitive unit, breaking down a story into a series of propositions consisting of a predicate and its nominal arguments. This cognitive unit corresponds to the basic linguistic unit of generative grammars, "S" or "sentence," and the sentences analyzed in these grammars typically consist of a single clause or case frame. The single predication, often with extremely complex multiple embeddings, is thus identified with the notion of sentence, and relatively little attention has been paid to the analysis of sentences consisting of more than a single main verb.

The sentences which have served as the basis for syntactic studies have generally been invented by linguists. Tape-recordings of spontaneous discourse provide a very different picture of the typical sentence actually produced by native speakers. Analyzing the structure of sentences in various languages of the world, Longacre [forthcoming]

points out that "in discourse, whether dialogue or monologue, simple predications combine into larger units," and defines the sentence as a combination of clauses. On the basis of oral narratives in several different languages, Chafe [1979,1980] defines the sentence as a unit having distinctive syntactic and intonational properties. A new sentence typically begins with various hesitational phenomena including silent pauses, filled pauses, lengthenings, false starts and repetitions, and often has heightened amplitude and/or pitch; sentences typically end with syntactic closure and falling pitch. In Chafe's samples of English narratives, sentences consist, on the average, of three "idea units," that is, clauses, phrases or single words which were produced separately, with their own intonation contour. Three-fourths of these idea units consist of a single case frame, that is, a verb with its associated nouns, complements, and identificatory relative clauses. These smaller units begin with fewer hesitations, and end with a non-final rising or falling pitch. Thus the sentence and the clause have different syntactic, hesitational, and intonational properties, and form two distinct, identifiable levels of linguistic organization in narrative discourse.

The sentences in the texts upon which story grammars have been based also typically consist of more than one clause or proposition. However, as discussed in Chapter 1, although the hierarchical structures formulated in story grammars are supposed to represent the relationships between individual propositions in a story, linguistic evidence for such relationships, such as conjunctions and sentence boundaries, is not taken into consideration. The only linguistic level recognized in story grammars is that of the clause or single proposition. The sentence

level has been entirely ignored, and the linguistic relationships between propositions in actual stories are left unaccounted for.

Why do multi-clause sentences appear in narrative discourse?

Taking the speaker's point of view, one possibility is that sentences are linguistic realizations of pre-existing cognitive "chunks," which have been stored as units in memory. This approach would be consistent with the analysis of the comprehension process presented within schema theory: people process incoming material in terms of the structural units specified in cognitive schemas, and when each unit is complete, it is stored in memory, and later can be retrieved as a unit. If this were the primary reason for placing the clauses of a story into distinct sentences, then one might expect the narrative units in a story schema to coincide with the sentence boundaries which appear in stories embodying the schema. Chafe [1979] did find that certain sentences in his sample of narratives expressed typical narrative schemas; for example, narratives often began with a single sentence consisting of a "character-action-location schema."

Thus one interpretation of sentences in discourse is that they represent separate chunks of experience formed at the time of perception, stored in memory, and then retrieved and verbalized at some later time. However, Chafe [1979] denies that the units of thought which appear as sentences in narratives are already formed in the mind prior to verbalization, and presents evidence indicating that "the material that goes into a sentence is decided on as the speaker is talking." The most telling evidence is that a speaker, asked to tell the same story on two different occasions, will place sentence boundaries at different points in his

narrative. Chafe concludes that the process of integrating information during the initial processing of experience does not lead to the formation of well-defined, stable units which are stored as such in memory, and verbalized as sentences during narration.

If sentences do not reflect pre-existing fixed units in memory, what accounts for their formation during the process of verbalizing a story? Chafe [1980] proposes that sentences in a narrative reflect "centers of interest" which are kept in peripheral consciousness during narration, and direct the speaker's attention from one focus of consciousness to the next as he "scans" the information in his memory. "Sentence-final intonation," Chafe states, "serves to express a speaker's judgment that he or she has completed the scanning and communication of a center of interest." Apparently the same material may be scanned from the perspective of more than one center of interest; Chafe suggests that the differing placement of sentence boundaries in the same story told on different occasions results from variations in the speaker's intellectual judgments about the centers of interest in the material he is narrating. Thus the distribution of clauses within sentences in a sample of speakers recounting the same story differs across and within speakers, "with apparently different principles of integration being used to give coherence to sentences at different times" [Chafe, 1979].

What centers of interest a speaker perceives in the material that he is narrating may be influenced, Chafe [1980] suggests, by the speaker's prior experience and learned schemas. But in order for the narrator to recognize a particular experience as fitting a certain schema, the experience itself must have an inherent structure which allows it to be

interpreted in terms of the schema. Very little research has been performed on this topic, but a few authors have addressed the question of how the structure of experience influences the placement of sentence boundaries in discourse.

Linde and Labov [1975], for example, analyzed the way people describe the layout of their apartments, and found striking regularities in the placement of sentence boundaries. Most speakers took the listener on an imaginary tour of their apartment, describing paths by which each room could be entered. Every major room was usually placed in a separate sentence, except for rare cases of conjoining with "and." Minor rooms were usually placed in separate sentences, but could also be introduced in relative clauses or prepositional phrases, which never occurred with major rooms. Thus sentence structure in these descriptions was clearly influenced by the structure of the apartments being described.

There is also evidence that complex sequences of events have an inherent structure which people are able to discriminate during perception. Newton [1976] showed subjects videotapes or films, and asked them to press a button at the points where the actor "stops doing one thing and begins to do something discriminably different." He found that although people varied considerably in the number of such "break points" which they identified in a given sequence, this was at least partly due to differences in the level at which they were analyzing the actions depicted. For example, Newton states, one person might see a sequence in which an actor gets up from a chair, walks over to a door, closes it, turns, and walks back to his chair as consisting of five discrete actions; another might mark it as one action — closing the door. When asked to mark the

smallest or largest "actions that seem natural and meaningful," people were able to divide the action sequences into units of different sizes. Chafe [1979] notes that the larger units marked by Newton's subjects "seem suggestively close to the kinds of thoughts expressed in sentences." If speakers do tend to place sentence boundaries at natural structural boundaries within sequences of events, one source of the variability in the placement of sentence boundaries within and across speakers might be differences in the size of the action units which they choose to focus upon.

Bernardo [1976] found that sentence boundaries in Chafe's sample of American speakers were placed at points where there was a drop in cohesion in the material being narrated, and described the different types of natural boundaries which could be found at the ends of sentences. Speakers placed sentence boundaries where there was a change of actor or location; a shift from durative to punctual events; a shift from one type of event, such as arrival, departure, perception, cognition, to another; a change from setting to action; a break from the temporal sequence of events; and a change in the narrator's point of view to commentary, personal introspections, or interactions with the interviewer. In a sample of ten American narratives based on Chafe's film, 75% of the sentence boundaries occurred at these points, with the percentage in individual narratives ranging from 50 to 94%.

These findings suggest that the speakers' perception and marking of inherent structure is more variable when they are recounting complex event sequences than when they are describing static spatial networks such as apartment layout. Bernardo's list of drops in cohesion includes

many different kinds of structural boundaries. Some sentence boundaries reflect very minor shifts, such as in event type, some correspond to the categories within schemas for episode structure, such as events-departure, and some reflect major narrative boundaries, such as between the setting and action of a story, or between episodes, where there is usually a change in characters and location.

This account of sentence formation takes the point of view of the speaker; other research has attempted to discover the functions which sentences in discourse have for the listener. Jarvella [1971] had subjects listen to and then recall passages consisting of three clauses, with a sentence boundary placed after either the first or second clause. He found that recall was significantly influenced by the placement of the sentence boundary. Subjects usually recalled the last clause which they had heard verbatim, whereas recall of the next-to-last clause was better when it was part of the same sentence as the last clause than when it was separated from the last clause by a sentence boundary. Jarvella concludes that the listener holds verbal input in verbatim form until he has processed an entire sentence; at this point the meaning, but not superficial form, of the sentence is stored in memory.

Jarvella's experiment was rather artificial, since the passages were so short and the task was memorization. Using a text based upon an oral narrative from Chafe's project, Bernardo [1976] performed an experiment demonstrating the cognitive significance of sentences for the listener in more natural discourse. Subjects were read one of four possible versions of the narrative, with four different placements of sentence boundaries: where they had been in the original speaker's

telling, at each episode boundary, after each clause, or at points deliberately chosen for their lack of correspondence with the list of typical drops in cohesion found at sentence boundaries in Chafe's American sample. Subjects were asked to retell the story; their recall was measured on the basis of content, and did not have to be verbatim. The mean recall scores of subjects who heard the version in which sentence boundaries were placed coherently, as they had been by the original speaker of the story, were significantly higher than the scores of subjects who heard any of the other three versions; recall of these three versions did not differ significantly. Apparently, if people hear narratives in which there are no intermediate, multi-clause sentential units, or in which the sentences are not coherent units, their recall will suffer. Bernardo concludes that recall of the coherent sentence version of the narrative in his experiment was superior because this version communicated to the listener the coherence principles which the speaker had followed in organizing the material in his narrative on the sentence level.

Since the typical sentence in discourse consists of more than one clause, the speaker creating this level of organization must perform two tasks: placing sentence boundaries around multi-clause units, and linking the clauses within each sentence by linguistic connectives. Chafe [1979] found that about 40% of the clauses in his sample of American narratives began with "and," and many of the remaining clauses were introduced with one or more of the conjunctions "but", "so" and "then". Labov [1972] also reports that in English "basic narrative syntax," clauses are connected by these four conjunctions. Syder and Pawley [in preparation]

have found "a strong statistical preference ... for a coordinating, or chaining style of syntax, over a subordinating or integrating style."

Apparently, within a sentence speakers of English rarely use embedding or subordinating constructions, but rather tend to produce series of syntactically independent clauses, connected by coordinate conjunctions.

Neither the placement of sentence boundaries nor the use of conjunctions within sentences in discourse has been investigated extensively from a developmental perspective. Chafe [1980] has suggested that young children may tend to equate single clauses with sentences, giving intonational and syntactic closure to almost every focus of consciousness during their verbalization of a narrative. Ames [1966] reports data which supports this suggestion. Analyzing the expression of causality in the stories of American children between two and five years of age, Ames found that two year olds usually placed causally related statements in separate sentences, as in "The baby cried. The Mummy spanked her." In the next pattern which emerged in her sample, children connected causally related statements with "and," as in "Little girl fell and hurt herself." At the next stage children began to use the more explicit "because." However, even the four and five year olds in Ames' sample still rather frequently expressed causality simply by juxtaposing causally related clauses in separate sentences, although there is ample evidence that children of this age are entirely capable of using the different linguistic connectives which appropriately convey causality [cf. Bloom et al, forthcoming].

Piaget [1955] discusses the use of juxtaposition in children's narratives, and states that even when children are able to understand logical and causal relations and to use the appropriate connectives,

they still tend to juxtapose related statements, leaving these relations unexpressed. Piaget was considering the connective "and then," which was very common in the stories he collected from seven year olds, to be an example of juxtaposition, and was comparing children's connectives with those in written texts, which they were attempting to retell. In view of recent findings on typical connectives in the oral narratives of adults, the children in Piaget's study may not really have been performing at a much lower developmental level. However, if it is true that children use fewer linguistic connectives between clauses than adults, relying upon the juxtaposition of related clauses in separate sentences, it would appear that development of the sentence level in narratives recapitulates in an interesting way the initial development of conjunction in conversational discourse. Werner and Kaplan [1967] and Clancy et al. [1976] have found in English, German, Italian, and Turkish that the earliest way children express related ideas is to place them in successive sentences. Werner and Kaplan also document a stage at which the child links such statements intonationally before acquiring the appropriate linguistic forms to connect them grammatically. Perhaps because greater cognitive demands are placed upon the child attempting to construct a narrative from memory, this juxtaposition phase re-appears at a later stage of development, when the child is already using linguistic connectives fluently in ordinary conversational interactions.

Prior research on sentences in discourse thus raises many interesting questions about the nature of sentences in adult narratives, and how the ability to construct the sentence level of organization in a story develops in children. There is some evidence that sentence length

is language-specific; Longacre [forthcoming] has pointed out that in certain languages of New Guinea, South American and Australia, the level of structure encompassed by a single sentence can be equivalent to a paragraph or even an entire discourse. Chafe [1980] found that the sentences of American narrators typically consisted of about three "idea units," most of which were separate syntactic clauses; in contrast, the sentences in a sample of ten Japanese narratives recounting the same story were about five clauses long on the average. The Sazaesan narratives will be analyzed to determine the typical adult sentence length, and to compare this with the findings based on Chafe's Japanese narratives and on other languages. The internal coherence of sentences will be examined to determine whether sentences typically represent coherent units such as Chafe [1979, 1980] has found in English, and whether these units bear any relationship to the structural schemas which have been identified in the Sazaesan stories. To discover whether there is a "basic narrative syntax" in Japanese, the types of linguistic connectives between successive clauses within a sentence will also be analyzed.

Sentence Length

To establish the adult norm for sentence length, and to test the hypothesis that children use fewer clauses per sentence than adults, the length of all the sentences in the Sazaesan narratives was tabulated. There are different ways of measuring sentence length; Chafe [1980] counted the number of intonationally distinct units, of which 75% were syntactic clauses. In the Sazaesan stories, especially those of the children, an entire syntactic clause was not usually verbalized within

a single intonation contour, but instead was broken down into many short, intonationally separate units, usually ending with "ne," and often consisting of no more than a single argument of the predicate, an adverb, or even a hesitation. For this chapter, which is concerned primarily with the relationships between successive clauses, sentences will be measured by the number of clauses they incorporate rather than the number of intonation groups, although the latter measure would surely provide interesting cross-linguistic and developmental data. Embeddings, except for the complements of verbs of saying and thinking, were extremely rare in the Sazaesan stories of both adults and children; they have not been included in the number of clauses, which is intended to reflect the number of points at which a speaker could have used sentence-final closure.

In Japanese, sentence boundaries are almost always quite clear, since the ends of sentences are marked both grammatically and intonationally. Most clauses in these narratives ended with a verb; verbs at the ends of clauses which were not sentence-final were given in the non-final form or were immediately followed by a conjunction produced within the same intonation contour. Sentence-final verbs are inflected for tense, and speakers may end a sentence simply by producing these verbs with a distinctive falling pitch. However, if a sentence-final verb is not also inflected for politeness, it is much more common for speakers to add a nominalizer such as "no" or "wake" after the verb. The children in this sample almost invariably used non-polite verb forms plus "no" at the ends of sentences; this is typical of ordinary, informal conversational style for children and was used by the female interviewers in addressing the children. The adult women also used non-polite forms at the ends of

sentences, adding both "no" and "wake," which means "reason" or "situation," but in these narratives often seems, like "no," to be almost semantically empty. Four of the five men in the adult sample used polite sentence-final inflections, at least for part of their narratives, since they were speaking to women whom they did not know very well. As a result of these distinctively sentence-final grammatical forms, it was much easier to identify sentence boundaries in the Sazaesan stories than in English narratives, where judgments must depend upon often extremely subtle intonational differences.

Occasionally, the grammatical and intonational markers of sentence boundaries were in conflict in the Sazaesan narratives. Adults did not usually end their sentences with "ne," and if they did, the intonation was distinct from that used within a sentence. The children, however, often ended sentences with "ne," using the sharply rising pitch characteristic of sentence-internal intonation groups. Thus, sentence boundaries were often less intonationally distinct in the children's narratives than in the adults'; these sentence boundaries have been indicated by semicolons in the transcription. At times even adults used sentence-final verb forms without sentence-final intonation; very rarely adults and children also used a non-final verb form with sentence-final intonation. In counting the number of clauses per sentence in the Sazaesan narratives, all verbs with sentence-final grammatical marking were treated as sentence-final regardless of intonation; when non-final verbs with sentence-final intonation could not plausibly be linked semantically with the preceding or following clause, they were also counted as sentence-final.

Table 14 presents the average number of clauses per sentence within

each age group. The median number of clauses is also given, since the extremely long sentences in the narratives of a few children over five years old substantially increased the average sentence length of these groups.

TABLE 14. Number of Clauses per Sentence.

Age	Average	Median
3.10 - 4.8	2.3	2.0
5.0 - 5.4	4.1	2.3
5.8 - 6.0	6.2	3.1
6.4 - 6.8	5.5	4.8
7.0 - 7.4	4.2	3.7
Adult	2.4	2.0

As Table 14 shows, there was a general trend toward increasing sentence length across the age range of children sampled, with the six year olds having even longer sentences than the seven year olds, in keeping with the general tendency of that age group to show the most advanced stage of various developmental trends. The adults, however, did not have the longest sentences, but instead were surprisingly similar to the youngest group of children under five years old. This short average sentence length in the adult Sazaesan narratives stands in striking contrast to Chafe's Japanese data. In a sample of ten narratives from Chafe's project, Japanese speakers produced an average of 5.3 clauses per sentence; even if all embeddings are counted as separate clauses in the Sazaesan stories, the average sentence length is still only 3.1

clauses. Thus the Sazaesan narrators seem to be more similar to Chafe's American subjects than to his Japanese subjects.

Table 14 presents average sentence lengths for each age group, but the developmental trends involved can best be understood by analyzing the different strategies for sentence formation used by individual speakers within each age group. In general, there were three different strategies for sentence formation in the Sazaesan narratives. As Chafe [1980] suggested, certain children treated each clause as a separate sentence. The most consistent example of this strategy occurred in the story of a 3.11 year old girl, who averaged 1.1 clauses per sentence, as the following excerpt illustrates:

- 3.11
F ... Ijimete ta no. (57)
... Soshite ne,
... asonde ta no.
... Soshite ne,
... eto ne,
... byooki datta no.
... Soshite ne,
... onetsu ga atta no.

... He was teasing her.
... Then,
... he was playing.
... Then,
... um,
... she was sick.
... Then,
... she had a fever.

Although this narrative seems quite primitive, the lack of setting-episode structure and complete absence of any explicit reference to story characters may contribute as much to this impression as the repeated use of single-clause sentences. In fact, this child was the most fluent narrator of the youngest group, and produced the longest story with no

prompting. Half of the adult subjects also averaged less than two clauses per sentence, and two of the most natural, spontaneous, and entertaining stories were told by these narrators. The following example is from the beginning of one such story; the speaker uses grammatical closure and/or sentence-final intonation after each clause, yet her story seems interesting and not at all childish.

- Adult ... De' (58)
 F ... nanishiro sono shinseki no ne,
 ... Ikurachan tt yuu chitcha na a ... akachan o',
 ... ano azukaru wake.
 5 Okaasama ga ne,
 ... kaze ka nanka de nekonderu no;
 azukatta wake ne.
 ... Sorede ne sore wa monosugoku ne itazura ... itazura na no.
 Akamboo ga.
 10 ... Ano Ikurachan ga.
 Sorede hikidashi wa hikkurikaesu wa ne;
 ... moo okaasan no,
 ... soko no Sazaesan no okaasan no',
 ... ano-- ichiban ii ... kimono nanka /moo/ ne,
 15 ... hikkurikaeshite ne.
 ... Moo-- ... te ga tsuke/rare/nai wake.
 ... And,
 ... well you know they are taking care of,
 ... their relative's
 ... little b... baby named Ikura.
 5 His mother,
 ... is in bed with a cold or something;
 they took care of him.
 ... Then he was terribly mischievous ... mischievous.
 The baby.
 10 ... Ikura,
 Then he overturns a drawer;
 ... he overturns,
 ... the mother's
 ... Sazaesan's mother's,
 15 ... uh-- very best ... kimono.
 ... There is really nothing they can do.

Although this speaker's sentences are very short, individual clauses are longer and more structurally complex than in the child's example;

reference is explicit, with frequent use of modifying phrases. Furthermore, there is much greater variety in the types of sentence endings that this adult uses. Both "wake" and "no" appear, postposed referents are placed after the conclusion of the sentence on line 8, sentence-final verb forms are used without sentence-final intonation on lines 6 and 11, and the continuation of the sentence which is grammatically marked as complete on line 11 leads to the use of a non-final verb form with sentence final intonation on line 13. This variety of sentence endings alleviates the repetitive quality of the sentences in the child's example, which all end with "no" and falling pitch. Apparently, the use of single-clause sentences is not, in itself, a primitive strategy, to be found only at an early stage of development.

At the opposite extreme is the "endless sentence," which encompasses the speaker's entire narrative. Chafe [1980] found that certain adults produced extremely long sentences, sometimes failing to use sentence-final closure until the end of their story; he concluded that "effective sentence production remains a problem at all ages." Chafe points out that the strategies of treating each clause as a separate sentence and of treating the entire narrative as one long sentence are alike in that speakers in both cases fail to exploit the possibility of using sentence boundaries to create an intermediate structural level between the clause and the story. He does not interpret adults' use of the "endless sentence" as childish, but rather as "an indication that the speaker has for some reason decided that the entire memory is at the moment the one and only unit she is concerned with."

The intention to communicate an entire story as a single sentence

seems to be based at least partly on contextual factors. Although the tasks were similar in Chafe's project and the present case, there were certain contextual differences between the two elicitation situations. Each subject in the present sample told his Sazaesan story immediately after seeing the videotape, whereas several subjects viewed Chafe's movie together and then told their stories one at a time. The longer interval before narration may have dimmed the memory of Chafe's Japanese subjects to some extent, and led to the intention to summarize rather than to retell the story in detail. Thus one influence on sentence length may be the speaker's attitude toward the speech act in question. Speakers who intend to summarize may be more likely to attempt to treat an entire narrative as a single sentence, as did some of Chafe's Japanese subjects, but none of the Sazaesan narrators. Clearly, any conclusions about typical sentence lengths in different languages must await further research on contextual effects, which can apparently contribute to greater differences within the same language than between different languages.

In the Sazaesan narratives, none of the adults attempted to produce an entire story in a single sentence; the longest average sentence length in an adult narrative was 5.3 clauses. However, several of the children over five years of age did produce extremely long sentences, with one five year old telling the entire story in a single, 28-clause sentence. These stories varied considerably in quality, but some were quite complex, interesting, and successful. Apparently, neither using extremely long nor extremely short sentences is necessarily a backward or unsuccessful strategy. This subjective impression is borne

out by an experiment described in Bernardo [1976], who found that adult subjects judging the quality of aurally presented narratives did not find those containing unusually long nor unusually short sentences to be any more disjointed, or less intelligible, natural and easy to follow than narratives containing coherent sentences of intermediate length. The following Sazaesan story was fairly typical in quality, but has sentence-final grammatical closure only at line 39 and the end of the story, which is the only point where the child uses sentence-final falling intonation.

- 7.1
M ... unto ne, (59)
... saisho ne,
... Wakamechan ga ne,
... kae ... gakkoo kara kaette kitara ne,
5 ... unto Taracha ja ... akachan ga ne,
... unto ... kutsubako n tokoro ne,
... unto ippai ne,
dashichatte ne,
... unto sukaato ni tsukechatte ne,
10 ... sorede torikaeshite ... moo ne,
... atama ni kichatte ne,
... sorede ne,
... oniichan mo kaette kite ne,
... unto ... ne,
15 ... hon o ne,
... mata akachan ga yatchatte ne,
... soshite ... soshite',
... Tara ... unto ... sono akachan no ojichan ga kite ne,
... soshite,
20 ... Tarachan tachi ga ne,
... bikkuri shichatte ne,
... sshite ne,
... unto ... ikkai ha ... unto ne,
... Wakamechan uchi ni itte ne,
25 ... unto ... soshite ne,
mata kaette ne,
... Tara ... unto akachan o dakko shite ne,
... soshite ... de',
... soshite ne,
30 ... Wakamechan tachi ga moo ne,
... unto ... ne,
... moo gamu teepu de ne,
... unto hikidashi toka akera akaranai yoo ni ne,

... shimechatte ne,
35 ... unto ... sshite ka ... o ... ojichan ga kite ne,
... mata sono ojichan,
... sshite ne,
... ojichan wa ne,
... sshite ... so ... okaasan byooki ga naotta no ne;
40 ... sorede,
... unto unto sorede ne,
... sor ... nan unto sono aketa yatsu wa ne,
... okusuri ... unto sono ... okaasan ga ne,
... naoru tame ni okusuri o mitsukete ne,
45 ... soshite saigo ni wa ne,
... unto ... Sazaechan Waka ... sono a ... unto akachan ga ne,
... ga,
... akachan ... "dendenmushi ne,
happa ni iru yo" tte yutte ne,
... sshite owatta no.

... well um,
... in the beginning,
... when Wakame,
... ca... came home from school,
5 ... um Tara ... no the baby,
... um ... pulled out,
... um lots of things,
... um ... from the shoebox,
... and um he stuck it on her skirt,
10 ... and then she changed it and ... really,
... she got mad,
... and then,
... Katsuo came home too,
... and um,
15 ... the baby messed up,
... the books too,
... and then ... then,
... Tara ... um ... the baby's father came,
... and then,
20 ... Tara and the others,
... were surprised,
... and then,
... um ... the first ... um,
... he went to Wakame's house,
25 ... and um ... then,
he came back again,
... and he picked up Tara ... um the baby,
... and then ... and,
... and then,
30 ... Wakame and the others,
... um,
... shut,
... um the drawers and all with tape,

... so that he could couldn't open them,
 35 ... and um ... then ... his f... his father came,
 ... his father again,
 ... and,
 ... his father,
 ... then ... th... his mother got better;
 40 ... and then,
 ... um um and then,
 ... th... uh um those things that he opened,
 ... medicine ... he found medicine to cure,
 ... um his ... mother,
 45 ... and then at the end,
 ... um ... Szaesan Waka ... the b... um the baby,
 ... the baby,
 ... the baby said "there's a snail,
 on the leaf,"
 50 ... and then it ended.

The third common strategy was to construct sentences intermediate in length between the single-closure and the "endless" sentence. Table 15 summarizes the frequency of the different strategies for sentence formation, giving the percentage of subjects in each group who identified sentences with clauses, with the entire story, or who produced multi-clause sentences. Speakers who averaged fewer than two clauses per sentence were categorized as showing a preference for the equation of the clause and sentence level. Speakers who used sentences of either

TABLE 15. Preferred individual strategies for sentence construction.

Age	Single-clause sentences	Intermediate sentences	"Endless" sentences
3.6 - 4.8	.43	.57	0
5.0 - 5.4	.40	.40	.20
5.8 - 6.0	.30	.50	.20
6.4 - 6.8	.10	.60	.30
7.0 - 7.4	.10	.60	.30
Adult	.50	.50	0

more than ten clauses and/or who used sentences including half or more of the total number of clauses in their narrative were categorized as preferring "endless" sentences, which tend to equate the sentence and discourse levels. The remaining speakers in each age group were considered to construct a distinct sentence level in most cases. As Table 15 shows, the tendency to use many single-clause sentences was most common among speakers under six years of age and adults, and quite rare among six and seven year olds. None of the children under five years old nor the adults equated the sentence level with their entire speech act, but two or three children in each group between 5.0 and 7.4 years of age did so. Thus the shorter average sentence length in the youngest and the adult groups apparently arises from individual speakers' avoidance of the "endless" sentence and frequent use of single-clause sentences. As Table 15 showed, the difference between the average and median sentence length among five year olds was very great; the increased average sentence length in these two age groups derives primarily from the children who used "endless" sentences. The percentage of six and seven year olds who preferred single-clause sentences was much lower than in the younger groups; at this age, the higher average sentence length can therefore be attributed to a real increase in the number of clauses per sentence in most children's stories, as well as to the "endless" sentences in a few narratives.

Among the adults, but not the children, there was a striking sex difference in preferred sentence length. Four of the five speakers using extremely short sentences were men. This may have been due to the social constraint of speaking with a female interviewer felt by these subjects;

three of the four men who used many single-clause sentences seemed somewhat uncomfortable with the interview situation compared to the female subjects. However, the subject who produced the most animated, dramatized narrative was a man, who averaged only 1.8 clauses per sentence. Thus the same phenomenon seems to have very different bases in different speakers. At least for one type of adult speaker, the use of very short sentences seems to reflect a failure to become involved in the story, resulting from the nature of the narrative context; other speakers may use very short sentences as part of a dramatic style. In children, the use of single-clause sentences may have a developmental basis, and function to reduce the number of tasks which must be performed during narration by eliminating the need for connectives.

Although individual narrators did usually prefer a particular sentence length, it is important to point out that within the same speaker's story, the length of sentences was somewhat variable. There often seemed to be a warm-up effect, with very short sentences being used at the start of a narrative, as in example (57), and longer sentences being used once the speaker got into the body of the narrative. With children, this initial use of short sentences sometimes reflected their need for prompting after each clause at the beginning of their story; after the first several clauses, children often needed no further prompting and began to produce longer sentences. This warm-up effect could also be observed at points of memory failure or wording problems in the course of narration; at these points adults often floundered, producing brief fragments of recalled details in separate sentences while trying to recall the rest of the story, and children often re-

quired additional prompting. In these cases speakers seem to be devoting too much attention to the recall or verbalization problem, and temporarily abandon the attempt to create a multi-clause sentence level.

In general, speakers seemed to have a "set" for a particular sentence length. That is, for most speakers it was possible to determine a two- or three-clause range within which the great majority of their sentences fell. All but 10.5% of the narrators, two adults and one child at each age group except 5.0-5.4 years, either consistently produced short to intermediate sentences consisting, for example, of from one to three main clauses or from three to five main clauses, or else consistently produced long sentences of five or more main clauses. In the stories of speakers with shorter sentences, at least two-thirds or three-quarters of their sentences fell within the "usual" three-clause range. In the stories of speakers who favored long sentences, at least two-thirds of the clauses in their narratives were produced within typically long sentences. Six speakers, all either six or seven year olds, suddenly changed their norm for sentence length at a certain point during narration, usually switching from an "endless sentence" strategy to the production of shorter sentences within a more common three-clause range. Thus most speakers were consistent in the number of clauses they would unite into single sentences, either throughout their entire story, or with a single change.

The sentences of unusual length in a narrative tended to cluster, giving the impression that the speaker had temporarily changed his "set" for sentence length. Thus a single long or short sentence was often followed by one or more sentences of similar length. For example, in

the following case the child presented the second episode in two single-clause sentences on lines 1-9, but then gave the third episode in a long, nine-clause sentence on lines 10-28, before switching back to the shorter sentences which were more typical of her narrative.

- 5.8 (60)
F ... Sorede ne,
... kondo ne,
... Wakamechan no ne,
... oniichan ga kaette kita wake ne;
5 ... sorede ne,
... Ikurachan ga ne,
... nanka nan ... sono ne,
... Wakamechan no tsukue toka ne,
... Wakamechan no oniichan no tsukue toka ijitta wake.
10 ... Sorede ne,
... kondo wa ne,
... oyatsu no jikan ni natte ne,
... Ikurachan ga ne,
... keeki ne,
15 ... nagechatte ne,
... koocha no naka ni haitchatte ne,
... sono oniichan no ne,
... kao ... kao ni ne,
... koocha ga tsuichatte ne,
20 ... ne,
... okotte ne,
... Ikurachan ga naitchatte ne,
... sono ne ... Sazaesan ga ne,
... 'ato de ne,
25 ... okotte ageru wa yo" tte itte ne,
... kao fuite agete ne,
... unto ne,
... Wakame ... Wakamechan ni kiita no.
... Sorede ne,
30 ... 'soo omou wa" tte itte ne,
... 'okotta hoo ga ii" tte yutte ne,
... otoosan ni kondo kiite ageta wake.
- ... Then,
... next,
... Wakame's,
... brother came home;
5 ... and then,
... Ikura,
... uh um,
... messed up Wakame's desk,
... and Wakame's brother's desk.

- 10 ... Then,
... next,
... it was time for their snack,
... and Ikura,
... threw,
15 ... a piece of cake,
... and it went into the tea,
... and the tea got,
... on the brother's,
... face,
20 ... you know,
... and he got mad,
... and Ikura cried,
... and um ... Sazaesan,
... said "afterwards,
25 ... I'll scold him for you,"
... and wiped his face,
... and um,
... she asked Wakame ... Wakame.
... Then,
30 ... she said "I think so,"
... "you should get angry at him" she said,
... and next she asked their father.

It was often possible to discover motivations for changes in sentence length in the content of the material being narrated. For example, in the preceding example, the extremely long sentence on lines 10-28 presents a detailed description of a single sequence of events. Chafe [1979] found that narrators will often place the events leading up to a particular goal or result in a single sentence. Apparently, such cohesive event sequences "resist" the average sentence length, and if the description takes a long time, may even lead the narrator to abandon his former set for sentence length. In the above example, it is the shift to dialogue which finally breaks the child out of the "endless sentence" strategy.

Similarly, there were certain types of information which were typically presented in very short, even single-clause sentences. Just as speakers often began narration with a series of very short sentences,

so episodes often began with the introduction of characters or the establishment of relevant situations or objects in a separate sentence from the main events, as in the following two examples.

adult ... De sorede tonde ittara ne, (61)
F Kondo wa ... kondo wa ooki na ... un ... okaasan no
hikidashi ga aru deshoo,
... K ano jootoo no kimono ga haitte iru.
... Sono hikidashi o akechatte ne,
... sono shitajiki ni natte,
naitteru no.

... And then when they went running,
this time ... this time the big ... uh ... the mother's
drawer is there.
... Uh the one that has her k her best kimono inside.
... He had opened up that drawer,
... and it fell on top of him,
and he's crying.

7.1 ... unto Wakamechan no', (62)
M ... nan dakke ... unto ... are ... eto ... sukaato ga
kitanakatta deshoo;
... soko o ne,
... unto ... unto obaasan ga'
... kite',
... soshite',
... unto-- ... sukaato o',
... torikaete kureta no.

... Um Wakame's,
... what was it ... um ... uh ... um ... skirt was dirty;
... um ... um her grandmother,
... came,
... there,
... and then,
... um-- ... changed,
... her skirt for her.

Evaluative information was also sometimes presented in a separate sentence from the events being narrated, as in the following example:

adult Akamboo ga ne, (63)
M ... pyaa tto koo dete sa,
... moji ga gamen ni dete,

... "atashi yutteru koto wa,
sonna koto ja nai no wa yo,"
... itteru wake yo.
... Moo omoshiroi n.

The baby,
... her words leap out,
... and appear on the screen,
... and she is saying,
... "that isn't
what I was saying."
... It was really funny.

Sentence length in these cases appears to be related to the narrator's point of view. Background information and evaluations are more obviously directed toward the listener, to aid in his comprehension and communicate to him the speaker's feelings, compared to descriptions of the events depicted in the videotape. When the speaker is thus addressing the listener, sentence length tended to be shorter, perhaps following a typically shorter sentence length in conversational style. Although further research would be necessary to confirm this hypothesis, it is interesting that the dialogue which speakers recounted from the videotape almost invariably consisted of single-clause sentences. Thus, although speakers tended to place sentence boundaries at regular intervals, the type of information being narrated could influence sentence length, with different types of material being narrated in different rhythms.

Sentence Coherence

Chafe [1979,1980] suggests that the clauses within a sentence have an internal coherence which unifies the material being narrated in the sentence, and points out many examples of coherent sentential units in his sample of American narratives. This was true of many sentences

in the Sazaesan narratives as well. Often sentence boundaries delimited stretches of material which corresponded exactly to components of the structural schemas which were identified on the basis of story content. The narrative categories which figure in these schemas, such as "story setting," "episode," and "coda" were often presented in a separate sentence from the preceding and following material. In the following case, for example, the story setting is placed in a single sentence preceding the child's account of the events depicted in chronological sequence in the videotape.

- 6.7
F ... unto ne, (64)
saisho ni ne,
... Tarachan no ne,
... okaasan ga ne,
... netsu ... dashite ne,
neteru kara,
Tarachan ga ne,
Sa ... unto ne,
... I ... A! Ikurachan no ne,
okaasan ga ne,
... netsu dashita kara ne,
... dakara ne,
... Tarachan no ouchi ni azuketa no ne.
- ... um,
in the beginning,
... Tara's,
... mother,
... got ... a fever,
and was sleeping,
so Tara,
Sa ... um,
... I ... Oh! Ikura's,
mother,
... got a fever,
... so,
... she took him to Tara's house.

Frequently, the events within an episode were united into one sentence. In the following example, new episodes begin after lines 4,

16, and 36, which are the only places where the child uses syntactic closure and sentence-final falling pitch.

- 5.11
M ... hairoo to shitara ne (65)
kottentte ne,
... eto ne,
... butsukachatta no.
5 ... Soshite ne,
Ikurachan ga ne,
... eto ne,
... Katsuokun to ne,
eto Wakamechan no ne,
10 ... eto ne,
hikidashi ne,
itazura shite te ne,
... soshite kara ne,
... eto ne,
15 Katsuokun tachi ne okotte ne,
Ikurachan naitchatta no.
... Soshite ne,
... ato ne,
soshite ne,
20 Ikurachan yookan tabeyoo to shite,
... yookan ne,
... fooku de ne,
sashite ne,
Katsuokun no tokoro ni nagete ne,
25 ... ocha haitte ne,
ocha ga ne,
... hanekaette ne,
Ikurachan no ne,
... Katsuokun no ne,
30 eto ne,
kao ni bechantte atatte ne,
... eto Katsuokun ga ne,
... eto ne,
... 'yoso no ko de mo sa,
35 shikannakucha dame da yo" tte ne.
... okaasan ni yutte ta no.

when she went to go in,
bang,
... um,
... she bumped into it.
... Then,
Ikura,
... um,
... he was messing up,
... Katsuo and,

um Wakame's,
 um,
 desks,
 ... and then after that,
 ... um,
 Katsuo and the others got mad,
 and Ikura cried.
 ... Then,
 ... after that,
 then,
 Ikura was going to eat yookan,
 ... and he stuck,
 ... the yookan,
 ... with his fork,
 and threw it at Katsuo,
 ... and it went into his tea,
 and the tea,
 ... splashed
 and hit
 ... um,
 ... Ikura,
 Katsuo,
 ... in the face,
 ... and um Katsuo,
 ... um,
 ... (said) to his mother,
 ... "Even though he's somebody else's child,
 you should scold him."

The final unit of narrative structure, the coda, was also often presented in a separate sentence, as in the following example.

6.7
 F ... sorede, (66)
 ... ano ne,
 ... "Ikurachan no uchi no ne,
 ... A! Wakamechan no uchi no ne,
 ... happa ga na" tte ta no.
 "Soko ni ne,
 ... den ... katatsumuri ga iru" tte yutta no;
 Wakamechan ga.
 Sshite oshimai.
 ... then,
 ... um,
 ... at "Ikura's house,
 ... Oh! at Wakame's house,
 ... "there's a leaf you know" she (said)
 "On it,
 ... there's a sn ... snail" she said;

Wakame.
Then the end.

When an episode was recounted in more than one sentence, the sentences often corresponded to the sub-parts within a particular schema for episode structure. In the following case, the child presents the temporal orientation and arrival of a new character in one sentence, and the main events of the episode in a separate sentence; thus her placement of sentence boundaries coincides with the setting-events schema.

- 5.2
F ... dakara yoru ni natte (67)
ojisan ga kaette kita no ne.
... Soshite ne,
... Wakamechan to ne,
... Katsuokun kankan okoroo to omottara ne,
... unto ne,
... Sazaesan chi no tame ni ne,
... nanka ne,
... onegi toka ne,
oyasai ippai katte kite kureta kara,
... ne,
"kankan ni okorenakatta n da" tte.

... so it became night
and his father came home.
... Then,
... when Wakame and
... Katsuo were planning to get really mad,
... um,
he came bringing a lot of vegetables,
... and things like,
... onions and stuff,
... for Sazaesan's family,
... so um,
"we couldn't get really mad" (they said).

In the next example, the child places the reaction of Katsuo in a separate sentence from the rest of the episode.

- 7.2
M ... A! ... soshite kasutera o tabete ite', (68)
... soshite',
... koohi mitai no mo irete',

... soshite',
... Ikurachan ga',
... kasutera o',
... nagechatte',
... soshite',
... koohii no naka ni,
... haitchatte',
... Tara ... A! ... Wakamechan no',
... oniichan ni',
... no kao ni',
... koohii ga',
... tsuichatta no ne;
... soshite ne,
... Wakamechan no oniichan ga,
... "kora!" tte yuttara',

... Oh! ... then they were eating cake,
... and then,
... they served something like coffee,
... and then,
... Ikura,
... threw,
... the cake,
... and then,
... it went,
... into the coffee,
... and the coffee,
... got,
... on Tara ... Oh! ... Wakame's,
... brother's
... face;
... and then,
... when Wakame's brother,
... said "hey!",

When an episode ended with a departure, this was sometimes also placed
in a separate sentence as in the following example:

5.1 F	... ano ne Ikurachan no ne, ... okaasan ga ne, moo onetsu ne, naotta no ne. Sorede ne, ... Ikurachan to ne, ... Sazaesan chi ni ita ne, Ikurachan no okaasan wa ne, ... otoosan tachi to issho ni ne, ... kaetta no ne.	(69)
----------	--	------

... um Ikura's,
... mother,
her fever already,
got better.
Then,
... Ikura's mother,
... who was at Sazaesan's house,
... went home,
... with Ikura,
... and with his father and the others.

In addition to these boundaries between the sub-parts of schemas, sentence-final closure was also frequently used to delimit the speech turns within a conversation among story characters. Each speaker's utterance could be marked by a sentence boundary, as in the following example:

5.10
F ... Sorede ne, (70)
... unto ... unto ... Sazaesan no ne,
... otoosan ga ... otoosan ga ne,
... kite ne,
... unto ... "chotto dake a aga aga agarina yo" tte ne,
... yutta no ne.
... Soshitara ne,
... unto Norisukesan ga ne,
... "chotto dake ... ag ... agarasete moraimasu" tte yutta no ne.

... Then,
... um ... um ... Sazaesan's,
... father ... father,
... came,
... and um ... said,
... "C co co come on in for a minute."
... Then,
... um Mr. Norisuke,
... said "thank you, I'll co ... come in ... just for a minute.

Sometimes when two utterances formed a pair, especially a question-answer pair, both were presented in a single sentence. In the following example, the first question-answer pair on lines 5-7 is concluded with a sentence boundary, and the second pair on lines 8-12 is placed in a separate sentence.

- adult
F ... De, (71)
shibaraku shite',
... ano Norisuke ojisan no okusan no byooki ga naotte',
... lkurachan to issho ni Sazaesan toko e asobi ni kita toki ni',
5 ... to "dooshite ... ano ... Ikurachan-- ... Ikurachan ga',
... tsukue o aketari koto ga wakatta no?" tte ittara',
... "Ikurachan ga oshiete kureta" tte yuu wake.
... De "akachan-- ... kuchi ga kikenai no ni,
... kuchi ga kikenai no ni" tte,
10 minna ga ... kiitara',
... unto ... nanka ... "akachan no kotoba wa',
... okaasan ni wa wakaruru" tte yuu wake.
- ... And,
after a while,
... un Mr. Norisuke's wife got better,
... and when she came to Sazaesan's place with Ikura to visit,
5 ... they said "how did you know that uh ... Ikura ... Ikura,
... opened the desks?"
... "Ikura told me" she said.
... And when everyone ... said,
... "but the baby ... can't talk,
10 ... he can't talk,"
... uh ... um ... she said "a mother can understand,
... her baby's speech."

Speakers of all ages in this sample marked the ends of single utterances or conversational pairs with sentence-final closure; such sentences were generally among the shorter ones in the narratives. These cases seem parallel to examples (61-63) in that the sentence boundaries mark subtle shifts in point of view, in this case from one story character to another. Speakers' frequent use of sentence boundaries within dialogue suggests an additional reason why Chafe's sample of Japanese narratives tended to have much longer sentences on the average than the Sazaesan sample. Whereas the Sazaesan videotape included a large amount of dialogue, the film used for Chafe's project had no speech, so that it could be shown to speakers of different languages. Apparently, speech turns are one source of natural boundaries within a story, and the inclusion of dialogue in a narrative results in higher frequencies of sentence-final

closure.

Although sentences in the Sazaesan stories often coincided with units of dialogue or narrative structure, a great number of the sentences did not delimit coherent units. Many sentences were too short, as in example (57), and either did not correspond in an obvious way to any kind of unit, or else presented only one part of a larger unit. For example, the main events of an episode were sometimes presented in more than one sentence, and different speakers subdivided the same event sequence differently. In the following case the child places the initiating event and one immediate result in the same sentence, and another result in a new sentence.

- 3.11
M ... unto ne, (72)
... Katsuochan to ne Wakamechan ne,
... hanashi shiteru toki ni,
Ikurachan ga ne,
5 ... mono o nagete ne,
... soshitara ne,
... unto ... koohii no naka ni haitchatta no.
/Interviewer: Haitchatta no?/
... Keeki ga ne,
... sono toki,
10 ... sorede kakatchatte ne,

... um,
... when Katsuo and Wakame,
... were talking,
Ikura,
5 ... threw something,
... and then,
... um ... it went into the coffee.
/Interviewer: It went into it?/
... The cake,
... then,
10 ... then it splashed on him,

This child's sentences were too short to coincide with the narrative category "events"; but if "events" were subdivided into "initiating

event" and "results", the sentence boundaries would still fail to coincide with the structural boundaries. Although some sentences seemed to be too short, others seemed too long, incorporating more than one coherent structural unit. A typical case is provided by example (71), in which the first sentence includes both the episode setting and the first dialogue pair. As examples (64-71) have shown, even when sentences did delimit coherent units, the level of inclusiveness of these units differed significantly, both across speakers and within the narrative of a single speaker, ranging from entire episodes to single speech turns. In the following case, sentence boundaries mark the setting-events shift at lines 2-3, and the episode boundary at lines 5-6. The sentence boundary on the last line occurs at another setting-events shift, but the episode boundary on line 12 is not marked by sentence-final closure.

- Adult ... Otooto to imooto ga iru no; (73)
F Sazaesan ni ne.
... Sore wa moo ne "konna itazura na no wa ne,
moo taihen dakara ne,
5 ... shikatta hoo ga shikatta hoo ga ii" tte yuu no.
... De sorede ne,
... sono aida ni ne,
Sazaesan ga',
... sono-- ... Ikurachan o ie ni oite ne,
10 ... /inaudible/ tokoro ni itte',
... iroiro ... ano otetsudai shite,
kaette kite,
... shite yuugata mo ne,
... ano Sazaesan no otoosan kaette kuru n dakedo,
15 ... moo uchi no naka ga tenya wanya de',
... ano-- ... oyuushoku no ... sh shitaku mo naka naka
dekinai no.

... Sazaesan has a younger brother and sister,
... They say "really a child this mischievous,
it's really awful,
5 ... so you should scold him."
... And then,
... during that time,

- ... Sazaesan,
... leaves ... Ikura in her house,
10 ... and goes to /inaudible/ place,
... and helps out ... in various ways,
... and comes back home,
... and then at night,
... um Sazaesan's father comes home,
15 ... but really the house is a mess,
... and uh-- ... they just can't get around to
pre preparing ... dinner.

As this example shows, the same narrator may mark a particular structural unit with sentence boundaries at certain points, but not at others. If the speaker fails to mark a more inclusive unit, such as an episode, and also places sentence boundaries after smaller, episode-internal units, the result will be an "incoherent" unit, such as the sentence on lines 6-16 of the preceding example, which incorporates one entire episode as well as the setting of the following episode. It is not surprising that within a complex discourse such as a narrative, in which there are several types of structural units, any or all of which could be marked by sentence boundaries, there will be little agreement across speakers, or even within a single narrative, on which units will be marked by sentence-final closure.

In cases like example (73) it appears that narrators are aware of the structural boundaries at different levels of inclusiveness, but are marking them inconsistently. Thus although the stretches of narration delimited by two sentence boundaries often did not constitute a coherent unit, individual sentence boundaries typically occurred at the ends of discourse units. Table 16 presents the percentage of sentences at each age group which were coherent units, including all the categories within structural schemas, individual speech turns, and dialogue pairs,

TABLE 16. Percentages of sentences and sentence boundaries coinciding with narrative units.

Age	Coherent Units	End of Units
3.10-4.8	.30	.86
5.0 - 5.4	.26	.79
6.8 - 6.0	.23	.82
6.4 - 6.8	.27	.80
7.0 - 7.4	.20	.70
Adult	.18	.62

and also indicates the percentage of sentence boundaries which occurred at the ends of these units, regardless of whether the individual sentences delimited coherent units. It is clear that in the stories of both adults and children, most sentence boundaries marked the end of coherent units, but most sentences did not consist of coherent units. Apparently, many sentence boundaries were placed within single units or around more than one coherent unit. Since speakers tended to have fixed sets for sentence length, it is apparent that depending upon the amount of detail a speaker includes in a particular narrative unit, the level of narrative structure marked will vary. Thus if a speaker produces a centralized episode followed by an elaborated setting for the next episode, but places a sentence boundary after approximately every three clauses, he will end up treating both the episode and the episode setting in the same way. Since the youngest children did not elaborate structural units very extensively, and also tended to use shorter sentences, a higher percentage of their sentences coincided with short, coherent units and occurred at the ends of these units. The adults tended to

elaborate background information and to recount longer single speech turns of story characters. Both types of material were typically presented in shorter sentences, so that the adult narratives had slightly more sentences too short to encompass an entire coherent structural unit, and a somewhat lower percentage of sentences which coincided with or marked the ends of such units.

The figures in Table 16 suggest some hypotheses about the nature of sentence formation during verbalization. As the table shows, structural boundaries corresponding to narrative schemas are often unmarked or marked inconsistently; the boundaries of more inclusive units are often ignored while smaller units are marked. This suggests that speakers have a rather diffuse awareness of fuzzy discourse boundaries of different strengths rather than a clear-cut mental hierarchy of distinct structural units which are felt to be quite different from one another by virtue of their position in that hierarchy. Since the units marked by sentence boundaries differ so greatly in size, it seems unlikely that sentence formation is based upon the retrieval of fixed cognitive chunks formed in accordance with narrative schemas during the processing of story input. At least in the Sazaesan stories, speakers did not seem to "see the end" of the units which they began to verbalize in a new sentence; often, by the end of a unit, they seemed to have lost a sense of the unit as such and did not conclude it with sentence-final closure. In the case of the "endless sentence," however, the speaker apparently keeps in mind throughout the story his intention of using sentence-final closure only at the end of his narration, and in this sense seems to be aware of the story as a single, large unit.

Although many potential boundaries were ignored by narrators in creating the sentence level, the figures in column two of Table 16 indicate that the primary motivation for sentence-final closure in the Sazaesan stories was speakers' awareness of a structural boundary in the material they were narrating. This awareness must come at least by the end of the last clause preceding a discourse boundary, when the speaker must commit himself syntactically and intonationally to marking the end of a sentence. In some cases, the speaker may realize that he is at the end of a unit because he has no further information retrieved and awaiting verbalization. Probably in most cases the speaker already has some awareness of the material which he will begin to verbalize next as he reaches a point of sentence-final closure, especially within episodes, where speakers usually did not experience severe memory problems. For example, speakers often placed a sentence boundary before a story character began to speak, or between the speech turns in a question-answer pair, apparently in anticipation of the new material. Since the great majority of sentence boundaries occur at the ends of structural units, it appears that at any given point in narration a speaker has in mind both the nature of the last few clauses produced, and some awareness of what is to come, even if only that he has not yet decided what to say next; if the two are sufficiently different, he will end a sentence. Thus sentence boundaries typically coincide with a change in the speaker's "center of interest" [cf. Chafe, 1980] or with drops in the degree of cohesion between successive clauses, as Bernardo [1976] found.

The inconsistencies of single speakers in marking structural boundaries with sentence-final closure is reminiscent of the individual

inconsistencies in the adequacy of background information provided at different points in the course of a narrative. Apparently, the degree of attention which speakers devote to constructing the sentence level in discourse varies even within a single story. It seems likely that the difficulty of the other tasks involved in telling a story, such as retrieving information from memory and taking the listener's point of view, as well as possible individual differences in planning ability, influence the amount of attention which the speaker can give to the creation of sentences, which is not as crucial. If, for example, a speaker is having difficulty remembering how a story continues, he may fail to mark the end of the episode which he is finishing even if he usually marks the ends of episodes, simply because his attention is otherwise occupied.

The difficulty which speakers have in planning the sentence level during narration is reflected not only in the failure to mark certain boundaries, but also in the premature marking of others, which are then completed with one or more afterthoughts. Chafe [1980] cites numerous cases in which his American narrators decided to conclude a sentence with syntactic closure and falling pitch, but then went on to add further information to that sentence. In the Sazaesan narratives too, speakers sometimes decided to continue a sentence after completing a clause with sentence-final forms and intonation; they either added further information or clarified information which had already been presented, as in the following two examples:

Adult	... de ne,	(74)
M	... otoosan ga sono uchi kaette kuru no.	
	... Sono Sazae no uchi no ne.	

... and,
... the father comes home to their house.
... Sazaesan's family's father.

Adult ... Sono hito ga ne, (75)
M ... ano byooki ni natchatta no.
... Aru hi ni.

... That person,
... uh got sick.
... One day.

Sometimes an entire clause would be added, often with repetition of the last clause preceding the premature sentence boundary, as in the following child's narrative:

6.4 ... ojisan ga kite ne, (76)
F ... demo ne,
akachan ne,
... tsurete konakatta no ne.
... O.. okaasan ga ne,
... obyooki ga ne,
... sukoshi ne,
... naotta kara ne,
... konakatta no.

... his father came,
... but,
... he didn't bring,
the baby.
... M.. his mother's,
... cold,
... got a little,
... better,
... so he didn't come.

The lack of correspondence between narrative and sentence structure, at least in these narratives, seems to arise from the cognitive demands of the verbalization process, and speakers' inability to preplan their narration of certain parts of a story adequately while speaking.

Although sentences may not always coincide with narrative schemas

in oral narratives, the evidence from sentence boundaries is clearly not irrelevant to an understanding of story structure. The absence of a sentence boundary does not necessarily indicate that there is no structural boundary, and sometimes a new sentence may continue the same structural unit as the preceding sentence, but still the placement of the sentence boundaries which do occur almost always make sense structurally. Despite the influence of factors other than schemas, the percentage of sentence boundaries placed at the ends of structural units in the Sazaesan stories was extremely high. Furthermore, in written texts sentence formation is not subject to the limits of time and cognitive processing imposed in the production of oral narratives, and the correspondence between linguistic and narrative structure may be considerably higher. Therefore, it would be advisable to take into consideration the placement of sentence boundaries in formulating narrative schemas, and especially in analyzing the fit between particular stories and general schemas; in the case of oral narratives, sentence boundaries can also be examined to increase our understanding of the verbalization process.

Inter-Clausal Connectives

The use of sentence-final grammatical and intonational closure serves as a boundary between successive clauses in a narrative; within sentences, clauses are more closely linked by various forms of inter-clausal connectives. Chafe [1980] discusses the different degrees of cohesion between clauses which can be achieved by linguistic means: a sentence boundary represents "maximum independence" between clauses, greater integration is created by linking clauses with "and", and clauses

connected with "but" and "so" are even more closely united. These conjunctions were the preferred means of linking clauses in Chafe's sample; Syder and Pawley [in preparation] have also found that in spontaneous oral English coordinate conjunctions are preferred to subordinate ones, such as "if", "while", "because" and "although". Labov [1972] also found that the conjunctions "while", "though", "since" and "because" were almost entirely absent from the narratives of speakers under 13 years of age, and were rare even in adults' stories. Syder and Pawley hypothesize that speakers formulate speech "one clause at a time" and frequently encounter difficulties when they attempt to use subordination.

Why do speakers of English use coordinating conjunctions in "basic narrative syntax"? Chafe suggests that the limited capacity and duration of consciousness cannot easily handle syntactic strategies which require the speaker to focus his attention on the verbalization process itself while attempting to tell a story. In English, subordinating conjunctions like "when" require the speaker to prepare two clauses and to indicate the semantic relationship between them at the beginning of the first clause. The use of coordination, in contrast, allows speakers to formulate each clause in succession, making the relationship between clauses explicit only at the start of the second clause.

In Japanese conjoining clauses necessarily involves somewhat different production strategies because the clause structure is different from English. In the Sazaesan stories, the great majority of clauses which were not sentence-final ended with a verb; conjoining was achieved either by using various non-finite verb forms such as "-te", (and/and then)

or by adding a conjunction such as "kara" (so/because) to a verb form that has been inflected for tense and politeness level and which could have been sentence-final. Sometimes clauses are connected by independent lexical items, such as "toki" (time), which can optionally be followed by "ni" (at); these forms are actually head nouns modified by the preceding clause, but are syntactically and semantically similar to other conjunctions. All of these connectives are intonationally linked to the verb at the end of the first clause; therefore, Japanese speakers must decide by the end of each clause whether to link it to the following clause, and what semantic relation between clauses to express. Thus the decisions involved in conjoining clauses come at a slightly earlier point in Japanese than in English, and there is no great timing difference in the planning of clauses linked by connectives that translate as coordinate versus subordinate in English. Any differences in frequency among the various types of clause-final connectives in Japanese, therefore, probably are not based upon the nature of the verbalization process, as the "basic narrative syntax" of English seems to be. In addition to clause-final conjoining strategies, Japanese speakers may also add a connective at the beginning of the second clause which may make the semantic relation between clauses more explicit. Although clause-initial conjoining represents a second decision point, it is optional, whereas all verbs at the ends of clauses must be marked as final or non-final, with a sentence boundary or a connective.

In the Sazaesan narratives, there were only six inter-clausal connectives which were used with any frequency across speakers: the non-finite verb forms "-te" (and/and then), and "-tara" (when/if); the

conjunctions "kara" (so/because), "kedo" (but), and "to" (when/where-upon/whenever/if), and the head noun "toki" (the time that/when). Table 17 presents the proportional frequency of these connectives at each age, and also summarizes the proportion of other connectives, grouped according to semantic type. Of these less frequent connectives, purpose was expressed by "-i ni" (in order to), "tame" (for the purpose of), and "yoo ni" (so that); coordination by "shi" (besides/moreover), or "-tari" (in turn, alternatively); conditionality by "-eba" (if) or "nara" (if); temporal relations by "-te kara" (after), "ato" (afterwards), and "made ni" (until); adversative relations by "-nagara" (whereas/while), "no ni" (although) and "-te mo" (even though); comparisons by "mitai ni" (like) and "yoo ni" (the way that). These forms never comprised more than 10% of the total number of connectives used by any age group of children. The adults, however, used a greater variety of connectives, 17.6% of which were forms other than the six most popular ones.

As Table 17 indicates, by far the most common clause-final connective at all ages was the verbal inflection "-te". This form served a great variety of semantic functions: to describe closely bound temporal and/or causal event sequences, on-going activities and states which serve as the background for a punctual event, two simultaneous actions or events which in English would be expressed by a participial construction in "-ing", and two simultaneous activities or states which in English would be connected by "and". The children used "-te" to describe simultaneous states much less frequently than the adults, probably because they presented less background information. "-Te" was also used in these narratives to connect clauses describing events which occurred in loose

TABLE 17. Relative proportions of clause-final connectives.

Age	te	tara	kara	kedo	toki	to	purp.	coord.	cond.	temp.	adver.	comp.
3.10-4.8	.60	.10	.14	.02	.02	.02	.08	.02	--	--	--	--
5.0-5.4	.63	.13	.09	--	.02	.01	.03	.04	.02	.03	--	--
5.8-6.0	.80	.09	.06	.01	.006	--	.02	.02	--	--	--	--
6.4-6.8	.73	.08	.06	.01	.03	.01	.04	.003	.02	.006	.01	--
7.0-7.4	.75	.09	.06	.02	.004	.004	.05	--	.008	.004	.004	--
Adult	.46	.08	.10	.12	.01	.05	.05	.04	.02	.03	.03	.006

temporal sequence, sometimes with fairly large time gaps between the two events connected with "-te". Perhaps because "-te" can express distant or loose temporal connections between events, it sometimes serves as a "default" connective. In the Sazesan stories "-te" was sometimes used in the last clause of an episode even when the speaker experienced difficulty recalling the next episode, and was probably not intending to express a specific semantic link with the first clause of the next episode. This "default" usage occurred in the stories of both children and adults; the following example is typical.

- 7.1
M ... sorede ne, (77)
... oniichan mo kaette kite ne,
... unto ... ne,
... hon o ne,
5 ... mata akachan ga yatchatte ne,
... soshite ... soshite,
... Tara ... unto ... sono akachan no ojichan ga kite ne,

... then,
... Katsuo came home too,
... and um,
... the baby messed up,
5 ... his books too,
... and then ... then,
... Tara ... um ... the baby's father came,

A huge time gap separates the events described on the fifth and seventh lines and the extensive hesitating between them suggests that the child may not even have had the next episode in mind when he concluded the episode on line 5 with "-te".

The connective "-te" covers much of the semantic range which is expressed by three of the most common conjunctions in English narratives: "and", "then", and "so". Following "-te", the most common connective in the Sazaesan stories at most ages was "-tara", which incorporates the past tense morpheme "-ta". Semantically, "-tara" presupposes that the action

or state expressed by the verb was completed or finished before the event or state in the following clause [Kuno, 1973]. "-Tara" can be used both in a temporal sense, in which case it can be translated by English "when", or in a conditional sense, where it corresponds to "when" or "if". In its temporal function "-tara-" was frequently used to set the stage with arrivals or background activities, before the speaker proceeded to the main events of an episode, as in the following example. (Note that the position of "-tara" in the Japanese examples (78-80) is at the end of the clause which begins with "when" in the English translations.)

- 6.5
M ... ato ne, (78)
... koohii toka ne,
... nonde tara ne,
... Ikurachan ga ne,
... kasutera ne,
... koohii n naka ni irete ne,

... afterwards,
... when they were drinking,
... coffee and all,
... Ikura,
... put a piece of cake,
... into the coffee,

One of the most common uses of "-tara", was to conjoin two speech turns, usually a question-answer pair, as in the following case:

- 6.4
M ... sorede ne, (79)
... otoosan ga kaette kite',
... soshitara ... "yuugohan wa?" tte yuttara,
"mada desu yo" tte yutte,

... then,
... their father came home,
... and then ... when he said, "what about dinner?"
she said "it isn't (ready) yet,"

In certain cases, "-tara" seems to convey less backgrounding of the event in question than English "when"; moreover, both formally and

semantically "-tara" is less different from "-te" than "when" is from "and" or "then". The Japanese speakers in this sample frequently used "-tara" in recounting main events, at points where English speakers would probably use "and" or "and then" rather than "when". In the following example "-tara" is used after the main precipitating event within a tightly bound temporal/causal sequence.

- 5.2
F ... unto ne, (80)
"apuu" tte ne,
... Ikurachan ga ne,
... itte ne,
... unto ne,
... okashi nagetara ne,
... de koocha n naka haitte,
... unto kakatchatta.

... um,
... Ikura,
... said,
... "apuu",
... and um,
... when he threw a piece of cake,
... it went into his tea,
... and um it splashed on him.

The distribution of "-tara" was a subset of that of "-te", which also occurred in each of the environments illustrated in examples (78-80). "-Tara" seemed to function primarily to set off a certain clause within the sequence of "-te"'s, indicating a closer degree of cohesion with the following clause, for which the clause ending in "-tara" provided a temporally and/or causally related background condition.

The temporal connectives "to" and "toki" were used less frequently. In the adult narratives, the distribution of the conjunction "to" was almost identical to that of "-tara", although "to" occurred much less often. As a temporal conjunction, "to" was used to establish background information such as arrivals and time changes, to mark initiating actions

in event sequences, and to set off the first member of a conversational exchange, usually a question-answer pair. The connective "toki" (when) was also extremely rare. It was used primarily to set the scene for a new episode, in clauses recounting arrivals and ongoing background activities. Thus "toki" was restricted to strongly backgrounded information, and in this way was more similar to English "when" than "-tara" or "to".

By far the majority of clause-final connectives at all ages expressed temporal relations between events; this was the most common function of "-te", "-tara", "toki", and in the adult narratives, of "to". The only non-temporal connectives used with any frequency were "kara" (so/because) and "kedo" (but). "Kara" was used by the adults and children to express relations of motivation, reason, and physical causality between clauses.

The conjunction "kedo" (but) was common in the adult narratives, but quite rare in the children's. Like English "but", "kedo" can be used to express semantic opposition or events and situations that are contrary to expectation. This was the only usage in the stories of children under six years old. In the adult narratives, "kedo" was usually used to mark shifts in point of view and other discourse boundaries; thus it seems to function as an alternative to sentence-final closure. In fact, in Japanese conversation "ke(re)do(mo)" is often used as a sentence-final form which serves to soften the assertiveness of an utterance, and can convey an apologetic impression. The adults and certain seven year olds used "kedo" in this way at points of memory failure or self-doubt, where the information preceding "kedo" seemed parenthetical, as in the following

examples:

- Adult ... Mada kotoba ga shaberenai kara, (81)
M ... issai-- zengo da to omou n desu kedomo',
... ano ... ano Norisuke ojisan no,
... ano-- okusan ga,
... byooki ni natchatta n de,

... He still can't talk,
... so I think he's around one year old,
... but um ... um since Mr. Norisuke's
... um-- wife,
... got sick,

In these cases "kedo" seems approximately equivalent to "but anyway" in English. Frequently, adults used "kedo" at transition points between subparts of episode schemas or at episode boundaries, where it served to mark the discourse units rather than to provide a specific semantic connection between successive clauses. Perhaps this use of "kedo" can also be viewed as contrary to expectation in that the speaker is going against the expectation that he will continue the current discourse unit or point of view. For example, in the following narrative "kedomo" on line 7 occurs at the end of an episode, and seems to substitute for sentence-final closure.

- Adult ... sono ... uu ano ... Katsuokun toka Wakamechan toka, (82)
M ... /clears throat/ wa moo,
... kankan ni natchatte,
... ta n desu kedomo,
5 ... shit ... ano-- ... uu maa,
... shikata nai kara,
oitoita wake desu kedomo,
... de sono-- ... Katsu ... eto-- Norisuke ojisan ga,
10 sono ... tazunete kite',

... um ... um um ... Katsuo and Wakame,
... /clears throat/ really,
... got mad,
... mad,
5 ... but th... uh-- ... uh well,

... there was nothing they could do,
so they let it be but,
... and uh-- ... Katsu ... um-- Mr. Norisuke,
uh ... came visiting,

The children in this age sample were apparently below the age at which this sentence-final usage of "kedo" in narratives is acquired.

As examples in this chapter indicate, exactly the same discourse environment could be treated in many different ways. Thus, for example, the arrival of a character could be separated from the following events by a sentence boundary, or linked to them by any one of several connectives, including "-te", "-tara", "to", "toki", "kara", or "kedo". Question-answer pairs could be placed in two separate sentences or connected by "-te", "-tara", "to", or "kara". Since all speakers were telling the same story, it was often possible to observe precisely the same two events from the videotape related in several different ways by different speakers.

There were no striking developmental differences in the use of most conjunctions across the age range of children; the major differences between the children's and adults' use of conjunctions was that children used "-te" much more frequently than adults, and used "-te", "to", and "kedo" for a more limited range of functions. The "'-te' ratio" at different ages can be found in the first column of Table 17; clearly, children throughout this age range preferred "-te" to any other form of connective. This preference even increased with age; the younger two groups had higher proportions of "kara" and "-tara" than the older children, who used "-te" to conjoin clauses about 75-80% of the time. Since the semantic and discourse functions of "-te" are so varied, it is

clearly the "safest" option for ending a clause. It is appropriate for the majority of inter-clausal relations which occur in narratives, and therefore will probably be correct even if the narrator is not yet certain of the content of the next clause he will produce. The other conjunctions have narrower functional ranges than "-te", and so there is a greater chance of error if they are used in a default or unplanned fashion.

The decisions involved in planning the relationships between clauses are illustrated in a revealing way by self-corrections. When speakers changed from one conjunction to another, it was almost always from "-te" to a more specific connective. In the children's stories, half of these changes were from "-te" to "-tara", in that subset of "-te"'s semantic range in which "-tara" was also appropriate, such as the establishment of background information or question-answer pairs, as the following cases illustrate. (Since both "-te" and "-tara" are verb-final, there is less difference between the self-correction and the original clause in Japanese than in the English translations.)

5.9
M ... asa kite ne, (83)
... asa kittara ne,

... morning came and,
... when morning came,

5.8
F ... ojisan ga ne, (84)
tsukue aketa no ne,
... shitte ta wake;
... "sore ... dooshite?" tte yutte ne,
... yutttara ne,
... "Ikurachian ga ne,
oshiete kureta" tte yutte ne,
... his father,

... knew,
that he had opened the drawers;
... "how (do you know) ... that?" they asked and,
... when they asked,
... "Ikura,
told me" he said,

Sometimes, having used a clause-final connective, usually "-te", the speaker would decide that he should have ended the sentence with that clause. In the following example, the child makes this planning error twice.

- 5.8
F ... Wakamechan no ne, (85)
... oniis ... oniisan ga ne,
... "dooshite soo okoranai no?" tte yutte ne,
... itta wake.
... Sorede ne,
... sorede ne,
... sono ne Sazaesan no okaasan ga komatte ne,
... komatchatta no.

... Wakame's,
... bro... brother,
... said "why don't you get angry?" and,
... he said.
... Then,
... then,
... Sazaesan's mother didn't know what to do and,
... she just didn't know what to do.

Sometimes the reverse occurred, and speakers repeated a clause which had been given sentence-final closure, connecting it to the following material. This was usually done in order to add material, after which the speaker decided to use a conjunction, and not merely to replace sentence-final closure with a connective. The following case is typical.

- 7.3
M ... sorede s sugu kaetchatta no. (86)
Sore ... sorede ne,
... sorede ... Ikurachan ne,
... are ombu shite,
kaette ne,

... and then s soon he went home.
Th... then,
... then um carrying,
Ikura,
he went home and,

There was an interesting developmental trend in the self-corrections which occurred in relating successive clauses. Although the numbers were very small, such changes increased slightly from the children under 5.8 years to the three older groups, and the number of children per group having at least one such change also increased. The adults, with a total of 25 changes made by seven of the ten speakers, had more than three times as many changes as any age group of children. Thus although the adults used a greater variety of connectives, this variety was apparently achieved at the price of an increase in planning failures. The adults, it appears, directed more attention to self-monitoring than the children, who were satisfied with "safe" options and repetitive conjoining strategies.

The general picture of conjoining based on clause-final decisions is supported and supplemented by a consideration of clause-initial connectives. These forms usually consist of proforms plus the clause-final conjunctions and/or some form of the verb "suru" (do). Table 18 presents the proportional frequency of the most common clause-initial conjunctions at each age. By far the most common was "sorede" (then/and then) which consists of the pronominal "sore" (that) plus "de", the "-te" form of the copular "da". Certain speakers preferred "soshite" (then), which is composed of the adverbial "soo" (in that way) plus the "-te" form of "suru", literally, 'having done so'. A childish alternative to this form was "sore kara" (after that). These forms accounted for 75-90%

TABLE 18. Relative proportions of clause-initial connectives.

Age	sorede/ soshite	soshitara	de	sore kara	dakara	demo	other
3.10-4.8	.90	.06	--	.02	--	--	.02
5.0-5.4	.75	.08	.09	.02	.03	--	.03
5.8-6.0	.68	.09	.08	.12	--	--	.02
6.4-6.8	.83	.05	.05	.006	.02	.01	.03
7.0-7.4	.86	.01	.006	.09	.01	.005	.01
Adult	.42	.09	.30	.004	.04	.06	.08

of all clause-initial connectives in the children's stories. They served as formulaic continuation devices and time-filling hesitation forms as well as true conjunctions indicating temporal succession. In the following case, for example, the child is describing a single still image from the videotape.

- 6.6
F ... sorede ne, (87)
... I Ikurachan ga nanka okimono o kite ne,
... sorede,
... Ikura ... A! ... Wakamechan ga',
... okimono o kite,
... sorede Ikurachan ga ne,
... sono mae ni suwatte te ne,

... and then,
... I Ikura um wore a kimono,
... and then,
... Ikura ... Oh! ... Wakame,
... wore a kimono,
... and then Ikura,
... was sitting in front of her,

Less than 10% of the time, adults and children used "soshitara", which incorporates "soo" (in that way) and the "-tara" form of "suru", literally, "when (he) did that". "Dakara" (so/therefore) was very rare; "demo" (but) was more common among adults but did not occur at all in

the stories of children under 6.4 years old. All of these conjunctions could be used following "-te", but, in general, there was a tendency to match forms, for example, using clause-initial "dakara" after clause-final "kara" and clause-initial "soshitara" after clause-final "-tara". The pervasive "sorede/soshite" were usually used at the beginnings of new sentences and following "-te", but also after more specific connectives such as "kara" (so/because), where they seemed to indicate a self-correction and a switch to a different semantic relationship between clauses.

As with clause-final connectives, there were no striking developmental differences, except for the comparison between the adults and children. Again, the adults used a greater number and variety of connectives, including rather sophisticated expressions, such as "tonikaku" (anyway) and "yoo suru ni" (in short), as well as "sono ato" (after that) and "sono toki" (at that time), which were also used by the children. Otherwise, the only major difference between the adults and children was that the adults used a proportionally higher frequency of "de" (and) and lower frequency of "sorede" (and then). "De" is stylistically somewhat more formal than "sorede", which probably accounts for this finding.

Thus in Japanese, speakers have four different formal options for relating successive clauses: (1) a sentence boundary, (2) a sentence boundary with a clause-initial connective, (3) a clause-final connective, and (4) both a clause-final and a clause-initial connective. These strategies represent a continuum of inter-clausal cohesion. Using a sentence boundary without a clause-initial connective leaves any relationship between clauses implicit, and emphasizes the boundary or lack of

cohesion between clauses. Using sentence-final closure with a clause-initial conjunction both indicates the presence of a boundary and specifies a semantic relationship between clauses. There is greater cohesion between clauses which are conjoined within the same sentence; when both clause-final and clause-initial connectives are used, the semantic relationship is usually marked redundantly. To analyze developmental trends in the use of these four strategies, each Sazaesan story was categorized according to the strategy preferred by the narrator. A preferred conjoining strategy was defined as any strategy or strategies which a narrator used at 40% or more of the clause transitions in his story. Table 19 presents the number of narrators in each group who preferred different strategies.

TABLE 19. Preferred conjoining strategies of individual narrators.

Age	(1)	(2)	(1)&(2)	(3)	(2)&(3)	(4)	(3)&(4)	No Preference
3.10-4.8	1	2		2	1			1
5.0 - 5.4		3	1	4			2	
5.8 - 6.0	1	1		4		1	1	2
6.4 - 6.8		1		6		1	1	1
7.0 - 7.4				5		3		2
Adult				4				6

As Table 19 shows, very frequent use of sentence boundaries between clauses, both with and without clause-initial connectives, represents a developmentally early strategy. Among the children over five years of age, linking successive clauses by clause-final connectives was the most

frequently preferred strategy; adults were not different from the children in this respect. The use of "double-marking," with connectives both clause-finally and clause-initially, does not appear as a preferred strategy until the age of five, and is especially popular among the oldest group of children. The adults were very different from the children in that the only preferred strategy was linking clauses with clause-final connectives; most speakers did not use a single strategy as much as 40% of the time, but varied the types of inter-clausal connections. Thus a consideration of preferred conjoining strategies suggests that the superficial similarity in sentence length between the youngest children and the adults noted on Table 14 has different bases. The youngest group of children had a short average sentence length because many of them did not, or could not, link successive clauses verb-finally. The adults, in contrast, had a short average sentence length because they were trying to create variety in their inter-clausal connections; no speakers used single-clause sentences in preference to other strategies for conjoining clauses.

Summary and Conclusions

In a narrative the option of concluding a clause or series of clauses either with a connective or with syntactic closure and sentence-final falling pitch provides the speaker with a means of creating linguistically marked structural units. In the Sazaesan stories the units delimited by sentence boundaries did not usually coincide with single units of narrative structure; apparently, the formation of sentences in these stories was not based upon the prior existence of cognitive chunks

in memory, which could be accessed and verbalized as whole units, nor upon the speaker's identification of the sentence level with any particular level of discourse structure. Instead, speakers seemed to have sets for sentence length, that is, to have the intention to create multi-clause sentences within a certain size range, and would place sentence boundaries at the ends of discourse units of different types which occurred in their narrative within that preferred range of sentence length. The particular set for sentence length which a speaker chooses seems to depend upon his goals in the narrative context, and is fairly flexible within his story, changing temporarily, and sometimes permanently, in response to the content of the material being narrated. An examination of the placement of sentence boundaries in the Sazaesan sample suggests that speakers recognize at least the following discourse units: the entire narrative, story setting, episodes, episode settings, event sequences, reactions, departures, speech turns, conversational pairs, evaluations, introspections, questions, comments, and codas. Since the conclusions of these units were sometimes ignored even though a speaker usually marked a particular kind of unit when it fell within his set for sentence length, it appears that speakers devote varying degrees of attention to the formation of the sentence level during narration, probably depending upon the other cognitive demands being imposed at different points. In this respect the creation of multi-clause sentences is similar to other aspects of narration, such as the presentation of background material or the problem-resolution organization of themes: adult speakers vary in their degree of skill, and a given speaker may be more or less successful in implementing his skill at different points

in a single story. Thus formation of the sentence level in stories fits the general profile of a discourse skill which is acquired to differing degrees, on the basis of a highly variable adult model; there is no clear end-point at which acquisition is complete and comparable in all mature speakers.

Prior research on narratives in English has indicated that there tends to be a "basic narrative syntax" within sentences; clauses are typically connected by the conjunctions "and", "then", "so" and "but". Since the use of subordinating conjunctions in English would require the speaker to plan at least two clauses at a time, it has been suggested that the typical coordinating strategy in English stories has a cognitive basis, with speakers preferring to formulate one clause at a time. In the adults' Sazaesan stories, the four most common connectives, "-te" (and/and then), "-tara" (when), "kara" (so/because) and "kedo" (but), accounted for 76% of all clause-final conjoining within sentences, and covered approximately the same semantic range as the most common conjunctions in English. (Although "-tara" is often translated as "when", it actually seems to convey a more closely integrated form of "and then", since it is used for main events which are only slightly backgrounded.) In the children's stories, "kedo" was rare, but the other three basic connectives accounted for from 84% to 95% of clause-final conjoining, with no obvious developmental trends. There are grammatical differences among the common connectives: "-te" and "-tara" are common verb forms, and may be acquired very early, before conjunctions like "kara" and "kedo"; and forms like "toki" (when/the time that), which are head nouns of relative clauses, may be more difficult grammatically and acquired later

than ordinary conjunctions. However, for speakers who have already acquired these three types of connectives, the difference involved in using them seems, from a cognitive point of view, to be minimal. All are produced at the end of the first clause, allowing the speaker to produce his story "one clause at a time," while requiring that he decide the nature of the semantic relation between two clauses before pausing and going on to the second clause. Thus in Japanese the "basic narrative syntax" seems to have a primarily semantic basis: the four most common connectives are apparently used so frequently not because they are significantly easier for speakers to produce, but because they are sufficient to cover the semantic range of inter-clausal relations which typically occur in narratives. At this point further research on the semantic and grammatical nature of conjunctions within narratives from other languages, and an analysis of the cognitive demands placed upon the speaker by different types of conjoining, would contribute to our understanding of "basic narrative syntax."

The development of sentence level and inter-clausal conjoining in narratives has not yet been studied ontogenetically. Since there is no research on the placement of sentence boundaries in conversation, it is not clear what influence the structure of sentences in ordinary speech has upon the child's acquisition of the sentence level in narrative discourse. Apparently children do not always immediately apply in narratives the ability to conjoin successive statements which they develop in conversational interactions, and which has been documented ontogenetically. The Sazaesan stories can provide only a composite hypothetical course of development of the sentence level in stories to

be verified or modified by future research.

In general, it appears that the child may begin his development of the sentence level within narratives by identifying the sentence with the clause, and producing a series of separate single-clause sentences, even at an age where he is able to conjoin clauses. At this stage, the child seems to plan only one clause at a time, and often waits to be prompted after each one. At an early point, Japanese children learn "sorede" or "soshite" (then/and then) as a more or less fixed, rather semantically empty formula for connecting these separate sentences. Next children begin to link successive clauses with non-final verb forms and conjunctions, creating a sentence level intermediate between the clause and the narrative. Some children eliminate all sentence boundaries, identifying the sentence level with the story as a whole; this linking strategy often involves redundant marking of the connection between successive clauses with an excessive use of clause-initial conjunctions, especially "sorede". It would be interesting to examine the development of individual children to discover whether the "endless sentence" strategy typically follows a stage of multi-clause sentence production. Development after seven years of age apparently involves acquiring the flexibility to vary the types of inter-clausal linkage within a story rather than relying predominantly on a single strategy, and, for those children previously using the "endless sentence," to learn to pay attention to a linguistic level between the single clause and the entire narrative.

CHAPTER 7

MEMORY FOR AUDIO-VISUAL NARRATIVES

Theories of Story Recall

When a story is told sometime after the events to be narrated were experienced, the source of material for verbalization is the speaker's memory of what happened, and the basis of narration is recall. Although memory has been studied extensively in this country for decades, until very recently the research has borne little relationship to ordinary memory processes. Memory experiments made use of extremely unnatural materials and tasks such as the memorization of digits, nonsense syllables, and word lists. More recently, influenced by developments in linguistics, memory research turned to the investigation of people's recall of individual sentences [cf. Anderson and Bower, 1974; Rumelhart, Lindsay and Norman, 1972]. In the past few years, stimulated by the revival of Bartlett's theory of memory, researchers have begun to investigate the recall of connected discourse, usually short narrative texts. Although both the tasks and materials investigated continue to be rather artificial, since people do actually retell stories which they read and see memory research has reached a stage where it may shed some light on the nature of everyday recall processes, and ultimately, people's memory for past experiences.

In the literature on the recall of narrative texts, there has been some controversy over the characterization of recall as reproductive vs. reconstructive. On the basis of his experiments, Bartlett concluded that memory is primarily reconstructive; people recall a story by

reconstructing it from a few accurately remembered details, a general affective "attitude" and pre-existing schemas. In Bartlett's theory, the recall process was also primarily assimilative; prior schemas influence a subject's initial comprehension of a new story and also operate during the interval between input and retrieval, reducing the discrepancy between the input story and the pre-existing schemas. A number of other studies replicated Bartlett's findings on the recall of written texts, and also characterized memory as inaccurate, constructive, and assimilative [Maxwell,1936; Northway,1936; Oldfield and Zangwill,1938].

Recent applications of Bartlett's theory of memory within the framework of story grammars have also emphasized the assimilative, constructive nature of recall. In this model, comprehension of prose passages takes place in terms of a subject's prior schema for narrative structure; this schema also directs recall of stories at the time of retrieval, leading the subject to add material which fits his story schema, to omit material which is inconsistent with this schema, and to transform the temporal sequencing of information in the original so that it corresponds more closely to the order in the schema. Since the story grammar model focuses on constituent structure, comprehension is described as the recognition and/or imposition of the structural units in the schema during input. These units are storied in memory and when the subject wishes to retell the narrative, he retrieves these cognitive chunks in accordance with the structural categories in his story schema. Recall is seen as a constructive process, even when stories are very accurately recalled; in these cases, there was presumably little or no need for assimilation of the input to a different, more typical or ideal schema.

Most recent research has dealt with immediate recall or very short time intervals compared with those used by Bartlett, and no theoretical account is given of changes which stored material may undergo in the period between comprehension and retrieval. Although most versions of schema theory do not assume that recall is entirely schema-governed, no explanation is provided for how people recall material which does not fit their story schema, or how errors and omissions might occur in material which does fit their schema.

Despite the accumulated evidence for constructive features in recall, certain findings also called into question the degree of importance which Bartlett placed upon reconstructive over reproductive processes. Kay [1955], for example, presented subjects with two prose passages, each read twice, and asked them to recall the two passages after five minutes of listening to other material. Although the subjects' recall contained the typical reconstructive additions, errors and omissions, an analysis based on content rather than verbatim reproduction revealed that 60-70% of the stories was accurately reproduced in most versions. About 25-28% of the story content was omitted, and only 9-13% was "incorrect." Kay pointed out that these findings contradict Bartlett's claim that "accurate recall is the exception and not the rule," and suggested that the kind of imprecise, affectively based recall which Bartlett described is characteristic of recall after very long time intervals. Immediate recall, Kay proposed, is based primarily upon a subject's initial interpretation or "perceptual analysis" of the material rather than a constructive effort, and is therefore more accurate.

Similar proposals were made by Gomulicki [1956] who described

recall as an "abstractive" process. He conducted an experiment in which 50 subjects read and immediately recalled prose passages, and found that the most striking feature of his subjects' recall was the selectivity of their omissions; as the length of the passage recalled increased from 13 to 95 words, there were more omissions, but the "key parts of the passage, giving its general theme" were preserved in almost all cases. Gomulicki suggested that the abstractive process operates concurrently with the process of understanding input, and depends on differentially distributed attention, which is focused mainly on the "action content." He concluded that Bartlett over-emphasized the reconstructive nature of recall, and proposed that recall is primarily abstractive, involving a selection and organization of the input which is based on the subject's initial processing.

Thus there has been controversy over the nature of recall, and whether memory for stories is primarily accurate but selective, or inaccurate and constructive. Experiments have revealed that the amount of constructive elements which appear in recall is influenced by the instructions given to the subject at the time of retrieval [cf. Gauld and Stephenson, 1967; Hasher and Griffin, 1978]. There is also evidence that the medium of the input story used will yield differing degrees of constructiveness in recall. Baggett [1977] found that recall of the film "The Red Balloon" was different in various respects from recall of a text based upon the film and edited until it was "structurally equivalent" to the film. In some ways, the recall of subjects who had seen the film was superior. Movie subjects wrote longer recall protocols than text subjects, and one week after seeing the movie, when text subjects tended

to summarize, movie subjects wrote even longer protocols. Movie subjects also omitted significantly fewer structural units than text subjects when recalling the story one week after input. Not only did the movie subjects recall more of the story spontaneously, but their recall tended to be more accurate. The errors of movie subjects concerned small details, whereas text subjects replaced parts of the story, such the exposition, complication, or resolution of an episode, with incorrect information. These additions of text subjects were based upon their expectations about typical event sequences in the world; for example, they might say that the boy in the film packed his lunch and prepared to go to school before setting out, although this information was not in the text. Additions became even more frequent in the recall protocols of text subjects produced one week after reading the story; these new "facts" were often errors, contradicting information explicitly stated in the text. Thus the text input apparently led to a more constructive type of recall, whereas movie subjects did not fill in details with "default values" based on their own expectations. Baggett hypothesized that this is because seeing a movie causes the sensation of an experience; movie subjects in her experiment showed a much stronger emotional response than text subjects, crying and applauding during the film. Apparently, an experiential input creates a richer, longer lasting memory than a text, and there is sufficient detail in subjects' memory of an audio-visual narrative so that they do not need to invent information during recall.

The story grammar model of recall, in which narrative units are comprehended and retrieved in accordance with pre-existing story schemas, was developed to account for the recall of texts. However, it has been

suggested that the processing of visual material also involves segmentation of the input into units which are stored and accessed separately. Carroll and Bever [1976] outline a model for processing films which is analogous to the psycholinguistic model of sentence perception presented in Fodor et al [1974]. In an experiment on the recognition of short film sequences, which were segmented into two parts by a change in the action and/or a cut, Carroll and Bever found that subjects took longer to recognize the part of the film sequences which occurred prior to the change in actions. The authors propose "viewers initially process material in real time until they reach a structural boundary. At that point all material is recoded into a more abstract holistic form and dismissed from immediate memory (that is, viewers perceptually segment the sequence). Viewers then proceed to the next unit." Similarly, Baggett [1977] proposes that while viewing a film, people comprehend the input in terms of their knowledge of structural schemas for stories, in particular, the exposition-complication-resolution schema proposed by Kintsch and van Dijk. Subjects in her experiment segmented photographs from the film "The Red Balloon" into episodes with considerable agreement, although there was less consistency in their judgments of the location of the episode-internal categories. Baggett proposes that, just as linguistic cues are used by readers to segment texts during processing, so certain cinematic cues, such as the placement of cuts, influences the segmentation of stories in the audio-visual medium. Of the 14 most common points chosen by subjects as the start of new episodes, 10 were marked by cinematic cuts in the film. In a movie, Baggett suggests, the length, form, and content of shots and their montage tell a viewer

which portions of the movie to assign to which components of a story. Thus a panoramic shot might signal the beginning of an episode, while shorter shot lengths and brief close-ups indicate the complication, and longer, more distant shots retaining the same characters and/or background mark the resolution, which might conclude with a "fade-cut." Since both movie and text subjects in her experiments could segment pictures or the text into units on the basis of the same schema, and their recall protocols were "structurally equivalent," Baggett concludes that the comprehension and recall of audio-visual narratives involves a schema-based segmentation, storage, and retrieval similar to that of texts.

On the basis of his research on stories recounting the plot of a short film, Chafe [1979, 1980] proposes a different model for the recall of vicariously experienced narratives, which focuses on the "flow" of memories subserving the verbalization process. In this model, rather than retrieving distinct cognitive chunks, formed during processing and accessed as whole units at recall, the speaker telling a story calls to mind a series of "details" or "idea units," which are typically verbalized as clauses, phrases, or words having a single intonation contour. These "idea units" represent the amount of information to which a speaker can devote his central attention at any one time as he verbalizes recalled information; they are focuses of consciousness, governed by the same principles which direct the functioning of consciousness in acquiring information from the environment, or in scanning stored information during recall. During the verbalization of remembered experience, the narrator's thoughts flow from one such idea unit to the next, in accordance with learned schemas for storytelling and centers of interest chosen at the

time of narration. In moving from one idea unit to the next, and especially from one center of interest or sentence to the next, the speaker will encounter significant breaks in the coherence of space, time, characters, events, and worlds in the material he is narrating. The amount of processing difficulty the speaker experiences at these points, Chafe suggests, is reflected in his hesitations and depends upon the amount of re-orientation along these dimensions which he must undergo in his own consciousness and transfer to the consciousness of the listener. Finding a new center of interest at the end of a sentence requires re-orientation resulting in longer hesitations than at the start of new idea units within the same sentence. The most hesitating occurs at points where there are changes along several background dimensions; that is, at episode boundaries. The processing difficulties experienced at these points, Chafe proposes, do not demonstrate that experience is stored in memory in terms of distinct episodes, but rather reflect the degree of change between two idea units, which varies considerably but tends to be greater at episode boundaries. Thus in Chafe's model, experiential material is not stored in episode units formed during processing; instead, he proposes that there is a more complex storage in terms of coherent spaces, temporal sequences, character configurations, event sequences and worlds.

Analysis of the Sazaesan narratives should provide evidence for the nature of immediate recall for audio-visual material, which is vicariously experienced by the narrator. It should be possible to characterize this type of recall as constructive and/or abstractive, and to determine whether the videotape story is assimilated to subjects'

pre-existing story schemas. Schema-based theories of recall stress the formation, storage and retrieval of units corresponding to schema categories; the Sazaesan stories should provide some evidence for such units of memory if they are formed as part of the process of comprehending an audio-visual narrative. Comparing the adult and child narratives should reveal any differences between their memory of this vicarious experience, and should give insight into the development of the recall process in young children.

Selective Recall in the Sazaesan Narratives

Chafe [1977a] has pointed out that many people, in recalling a past experience, feel "that they are describing a kind of replay of the original experience," involving visual, auditory, and kinesthetic imagery. This is an area in which there appear to be extensive individual differences, but it seems likely that for many people memory for a story based upon a film or videotape would consist largely of audio-visual imagery. Impressionistically, the Sazaesan narrators seemed to be basing their stories upon a kind of mental re-running of the videotape which they had just seen, giving some individual interpretations, but rarely departing from the original story. At certain points speakers were unable to continue this replay, either temporarily or, for many children, permanently without help from the interviewer. Evidence for recall problems included extensive hesitations, such as silent and filled pauses, false starts and repetitions of all or part of a word, explicit references to the speaker's inability to remember, and in the case of the children, failure to continue the narration.

Since the goal of the experiment was to obtain spontaneous stories, with as little interference as possible, the interviewers were instructed to refrain from commenting or interrupting, and to give only the minimal appropriate responses of an interested listener, such as "un, un" (uh-huh), or "A soo" (oh). The children varied in the amount of prompting required; thirteen children under five years of age failed to produce stories in which more than two-thirds of the clauses were either spontaneous or produced in response to a simple "sorede?" ("and then?") prompt. Their narratives were excluded from the sample. Other studies on the development of narratives also suggest that approximately four years of age may constitute the lower age limit for the production of a successful narrative in an experimental context where the story is elicited rather than produced spontaneously. Stein and Glenn [1977a] found that many kindergarteners in a story-creating task had to be prompted throughout the testing session; several kindergarteners stopped speaking after each sentence, producing one more sentence in response to each prompt. Similarly, McNamee [1979] found that when four year old children were asked to retell a segment of Sesame Street, the resulting transcripts consisted of conversations between the adult elicitor and the child rather than real stories. After observing the story-eliciting techniques of a kindergarten teacher with children aged 4-6 years, McNamee concluded that the questions and prompts of adults eliciting stories actually teach children how to perform the task of retelling a story. Sometime between three and five years of age, most children learn to tell a story from memory when asked to do so; before this, children do not seem to know how to activate their memory of an experience in a way that will enable them to verbalize it in

narrative form.

Of the children who were able to produce Sazaesan narratives, some followed the sentence-by-sentence pattern described by McNamee, as in the following example:

- 5.9
F /Interviewer: Hajime ni nani ga dete kita no?/ (88)
... Wakamechan ga',
... gakkoo kara kaette kite',
... Ikurachan ga',
... Ikurachan ga kutsu de asonde ta no.
... /Interviewer: Soshite?/
... Wakamechan no',
... sukaato ga yaburechatta no.
... Interviewer: Sore kara?/
... Wakamechan ga okotta.
- /Interviewer: What did you see in the beginning?/
... Wakame,
... came home from school,
... and Ikura,
... Ikura was playing with shoes.
... /Interviewer: And then?/
... Wakame's,
... skirt got torn.
... /Interviewer: After that?/
... Wakame got mad.

As this example shows, a child often seemed able to recall an entire event sequence from the videotape, but verbalized his memories only with constant encouragement from the interviewer. Typically, content prompts were required at episode boundaries, whereas less specific prompts were sufficient within an episode. Prompts asking what a story character did next elicited further information about the same scene from the videotape more often than an entirely new scene. In general, a content prompt providing a new setting was sufficient to recall to the child the entire sequence of events which took place in that setting, since within a scene events tended to be tightly organized in immediately consecutive

temporal, and often causal sequence. Apparently, event sequences were stored along with the background mental imagery of the setting in which they took place; when it was time to move on to a new setting, crossing a break in the background mental image in their "replay" of the videotape, the children often experienced memory failure. The proportion of content prompts which were given at scene changes rather than within scenes ranged from 78% to 86% among the children under seven and increased to 100% among the seven year olds. These percentages are only suggestive, since the interviewers, once accustomed to the children's typical recall pattern, often provided content cues without first asking "sorede?" ("and then?") or "sorede doo shita no?" ("what did he do then?") if the child had recounted the last salient event from a particular scene and then stopped or said "wasurechatta" ("I forgot"). Providing increasingly specific prompts, of which the first two were usually unsuccessful at episode boundaries, was discouraging for the child narrator and created a larger gap within his story. Nevertheless, it seems clear from an examination of the children's stories that content prompts were necessary to give them a "still" from the videotape which would enable them to resume their mental replay from a new starting point.

Adult recall followed a similar pattern. Although no prompting was necessary, the adult narrators often indicated verbally the points at which they were having memory problem by phrases such as "nan datta kke?" ("what was it?"). Eight of the ten adults had such an expression at the beginning of from one to three new episodes, indicating their awareness of some difficulty in retrieving the next scene from the videotape. Of the total references to their recall processes made by

the adults during narration, 60% occurred at episode boundaries.

These findings seem consistent with the story grammar model of recall, in which information is chunked into units in accordance with narrative categories, in this case "episode," during processing, and later retrieved as units during narration. The findings are also consistent with Chafe's "flow model" of recall. In that model, the degree of difficulty a speaker will experience in moving from one piece of recalled information to the next during narration depends upon the amount of reorientation necessary, and each new scene in the Sazesan videotape, and therefore each new episode in the speakers' narratives, had a new contextual orientation in terms of space, time, characters, etc. The degree of change along these dimensions was always greater at scene boundaries than within scenes and so the majority of retrieval problems would be expected to occur, as they do in the Sazaesan stories, at episode boundaries. Chafe's approach has the advantage of providing a psychological explanation for the varying degrees of difficulty in retrieving different episodes and for the differences between adults' and children's recall. Adults experience memory problems to a degree depending upon the amount of change in orientation at an episode boundary; for children, even a small amount of reorientation may be too great to permit retrieval of a new scene or mental image which is significantly different from the one he currently has in mind. Thus children have difficulty bridging the gaps between information which has been stored in terms of different configurations of spatial, temporal, and other background properties. Progress toward the adult state depends on the development of mechanisms to bridge these gaps, which are greatest at

episode boundaries.

In moving from one episode to the next, the Sazaesan narrators did not always retrieve the episode which occurred in the videotape immediately after the one they had just finished verbalizing. Thus their mental "replay" of the videotape tended to be incomplete, and they frequently skipped one or more episodes in recounting the story they had seen. Although there was considerable evidence for a rich mental representation of the input, it would obviously have been impossible for the narrator to verbalize every detail in the videotape and since their instructions called for storytelling rather than performance of a memory task, there was no reason for speakers to attempt total recall. In contrast with experiments on the recall of narrative texts, therefore, there is no such thing as "verbatim" or complete recall of an audio-visual input in a story retelling task. With experiential material, recall for narration is necessarily selective; none of the adults or children verbalized each of the eleven main scenes from the Sazeasan videotape.

In retrieving episodes for narration, speakers sometimes changed the temporal sequencing of the scenes in the videotape. Piaget [1926] claimed that failure to preserve chronological order is particularly characteristic of the stories of very young children, and has a cognitive basis. His findings in story retelling experiments led Piaget to conclude that there is an "absence of order" in the narratives of children between 6-7 years old which decreases at 7-8 years of age. He attributed these findings to a decline in egocentrism at around seven years of age, claiming that younger children, even when they know the correct order of events, break up a story into a series of fragmentary statements lacking

temporal and causal relations, since they do not realize the importance of presenting events in order for the listener. Piaget [1927] also attributed the lack of order in young children's stories to their imperfect comprehension of cause and effect, claiming that "time is inherent in causality." The child cannot correctly reconstruct an irreversible succession of events, Piaget stated, until he is able to go back and forth in a temporal sequence, from effect to cause as well as vice versa, since seriating two events is tantamount to establishing not only that A precedes B and B precedes C but also that C succeeds B and B succeeds A. Before the age of 7-8 years, at which reversible operations are acquired, children "stack up their thoughts in a confused jumble," Piaget claimed, linking events purely on the basis of personal interest.

Piaget's proposals are not supported by the stories of the children in this sample, who usually preserved the original order of episodes in the Sazaesan videotape. Table 20 gives the percentage of episodes which were presented consecutively exactly as they occurred in the videotape, as well as the percentage of episodes presented in the correct chronological sequence, but with the omission of one or more scenes from the

TABLE 20. Percentages of chronological and consecutive episode transitions.

Age	Chronological	Consecutive
3.10-4.8	.84	.13
5.0 - 5.4	.82	.26
5.8 - 6.0	.82	.27
6.4 - 6.8	.86	.41
7.0 - 7.4	.84	.34
Adult	.88	.44

videotape. It is clear that most transitions were not to the episode which came next in the videotape, but most did proceed to an episode which had occurred at a later point in the videotape than the one which had just been verbalized. The percentage of episodes in correct chronological order in the children's narratives was extremely high, with no observable developmental trend, and was not significantly different from the adult percentage. (Rarely, the children changed the order of episodes in ways different from the adults; these cases will be discussed later.) Both adults and children telling the Sazaesan story seemed to share Labov's [1972] definition of a narrative as "one method of recapitulating past experience by matching a verbal sequence of clauses to the sequence of events which ... actually occurred."

The high percentage of episodes presented in the correct chronological order in the children's Sazaesan narratives is consistent with many recent findings indicating that children younger than seven years of age are capable of preserving the temporal sequencing of events in a story. Korman, reported in Yendovitskaya [1971], found that 4-5 year old children could "remember and reproduce with sufficient logical sequence relatively complex prosaic material," namely, fairy tales; departures from the original order were accompanied by "logically explainable 'jumps'." Stein and Glenn [1979] found that the correlation between the original and recalled order in story retellings of first graders ranged from 81% to 99%. Brown [1975] found that kindergarten and second grade children's recall of ordered narratives told in conjunction with a set of pictures was significantly superior to their recall of illustrated random descriptions, showing that children who have not yet acquired

reversible operations can reconstruct logical sequences. As Table 20 demonstrates, the Sazaesan narratives of even the youngest group of subjects support the conclusion that preoperational children can retell a story with the events in the correct temporal sequence.

Although about the same percentage of episodes were produced in chronological order in the Sazaesan stories at each age, Table 20 shows that there were developmental differences in the percentage of episodes presented in the same consecutive order as adjacent scenes in the videotape. There was a 13% increase in the percentage of consecutive episode transitions in the stories of the children over five years old, and another increase in the two oldest groups. The six year olds produced the highest frequency of consecutive transitions, 41%, which was very similar to the adult figure of 44%. Apparently, the younger children more frequently leap across greater spans of the videotape in recall; that is, their recall is even more selective than that of the older children and adults.

The degree of selectivity in the stories of each age group can be compared by observing the differences in the length of the narratives which subjects produced. Table 21 presents the percentage of narrators in each age group who told stories of varying lengths, as well as the mean story length for each group. The length of narratives was measured by counting the number of clauses per story, including main, subordinate, and embedded clauses. As Table 21 shows, there was some tendency for a higher percentage of narrators to tell longer stories with increasing age. The shortest narratives were produced by the youngest children, and the adults' stories tended to be much longer than those of the older children.

TABLE 21. Length of narratives.

Age	Number of Clauses							Mean
	0-9	10-19	20-29	30-49	50-99	100-150	150 ⁺	
3.10-4.8	.14	.43	.29	.14	--	--	--	19.4
5.0 - 5.4	.10	.10	.30	.20	.30	--	--	38.9
5.8 - 6.0*	--	.22	.33	.33	.11	--	--	32.0
6.4 - 6.8	--	--	.30	.40	.10	.20	--	47.1
7.0 - 7.4	--	.10	.30	.30	.30	--	--	41.1
Adult	--	--	--	.10	.40	.30	.20	108.7

*One subject in this group has been eliminated; the child misinterpreted a prompt early in his narration, and jumped to the end of the story.

The six year olds, as in other respects, showed the most advanced stage of the general developmental trend, telling longer stories than the other children between 5.0 - 7.4 years of age.

The tendency for story length to increase with age is consistent with prior research. There is a variety of evidence which suggests that young children are limited in the amount of material they can recall from a story; thus the length of their narratives may be subject to developmental constraints as well as voluntary choice. Many studies have found that younger children produce shorter narratives than older children; this was true for preschool and grade-school children, adolescents, and adults, who were inventing stories, recounting personal experiences, and retelling texts [Ames,1966; Stein and Glenn,1979; Umiker-Sebeok,1979; Mandler and Johnson,1977; Labov,1972; Botvin and Sutton-Smith,1977]. Botvin and Sutton-Smith found that the correlation between age and the length of invented stories in children between 3-12 years of age was primarily the result of increased structural complexity rather than age alone. It seems likely that the relationship between age and length of the Sazaesan stories was also based to some extent upon cognitive constraints on structural complexity. As Chapters 3-5 have shown, limitations on memory and decentering restrict various aspects of production such as the number of complete problem-resolution pairs, the elaboration of episode schemas, and the provision of background material, all of which affect the number of clauses in a child's story.

There may also have been social factors influencing length of Sazaesan narratives. Table 22, which presents the average length of stories in clauses for male and female subjects at each age, indicates

that there were striking sex differences in story length. At all ages except seven years, the female subjects told significantly longer stories, on the average, than the male narrators. It is possible that this reflects sex-related developmental differences at the early stages, with girls being more advanced than boys. However, this finding may arise from the experimental context, in which the narrators were addressing female interviewers; this seemed to create social constraint and shorter narratives in certain of the male adult subjects. Perhaps the younger subjects were also influenced by the context, and the girls tended to be more relaxed and verbal with the interviewers than the boys. It is not clear why there was such a striking reversal of the general tendency for girls to produce longer stories among the first graders, who attended a different school, and were the only children who did not have a female teacher.

Although there may have been cognitive and social influences on the length of narratives, resulting to some extent in the selection of less information for verbalization among the youngest children, there was some evidence that the process of selective recall is similar at all ages. Although the children generally verbalized fewer episodes and less information than the adults, which episodes were selected for narration clearly depended upon the relative salience of episodes, which was similar across the age range. For example, the second scene and the final two scenes were among the four or five most frequently recalled scenes from the videotape at all ages; the first and eighth scenes were selected less frequently; and the fourth, fifth and seventh scenes were the most frequently omitted. This pattern of salience suggests that the length

TABLE 22. Sex differences in average number of clauses per story.

Age	M	F
3.10-4.8	13.0	24.3
5.0 - 5.4	19.2	58.6
5.8 - 6.0	20.5	41.2
6.4 - 6.8	33.2	61.0
7.0 - 7.4	54.2	28.0
Adult	96.8	120.6

of stories may have been governed more by a voluntary selective process operating in the retrieval of salient episodes than by cognitive constraints. In fact, as Table 21 reveals, there was considerable overlap in story length at different ages, with 42% of the children, including one girl of only 3.11 years old, producing stories of the same length as some of the adults.

Episode Transitions and Retrieval Mechanisms

If recall of the Szaesian videotape is viewed as a selective mental "replay" with potential breaks in the flow of memories occurring at episode boundaries, then the main question for an analysis of the narrators' recall is how they accomplished the transition between episodes. An examination of successive episodes in the narratives should provide insight into the nature of these transitions and the bases of speakers' selection of new episodes to verbalize.

One type of episode transition which occurred in the children's stories, but not the adults', was to proceed from the verbalization of

one scene in the videotape to another scene which was very similar in visual terms, that is, in background dimensions such as place, characters, or ongoing activities. In their recall of the videotape, the children often jumped from one scene to another which occurred much later in the videotape, but which would be evoked by a very similar mental image. For example, in the second scene of the videotape, Ikura opens drawers in the children's desks, and later in the sixth scene he opens a dresser drawer and Sazaesan's mother's best kimono falls on the floor. In the following narrative, the child describes these two scenes as if they had occurred in immediate succession, ignoring the intervening three scenes.

- 6.7
F Ikurachan ga ne, (89)
 ... sorede Wakamechan no to sore to Wakamechan no
 oniisan no hikidashi o ne,
 ... ano sagashite ta ne;
 ... ano ... sorede okaasan no ne kimono ano ne,
 ... okaasan no tansu mo ne,
 ... sagashita no.
- Ikura,
... then uh looked,
... through Wakame's and also Wakame's older brother's drawers;
... and uh ... then their mother's kimono uh,
... he looked,
... through the mother's dresser too.

The two scenes from the videotape which were most frequently coalesced were the second and ninth; in these scenes Ikura messes up Wakame and Katsuo's drawers, and the next day they tape them shut to prevent further mischief. Several children skipped the six scenes which intervened, and presented these two scenes as a single episode, as if the events occurred in immediate succession. Example (90) illustrates the coalescing of these two scenes.

- 3.11
F ... Soshite ne (90)
... warui koto shite ta no.
... Oniichan no hikidashi o ne,
akete
chirakashite ta no.
... Soshite serohan teepu de ne,
... tomechatte ta no.

... Then,
... he was doing naughty things.
... He opened
... the brother's drawer,
... and was scattering things.
... Then with scotch tape,
... they were shutting them.

This apparent combining of scenes which were temporally separate in the videotape may be partly the result of children's failure to mention setting changes, as discussed in the third chapter. However, the repeated occurrence of the particular transition in example (90), always without any indication of the huge temporal gap, suggests that at least in some cases the children were retrieving two visually similar scenes together. Occasionally, the events from two different scenes were even interspersed throughout an episode, as if the child were completely unable to distinguish between the events which had occurred in each scene.

Another type of episode transition which seemed to be based upon mental imagery was the presentation of a scene at the point in the story line where a visually similar scene had occurred in the videotape. For example, in the videotape, the sixth scene began with Sazaesan's mother making dinner; while she is working and talking to Wakame, Ikura overturns the drawer containing her best kimono. As illustrated in example (90) above, some speakers proceeded from a description of Ikura's mischief with desk drawers in the second scene to his overturning of the kimono drawer in the sixth scene. But occasionally, as in the next example, a

child presented a description of the dinner-making background for the sixth scene, but then instead of describing the episode with the kimono drawer, recounted the mischief with the desk drawer, although that scene occurred at a much earlier point in the videotape.

- 5.2
F ... Sazaesan no ne, (91)
... unto ne,
moo hitori no ne,
... o ... obaachan ga ne,
... gohan tsukutte,
"nanka yaru koto nai?" tte Wakamechan ga yutta no.
... Soshite ne,
... soshitara ne,
mata Ikurachan ga ne,
unto hikidashi o akete ne,
... unto ne,
... Katsuokun to Wakamechan no ne,
obenkyoo no tokoro ne,
... yoku dashi toka akete ne,

... Sazaesan's,
... um,
another,
... l... lady,
... made dinner,
... and Wakame said "isn't there anything I can do?".
... Then,
... then,
again Ikura,
... um opened the drawers,
... um,
... he opened a lot of drawers and things,
... in Katsuo and Wakame's,
study place,

Thus an episode was sometimes substituted for one evoking a similar mental image during recall.

These types of episode coalescings, which seem to be based upon mental imagery, provide support for Chafe's suggestion that experiential material tends to be stored in terms of complex configurations of space, time, characters, etc. Of course, there were probably often other factors

contributing to the retrieval of visually similar episodes at once or in succession, such as conscious selection on the basis of themes, which will be discussed next. Still, examples (89-91) do seem to indicate that memory of a film or videotape story may be based largely on stored images, and that this type of mental representation affects narrators' retrieval of episodes. Just as the events within one scene seem to be "stored together," with the recall of one event leading to the next, so the retrieval of a scene having certain visual properties seems to make similar scenes more accessible to the narrator. Such ties between stored material, and especially the coalescing of temporally separate scenes during narration, suggest that episodes may not always be stored in distinct chunks. The cases in which speakers did not try or were not able to distinguish between visually similar episodes in recall indicate that even if episodes are recognized and stored separately during processing, they do not always continue to be maintained as separate units in memory.

Frequently, the motivation behind speakers' selection of episodes for verbalization seemed to be thematic, and the transition from one episode to the next to be based upon the wish to continue developing or to resolve a particular theme. The importance of themes in comprehension and recall has been investigated in a number of recent experiments. Dooling and Lachman [1971] found that subjects presented with a title or theme before reading a passage had superior recall for words in the passage than subjects who were not given a theme, and had superior recognition for words that were directly relevant to the theme. They suggest that "an abstract representation of a passage's central meaning

is used as a mnemonic device in the retention of prose." Other studies show that subjects will falsely "recognize" thematically relevant material which did not actually occur in the passage which they have read [Pompi and Lachman, 1967; Sulin and Dooling, 1974], and will recall metaphorical or vague passages better if given an appropriate thematic title before reading [Dooling and Mullet, 1973]. Hasher and Griffin [1978] suggest that thematic material is highly retrievable because a theme benefits from frequent and distributed occurrences throughout the presentation of any cohesive message. They demonstrate that using a stored theme as a retrieval device is a strategy which subjects can activate voluntarily depending upon the situation. In an experiment on the recall of short texts, subjects who were told that they had been given the wrong title for the passage they had read, and were given a new title, recalled as much or even more of the original text than subjects who did not receive a theme change; in contrast, the latter subjects tended to invent thematically relevant material during recall. Hasher and Griffin conclude that the subjects who did not receive a theme change used the theme to generate recall and freely reconstruct the original story whereas subjects whose theme had been invalidated recalled the passage without relying upon themes.

Perhaps the most striking evidence for the functioning of themes as a retrieval mechanism comes from an experiment by Anderson and Pichert [1977]. Subjects were assigned to different perspectives, such as "burglar" or "homebuyer," and then read and recalled stories containing information potentially relevant to both perspectives. After recalling the story once, some subjects were asked to recall it again after taking

the other perspective. Subjects who changed perspective for their second recall protocol retrieved an additional 7.1% of information from the original text relevant to the new perspective, significantly more than subjects who were asked to recall the story again without changing perspective. Most subjects felt that they had recalled everything in their first protocol, and were not "editing" their response, so apparently the new perspective gave them access to additional information. Their introspective reports give some insight into the nature of thematically based recall. Subjects stated, for example, that they kept in mind a theme such as "things that are wrong with the house" during their second recall, and were suddenly able to remember information which was unavailable when they had been thinking about "things to steal." Memory representation for the story evidently incorporated more information than could be retrieved in terms of a single theme; apparently stored information will be differentially accessible depending upon which possible theme is kept in mind during recall. Certain of Anderson and Prichert's findings gave evidence for stored mental imagery, although the input was a text; subjects stated, for example, that they "walked through the house" described in the passage, looking around from the new point of view, and suddenly "noticed new things." Thus one basis for the selective process in recall is thematic; focusing upon a certain theme during recall helps the narrator to retrieve stored material which exemplifies that theme.

With respect to the retrieval of new episodes in the Sazaesan stories, such findings suggest that if a speaker is recounting an episode which presents a particular theme, such as Ikura's mischief, this will tend to cause episodes sharing that theme to come to mind, either further

episodes illustrating the problem in question, or the episode providing the resolution. As example (90) above illustrates, the children tended to jump immediately to the resolution. The frequency of this particular episode transition from Ikura's mischief to Wakame and Katsuo's taping their desk drawers is probably based on the fact that these two episodes both share a common theme and evoke extremely similar mental imagery.

One aspect of thematic recall is that the narrator must be able to inhibit, or continue to hold in mind without either verbalizing or forgetting, thematic information which may be "triggered" by the recall of related material. Once a child narrator focused upon a particular theme, such as Ikura's mischief or his mother's illness, he would often leap prematurely to a presentation of the resolution of a problem. Besides the extensive omissions entailed by these leaps, the presentation of information as soon as it is called to mind by a thematic connection resulted in certain confusions and inaccuracies in the children's stories, such as the episode coalescing in examples (89) and (90), and the creation of "false" event sequences as in the next example. In this case, the child proceeds from the third episode, in which Ikura is throwing cake, to the explanation of Ikura's goal, which was given in the final scene of the videotape. Apparently, the recounting of Katsuo's anger, which was based on his ignorance of Ikura's real motivations, triggered recall of the final scene, in which everything is explained. However, the juxtaposition of these scenes creates the false impression that there was a single conversation in which Katsuo complains about Ikura's mischief and is answered with an explanation of Ikura's purpose.

- 5.11
M ... eto ne, (92)
... Katsuokun no ne,
... eto ne,
kao ni bechantte atatte ne,
eto Katsuokun ga ne,
... eto ne,
... "yoso no ko de mo so,
shikannakutcha dame da yo" tte ne,
... okaasan ni yutte ta no.
... Soshite kara ne,
... eto ne,
... Ikurachan no okasaan no ne,
... e ... ga ne,
... "kaze hiite te ne,
... Ikurachan wa ne,
... eto ne,
okusuri sagashite ta n da" tte.
- ... um,
... it hit,
... Katsuo,
... um in the face,
... and um Katsuo,
... um,
... (said) to his mother,
... "even though he's somebody else's child,
... you should scold him."
... Then after,
... um,
... (she said), "Ikura's mother's,
... his mother,
... had a cold,
... and Ikura,
... um,
... was looking for medicine."

The children did not seem to be aware of the false impressions created by such transitions. In their narratives, it was often thematic connection which motivated these inaccuracies; children allowed presentation of the theme to override other factors, which adults usually considered, such as presenting the listener with an accurate picture of the events which occurred.

Premature thematically based episode transitions in the children's stories sometimes led to reversals of the temporal sequence and logical

inconsistencies, as in the following example, repeated from Chapter 3. Here the child seems to be focusing on the theme of Ikura's mischief and the various attempts to resolve this problem, and verbalizes a brief sequence in which Ikura's father promises to scold him for the mischief before beginning to narrate the scene in which the father actually arrives and talks to Sazaesan's family.

- 6.4 (93)
M ... Ikurachan no papa ga kite,
... sorede ne,
... tsurete kaette itte ne,
... oneechan toka oniichan ga ne,
... "hikidashi ne,
... akenai yoo ni" tte yutte ne,
... sorede ne,
... Ikurachan no ... otoosan ga ne,
... "hikidashi aketa koto ne,
... okotte ageru" tte yuttara ne,
... tsugi no hi ne,
kite ne,

... Ikura's father came,
... and then,
... he took him home,
... and the sister and brother,
... said "(let's make sure that) when Ikura comes,
... he won't open,
... the drawers",
... and then,
... when Ikura's ... father,
... said "I'll scold him,
... for opening your drawers,"
... the next day,
he came,

Thus the effective use of themes as a retrieval mechanism during narration depends upon the narrator's ability to subordinate this source of material for verbalization to higher priorities, such as preserving the correct logical course of events, avoiding the creation of false event sequences, and verbalizing enough other important material to give an impression of the entire story rather than a single theme.

In addition to episode transitions arising from imaginal and/or thematic connections, speakers sometimes seemed to be selecting new episodes on the basis of typical event schemas, assimilating the true sequencing of episodes to their prior conception of the correct order for certain types of events. Although this did not occur in the adult narratives, the children sometimes clearly modified the temporal sequence of the story to coincide more closely with the course of events that is probably more common in their own experience. Apparently, recall of an episode containing a familiar type of event or situation gives the child access to episodes containing events or situations which typically follow each other in his own daily life.

For example, in the videotape the fifth scene shows Sazaesan preparing dinner for Taeko, and the sixth scene shows the mother preparing dinner for Sazaesan's household; this is followed by Sazaesan's father's arrival home from work in the seventh scene. The children often did not recall these dinner preparations until they had mentioned the arrival of Sazaesan's father at the end of the day. Thus the children's recall of these scenes reflects their own experience and point of view. They are not typically responsible for dinner preparation, but are accustomed to being served dinner after their father arrives home from work. Therefore, they reversed the actual order of episodes, presenting the dinner preparation and subsequent mischief after, rather than before, the father's arrival. The following example is typical:

5.8	...	Sorede ne,	
F	...	otoosan ga kaette kite ne,	(94)
	...	ne,	
	sono	ne,	
	...	Sazaesan no okaasan ne ... ga ne,	

... ne,
... oryoori shite ta ne;
... Ikurachan ga ne,
... sono obaasan no ... obasan no ne,
... ne tansu ne akechatta wake.

... Then,
... the father came home,
... um,
um,
... Sazaesan's mother ... mother,
... you know,
... was making dinner;
... Ikura,
... opened up the dresser,
... of the old lady ... the lady.

Similarly, one child transposed the seventh episode, in which Ikura is shown sleeping in Sazaesan's house, to the end of the first day, after the scene where his father took him home.

5.10
F ... sore kara ne, (95)
... ojisan ga ne,
... "kaeru yo" tte mukae ni kite ne,
... bai bai tte yatte ne,
sorede ne,
... sono ne,
yoru ni ne,
... eto ne,
gamu teepu o ne,
jibun tachi no ne,
tsukue ni hatte,
... sore kara ne,
... ouchi ni ... de ne,
... nete ne,

... after that,
... his father,
... came to get him
(saying) "let's go home
... and he waved goodbye,
and then,
... that um,
... night,
... um,
they stuck scotch tape,
on their own,
desks,

... and after that,
... at home,
... he slept,

Thus the child's own mental schema for the ordinary course of events, in which sleeping happens at the end of the day, was apparently guiding his retrieval of episodes.

As examples (93-95) suggest, the reversals of temporal order in the children's narratives were sometimes different from those which might be expected in an adult's story. Although order reversals occurred almost as frequently in the adults' Sazaesan stories as in the children's, as Table 20 has shown, they never resulted in logical inconsistencies or distortions of the basic plot line. In the adult stories, only the order of episodes which were essentially interchangeable, namely, the series of mischief scenes, was modified.

Brown [1975] has demonstrated that the ability to recognize and reconstruct event sequences precedes the ability to recall or narrate them in their original order, and has suggested that young children's apparent inability to preserve correct chronological sequencing in stories "stems from general problems with recall tasks and immature expository powers rather than from an inability to comprehend and remember the ordered relations in sequences." It seems clear that some of the unusual temporal transitions between episodes in the children's Sazaesan stories could be ascribed to a lack of expository skills. For example, certain apparent cases of episode coalescing probably arise from the child's failure to present the background information which would indicate that the second of two episodes was separate from the first in the videotape. However, it also seems likely that there is an underlying cognitive

basis for both the child's lack of certain expository skills and his failure to preserve temporal sequence. The lack of concern for the listener's comprehension which children display in omitting settings seems very similar to their lack of concern for the listener's understanding of the sequence in which scenes occurred in the videotape. The children were apparently not disturbed by the logical inconsistencies created by certain of their episode transitions, nor did they seem constrained by the adult need to maintain a certain (difficult to define) degree of veracity in their retelling. It is not clear, of course, how well the children in this sample had understood and stored temporal information from the videotape; however, it often seemed that the child's comprehension of an event sequence must have surpassed his ability to express this understanding, as in cases where story characters were made to speak and act before arriving on stage. The present findings seem consistent with Brown's conclusions; the task of narration apparently pushes children to the limits of both their cognitive and expository skills, and the problems with chronological ordering which appear in their stories reflect immaturities at both levels.

As the above examples have shown, the Sazaesan narrators' retrieval of the videotape story was based upon various types of connections between stored scenes, which made new scenes accessible to the speaker who had just verbalized a related episode. The episode transitions in the narratives suggest that information is stored at least in terms of imaginal and thematic representations, and that mental imagery, themes, and also familiar event schemas can all function as retrieval mechanisms during narration. Table 23 presents the percentage of episode transitions

TABLE 23. Percentage of episode transitions based on imaginal, thematic, and schematic retrieval.

Age	Thematic		Imaginal	Schematic
	Old Theme	Same Theme		
3.10 - 4.8	.45	.23	.16	0
5.0 - 5.4	.52	.22	.12	.08
5.8 - 6.0	.60	.23	.13	.05
6.4 - 6.8	.59	.27	.12	.01
7.0 - 7.4	.57	.31	.13	.01
Adult	.83	.55	.13	0

in the narratives of each age group which may have had thematic, imaginal and schematic bases. Episode transitions categorized as "schematic" were those which corresponded to a common schema for daily events, such as the transitions from a scene depicting a mother making dinner to a scene where a father arrives home, or vice versa, as in the order reversal illustrated in example (94). Since more than one factor may have influenced the retrieval of a particular episode, each episode transition was classified in terms of each factor which could have linked the new episode to the preceding one in the narrator's mind. As the table shows, only a small proportion of new episodes were retrieved on the basis of familiar event schemas; most of these involved reversals of the original temporal sequence. The youngest children probably did not show any evidence of this type of recall because they omitted so many episodes from the original story; the adults did not happen to mention the parts of the story which corresponded to typical event sequences and apparently did not allow any schematic connections which came to mind to direct their

verbalization, and decrease their faithfulness to the videotape story. Episode transitions based on mental imagery constituted a low, but stable percentage at each age group, motivating both correct transitions and certain anomalous ones, such as the episode coalescing which occurred even in certain adult stories. Clearly, the most common basis for the retrieval of new episodes was thematic. Somewhat less than one-quarter of the episodes in the stories of the children under six years old continued one of the same themes from the immediately preceding episode; this percentage was slightly higher in the older children, and rose to 55% in the adult narratives. A much higher proportion of episodes continued "old" themes, presented in the immediately preceding and/or some earlier episode, and there is an increase in this percentage across the younger age groups. Comparing the rate of thematic recall in the adult and child narratives, it appears that the adults may have had fewer recall problems than the children because they were able to keep a larger number of themes in mind at once. Having retrieved a particular scene from the videotape, the adults would verbalize information relevant to several themes underlying the events of that episode; this in turn would increase their attention to each theme and evoke thematic connections to many other parts of the videotape. The children, who reiterated each theme much less frequently, did not seem to be using such a constant awareness of the strong themes to recall all the potentially relevant information in an episode which they had retrieved, and therefore their verbalization of each episode could not evoke as many thematic connections to other episodes. Certain of the children's memory problems, such as the failure to resolve problems presented at an earlier point in the

narrative and the inability to retrieve new episodes, may have had their basis in the children's relatively undeveloped utilization of thematic recall.

Evidence for Constructive Recall

The reversal of temporal order in the presentation of the Sazaesan stories in the children's narratives provides one of the most obvious examples of constructive, schema-based recall, in which the input story is assimilated to pre-existing schemas for event sequences. Another striking example of constructive recall, which was clearly based upon prior knowledge of story schemas, can be found in the way children ended their narratives. The adult speakers all concluded their narration with the final scene of the videotape. In some ways, the videotape fit a typical "happy ending" schema, since the final scene depicted the reconciliation of conflicting story characters and provided the resolution to a "mystery." However, most adults did not emphasize these aspects of the conclusion; only one ended her narrative on a "happy" note.

Adult	... dakara,	(96)
F	... ka karenari no rikutsu ga atte ne,	
	... warui koto o shite ita wake ne.	
	... De nan da tte,	
	sore ga wakatte ne.	
	... De ano ... nagoyaka ni,	
	waratte,	
	... oshimai to yuu hanashi.	
	... so,	
	... having his own reasons,	
	... he had done those things.	
	... And they understood	
	... that.	
	... And uh ... they laughed,	
	amiably,	
	... the end (was the) story.	

Thus there was no attempt on the part of the adults to modify the conclusion of the videotape.

In contrast, 29% of the children concluded their narratives at points other than the final scene of the videotape, and these changes reflected their notion of an appropriate story ending, which seemed to be based upon various "ending" schemas from their own daily lives. Thus several children ended their narratives early, at one of the following points: a farewell, a departure, or the arrival home of a father at the end of the day. The following example illustrates the "farewell schema" with which some children ended their narratives.

- 4.5
F ... Sorede ne, (97)
... sorede ne,
... otoosan to kaette ne,
... mata kite ne,
... "sayonara" tte,
owari.

... Then,
... then,
... he went home with his father,
... and he came again,
... and (said) "goodbye",
the end.

Another child ended her story with Sazaesan's father coming home, and added on an obvious "happy ending" of her own interpretation.

- 5.1
F ... ne, (98)
ashi ... ashita ni natta toki ne,
... "moo ... ne,
... Ikurachan ... Ikurachan no ne,
... okaasan wa ne,
netsu naorimashita kara daijoobu ... desu" toka nan toka
itta no ne;
... sorede ne,
... okaasan tachi wa ne,
yorokonde ne,
... sore kara ne,

... ano ne,
... Sazaesan chi no ne,
... otoosan ga kaette kita no ne;
... sorede ne,
... minna wa yorokonda no.

... um,
when it was the next day,
... he said ... "already,
... Ikura ... Ikura's,
... mother,
her fever is better so it's all right";
and then,
... the mother and the others,
were happy,
... and after that,
... um,
... Sazaesan's,
... father came home;
... and then,
... everyone was happy.

Two children even changed the sequence of episodes in order to produce this type of conclusion, narrating the final scene of the videotape and then recounting the "end of the day" scenes as if they had occurred last. At least one such schematic ending occurred in the stories of each age group except the oldest. Like schema-based episode transitions, schematic endings were the most common at around five years of age; 30% of the children aged 5.0 - 5.4 ended their stories in this way.

Schematic endings and episode transitions provided the clearest evidence for constructive recall as described by Bartlett. Other types of constructive changes included the addition of material not actually shown in the videotape; descriptions which were inconsistent with the events depicted; and transpositions of events and utterances to episodes other than the ones in which they had actually occurred. However, as the following discussion will show, the first two types of change seemed to be based upon the nature of the comprehension process and to reflect

the speaker's initial interpretation of the story rather than the way information was retrieved from memory as Kay [1955] has suggested. Table 24 presents the total number of such constructive elements in the Sazaesan stories at each age, and the percentages of each type of change.

TABLE 24. Frequency of three types of constructive changes.

Age	Additions	Errors	Transpositions	Total
3.10-4.8	.45	.34	.21	29
5.0 - 5.4	.34	.34	.32	77
5.8 - 6.0	.40	.20	.40	55
6.4 - 6.8	.48	.19	.33	52
7.0 - 7.4	.61	.20	.19	54
Adult	.45	.13	.42	113

As Table 24 shows, additions occurred most frequently, and transpositions with variable frequency, usually in similar or overlapping proportions in the adult and child stories; errors decreased across the age range of children and were least common in the adult narratives. There was a much larger total number of these changes in the adult stories, and a smaller number in the youngest children's narratives, consistent with the differences in average story length. It is interesting to note that although the children of 5.0 - 5.4 years did not tell longer stories than the six and seven year olds, they again produced the largest number of constructive changes among the children.

The "additions" in Table 24 were not erroneous "importations" of the type Bartlett described, but rather were valid inferences and interpretations based on events and situations depicted in the videotape. Many

reflected the narrators' ability to interpret conventional omissions in the visual depiction of events. For example, a very common type of addition was to describe arrivals of story characters which were not shown in the videotape, but which could be inferred from later re-groupings of characters. Sometimes event sequences were inferred from the depiction of results; many adults and children described a sequence in which Ikura pulls out a drawer, it falls on his head, and he cries, although the videotape had just shown what Sazaesan's family sees: Ikura lying on the floor underneath the drawer crying. On the other hand, purposes were often inferred from events which marked the achievement of an intention. It was very common for speakers to say that Norisuke came "to get Ikura"; since he is shown leaving with Ikura, his purpose can be inferred and presented as a goal along with his arrival.

These additions sometimes clearly reflected the speaker's own personal interests and experiences, as Bartlett also found. For example, in the first scene, Wakame is shown entering the gate of Sazaesan's house carrying some books and calling "tadaima" ("I'm home"). Eleven of the children over five years of age described this portion of the videotape by saying that Wakame came home from school; only one adult mentioned this inference. On the other hand, three of the ten adults, but none of the children, stated that Ikura's father was at work. Thus the additions which were made revealed the point of view of the speaker, and the event schemas which are important in his own life.

Speakers also often attributed emotions and other internal states to the characters, even when these were not really obvious from their words or facial expressions. For example, certain adults said that Wakame

and Katsuo were disappointed when Ikura did not come on the second day. Alternative interpretations show that these internal states were not unambiguously depicted in the videotape; another adult stated that Szaesian's family was relieved when Ikura did not come. Only such potentially ambiguous cases have been counted as additions; the anger of Wakame and Katsuo, which was clearly illustrated by their words, gestures, tone of voice and facial expressions was not included in this category.

A similar type of addition was the inclusion of dialogue which was consistent with the emotions of the characters and their actual words, but which did not actually occur in the videotape. For example, in the story of one six year old, Wakame and Katsuo ask, 'nan de okoranai no, annani shita no ni?' ('why don't you get angry, when he's done things like that?'), and in one seven year old's story, Szaesian's mother says 'shikarimasen' ('I won't scold him'). Typical speech formulas, such as 'okaerinasai' ('welcome home') were often provided at points where they were not used in the videotape, but would have been appropriate. Many verbal additions in adults' and children's narratives provided a question which was not shown in the videotape, but could be inferred from the reply, which was depicted. The adult narrators added much more dialogue to their stories than the children, but it was clear that throughout the age range sampled, children were also capable of constructing appropriate utterances and conversational exchanges to fit the story line.

This evidence for the construction of inferences during comprehension of the Szaesian videotape is consistent with the findings of various experiments showing that children, like adults, make inferences while

processing short stories [Paris, 1975] or stories shown in a set of pictures [Brown, 1976], and like adults, have difficulty distinguishing between these inferences and the material actually seen or heard. It seems clear that, as Paris concluded, inference is one of the "basic mechanisms of understanding" and "not an extraneous by-product of comprehension."

Although most additions made in narrating the Sazaesan story were inferences consistent with the videotape, speakers also sometimes presented false "facts" of various kinds, which have been counted as "errors" in Table 24. Factual errors in the youngest children's stories were often based upon misperceptions or misinterpretations of the videotape. At times these arose from a failure to understand certain technical conventions. Two children, for example, ignoring the "bubble," thought that the portion of the final scene in which Wakame imagines herself as a mother talking to her child was a depiction of real events. Several speakers, adults and children, became confused about whether certain scenes took place at Sazaesan's or Ikura's house, adding false arrivals and departures to fit their misinterpretations. Occasionally, misinterpretations were based on the picture stories which the child had seen in the narrative session. Thus one five year old began his Sazaesan story with Ikura playing in a sandbox, and thought that it was sand that Ikura put on Wakame's skirt, since one picture series was about two children playing in a sandbox. In such cases, the child's interpretations were clearly assimilative. There were a few striking cases in which a child narrator entirely assimilated story events to the theme of his choice. One girl of 3.11 years old, for example, focused on the theme of playing,

and described the scene in which Sazaesan helped Taeko as "playing hospital," the household scenes of cooking as "playing house," and elaborated the final scene into a game in which the children try to catch the snail. Thus there were a number of instances of the kind of inaccurate, assimilative changes which Bartlett found, reflecting the speaker's prior experience and individual interests; however, these errors seemed to be based upon interpretations made during comprehension rather than upon forgetting or constructive recall.

Certain inaccuracies in the narratives seemed to be the result of forgetting. One was the "multiplication" of events which had occurred more than once in the videotape; speakers apparently remembered that a particular type of scene, event, or reaction was repeated, but could not remember exactly when. One adult, apologizing for his inability to recall more accurately, added another visit to the story, presenting the final scene as two separate occasions on which Taeko and Sazaesan got together with their families. Four children added a sequence in which Katsuo gets angry and Ikura cries in mischief scenes besides the third, in which this actually happened. Chafe [1977c] made similar findings; narrators added extra events, characters, and props to those which had actually been in the film which they were recounting. Although this occurred only in narratives told six weeks after viewing, the same multiplication of events could be observed in immediate recall in the Sazaesan stories, if similar events had occurred more than once in the videotape. Apparently, an early loss from memory of an audio-visual story is the exact number and temporal sequence of instances of a type of event which was repeated in the input.

Another type of information which was quickly lost from memory, or perhaps never even stored, was the exact nature of certain relationships between events. The Sazaesan narrators sometimes would recall a particular event, but not the reason behind it. This apparently led to the invention of likely causal connections between related events in memory. Thus one adult remembered that Sazaesan was able to go to visit Taeko at a certain point, but stated that this was because Ikura had fallen asleep, whereas actually it was because he was playing quietly with Tara. One five year old said that Ikura got a fever in the seventh scene, and then that he got better; apparently she remembered the image of Ikura sleeping and used the cause of Taeko's illness as the explanation for this memory. Another five year old said that Wakame banged her head on the door, whereas actually she had been hit by a shoe; the child seems to have remembered the impact, but forgotten the cause. Chafe [1977c] also found that speakers gave different causes for remembered events and called this phenomenon "transference."

In Chafe's sample, speakers retelling the film they had seen six weeks later sometimes transferred characters' roles, so that a different character would perform a remembered event. In the Sazaesan stories, this type of transference frequently occurred in the recounting of dialogue. In these cases speakers apparently remembered a particular utterance, but either were unable or did not bother to recall exactly who said it. Since in the Sazaesan story most reactions were experienced by more than one character, the referential transfers which were made were quite plausible. For example, both of Ikura's parents shared certain knowledge which Sazaesan's family did not; therefore, three

children and six adults attributed to one parent statements which had actually been made by the other. Wakame and Katsuo experienced similar emotional and verbal reactions throughout the videotape, and speakers often assigned particular utterances to one or the other incorrectly. The children over six years old and the adults sometimes handled these cases by attributing statements to a group, such as "minna" (everyone) or "otona" (the adults). Narrators at all ages in this sample condensed whole conversations into a single statement, which would be attributed to one or more characters who also shared that sentiment. There were fewer referential transfers with respect to other kinds of events, but they were generally quite similar. For example, speakers occasionally created incorrect referential groups using "tachi" (and the others); one child said that Ikura was playing with "Tara tachi" (Tara and the others) when, in fact, he was only playing with Tara. These cases of referential transfer among members of a group of "repeated" or equivalent characters are similar to the multiplication of events. When the material being narrated was strongly thematic, as in the case of extra angry reactions on the part of enlarged referential groups like "everyone," multiplications seemed to be voluntary, and similar to the use of repetition as an evaluative device [cf. Labov, 1972].

As Table 24 shows, speakers were also not overly concerned with the exact location of certain events and utterances in the temporal sequence, and sometimes transposed them to scenes other than the ones in which they had actually occurred in the videotape. A common type of transposition was to recall an utterance at an appropriate, but incorrect point. For example, one adult stated that when Ikura's father arrived

to take him home, he inquired about his behavior, and Sazaesan said that he had been very well-behaved. In fact, this conversation had taken place between Taeko and Sazaesan during a different scene; thus this was an instance of both temporal and referential transference. The most common transposition, which was clearly deliberate, was the placement of information about Taeko's illness and Sazaesan's babysitting at the very beginning of the story, rather than toward the end of the first scene, where it was presented in the videotape.

The constructive changes which are summarized in Table 24 reflect the many small inaccuracies in speakers' verbalizations of the videotape which they had seen. In fact, these changes constituted an insignificant proportion of the information in the stories, and either were limited to the type of material which was not essential to the story line, or were elaborations of thematic material which emphasized important aspects of the plot. Since the stories were told immediately after seeing the videotape, the amount of forgetting was minimal, and many of these inaccuracies probably reflect the degree of freedom which narrators felt was appropriate.

Summary and Conclusions

Although narrative production can give only indirect insight into the nature of stored information, an analysis of the Sazaesan stories does indicate that speakers' mental representation of the videotape they had seen incorporated imaginal, thematic, and schematic properties. Speakers tended to experience memory problems at points where the background mental image for the settings of event sequences changes, and

almost all of the information recalled was thematically relevant. The operation of pre-existing schemas was most evident in the processes of comprehension and retrieval, although some assimilation of the input to personal and story schemas may have occurred in the brief interval during which the story was stored in memory.

Within the framework of schema theory, it has been suggested that the comprehension of narratives involves the segmentation of input stories into units corresponding to the categories in a story schema; these chunks are stored and then later retrieved. In the Sazaesan stories, memory failures tended to occur primarily at episode boundaries, which might be taken as evidence for the prior existence of episode-size cognitive units created during the initial processing of the videotape. However, there was also evidence against this view; sometimes speakers retrieved information simultaneously from two different episodes which had been temporally separate in the videotape, and were either unable to differentiate between the material from each episode or, more frequently, presented two scenes from the videotape as a single episode. Therefore, it does not always seem to be true that permanent cognitive chunks corresponding to schema categories such as "episode" are formed during comprehension and retrieved as distinct units. Rather, it appears that different parts of a person's mental representation of an input story are more or less closely related by virtue of certain types of similarities and connections. In this story, the events within single episodes tended to be causally related and to be recalled without difficulty; thus there is some support for the claim of Mandler and Johnson [1977] that causal relationships in a story foster accurate recall.

Separate episodes were related by shared themes, similar settings or stored mental imagery, and by their interpretability as parts of familiar schemas for events or story endings. Stored material with many such links is more mutually accessible; that is, having retrieved one part of the story, related parts are called to mind more easily by the narrator. When stored material is strongly related, it is retrieved with little difficulty and appears to be part of the same cognitive unit; when there are fewer connections, memory failure may occur and the unretrievable information will seem to have been stored in a separate chunk.

It is frequently suggested that the recall of narratives is guided by prior knowledge of story schemas, which function as retrieval mechanisms. Theories of recall proposed within the framework of story grammar usually imply that, with the help of a story schema, speakers retrieve a certain higher-order cognitive chunk of stored information, such as an episode, and thereby gain access to the material within that unit. For the Sazaesan narrators, familiarity with schemas such as events-reaction may well have facilitated recall within episodes. However, although the story conformed to an episodic schema, knowledge of this schema for sequential episodes could not really have helped speakers to retrieve the next scene from the videotape during narration. Analysis of the Sazaesan stories suggests that typically awareness of a story-specific theme led speakers to retrieve events exemplifying that theme, and that the thematic connection between certain events gave them access to the entire episode which included those events. The only story schema which would help these narrators to recall new episodes was the problem-resolution schema underlying the different themes. Alternatively,

a. speaker's mental image of a particular background setting could help give him access to other events which took place in the same or similar setting. Thus in terms of hierarchical structure, retrieval of a higher-order unit seems, from a psychological point of view, to consist of retrieving particular, salient lower-order units, such as an episode setting or event.

Discussions of story recall have often focused on the question of whether memory for narratives is primarily constructive, as Bartlett claimed. The Szaesan stories did include the additions, omissions, errors and changes in temporal sequencing which Bartlett discussed as evidence for the constructive nature of recall. Certain constructive features of the stories apparently arose from misperceptions and inferences which occurred during comprehension, in accordance with subjects' prior experience and personal interests. Some constructions were made to bridge gaps in memory which may reflect failure to store information, such as certain temporal and causal relationships which were not crucial to the plot. Other constructive changes, such as thematically appropriate referential transfers, event transpositions, and dialogue additions, may have been made more or less consciously during narration, and probably reflect the degree of accuracy which speakers find appropriate for storytelling. The more important constructive modifications which occurred in the children's stories, such as changes of temporal ordering in presenting episodes, or ending the story prematurely, seem to have been made unintentionally during recall, and provide clear examples of the effects of schemas. However, the amount of constructive changes introduced into the stories was insignificant compared to the amount of

accurately recalled information, even in the children's narratives. The most striking difference between the videotape story and the Sazaesan narratives was the omission of material in the narratives, including entire scenes. However, since speakers did tend to preserve the same basic themes regardless of the amount of material they included, Gomulicki's characterization of recall as an abstractive process seems most appropriate. Thus the Sazaesan stories provide evidence for the view that, at least in the early stages, recall for stories which have been vicariously experienced in the audio-visual mode is primarily accurate and selective rather than inaccurate and constructive.

The differences between the adult and child Sazaesan stories give insight into developmental changes in the recall of stored information. In many ways the adults' stories were more faithful to the videotape, that is, their recall was more accurate and less constructive. The developmental increases at 5.0 and 6.4 years in the number of consecutive episode transitions provides evidence for a growing ability to "replay" the videotape accurately. The decrease in incorrect, schema-based episode transitions and story endings at the age of six is part of the trend toward greater accuracy; at this age the children were able to reduce their reliance upon pre-existing schemas during retrieval. Apparently, the most important basis of accurate recall, an increased reliance upon thematic retrieval, develops after the age range sampled here. Increasing accuracy also depends upon development of the ability to take the listener's point of view during narration. Many of the children's departures from the original resulted in logical inconsistencies and omissions of huge amounts of material which would decrease a

listener's ability to understand the story. The process of recalling a story for verbalization must be governed by the intention of recreating for the listener the same story which the narrator experienced; thematic, imaginal, and schematic connections among stored episodes can serve as the basis for retrieval, but must be ignored or inhibited when they impede the goal of accurate retelling. Thus to achieve adult-like recall, the child must be able to reduce his assimilation of story input to pre-existing schemas, to increase his attention to stored themes, and to monitor the retrieval process from the listener's point of view.

CHAPTER 8
CONCLUSIONS

Research on the development of narrative skills in young children has an important contribution to make to the field of language acquisition. The phonological, syntactic, semantic, and pragmatic levels of language development have been studied in some detail, increasing our understanding of the cognitive and social development of the child and their relationship to the acquisition of language. At this stage, research on the development of narrative skills can provide a new perspective for analyzing the earlier stages of language acquisition upon which narratives skills build, and afford an opportunity to extend the study of language development to a later age and a more advanced cognitive and linguistic level. As in other areas, a cognitive approach to the study of narrative skills calls for cross-linguistic research to provide a sound data base for psychological theories.

Selection of a theoretical model to guide research on the development of narratives is obviously very important, since the model of the adult state which is chosen will influence not only the analysis and interpretation of data but even the type of data which is collected, thus limiting the possible theoretical conclusions. Analysis of the present sample of narratives has raised many questions about the adequacy of story grammar as a cognitive theory of narratives. In the story grammar model, narratives are analyzed in terms of concepts developed within generative grammatical theory for the study of syntactic structure, and the notion of rules for constituent structure is applied to stories.

However, the study of narrative production reveals that there are many significant differences between syntactic and discourse "rules." The schemas, or rules for constituent structure, which could be found in the present sample of narratives were largely optional, variable, overlapping, and incomplete. They provided more than one equally valid structural description for many passages, failed to account for certain important structural features of the narratives, and were sensitive to the preceding and following parts of the story in a way which would be extremely difficult to formulate. Different schemas could be combined and modified with such freedom that they seemed to have very little predictive value. The same story could be verbalized in so many different ways that the list of schematizations which occurred was long and idiosyncratic. Given this structural indeterminacy and lack of predictability, it seems clear that story schemas are not completely adequate as tools for describing narrative structure, and do not provide a theory accounting for which structures people will actually produce in recounting even one story. The conclusion of Linde and Labov [1975] with respect to discourse rules seems appropriate; they state that typically "one set of options is possible under a specific set of circumstances, but is not required under any of them." The degree of structural variability, ambiguity, and indeterminacy at the discourse level seems to be much greater than at the level of the single main clause, which has been the primary domain of syntactic theory, and the "fit" between the set of general narrative rules which can be postulated and the structure of specific stories is less exact.

The status of structural categories and their order in rules for

constituent structure also is different on the levels of syntax and discourse, and this difference has important implications for the acquisition of narratives. The grammatical categories appearing in rules for syntactic structure, such as Noun and Verb, are ordered in grammatical rules in a language-specific way. In contrast, the categories of narrative structure appearing in story grammar rules, such as "events" and "reaction," reflect the nature of actual experience, and their sequencing in narrative schemas mirrors the typical course of events in the world. Thus the categories and rules of story grammars are not limited to the domain of narratives. This is also true of schemas providing for the presentation of background information; schemas such as setting-events seem to be based upon constraints in presenting information to a listener which probably operate in all types of communication, and not just in storytelling. As Mandler and Johnson [1977] have pointed out, one source of input to the acquisition of narrative schemas, and perhaps also to their formation within particular historical/cultural contexts, is the nature of experience [cf. Chafe, 1977b]. From the standpoint of acquisition, experience with non-narrative input such as event sequences and conversational interactions gives the child access to "rules" for narrative structure in a way that is not true for other levels of language development. Experience with typical event sequences helps the child to structure a story, but experience in manipulating objects and performing actions does not give the child access to the rules for sentence structure in his language, although it may help him to acquire syntactic categories such as Noun and Verb. A study of the experiential basis for the development of narrative schemas would be

a monumental task, but would give insight into their cognitive status as schemas for communication and the interpretation of events, as well as for the presentation of information in story form.

Analysis of the present sample of stories has also raised questions about the applicability of the concepts of grammaticality, and especially of the competence/performance distinction, to the domain of discourse. On the level of narrative discourse, it seems to be even more difficult to separate competence from performance. Knowledge of certain structural features of stories, such as the setting-events schema for episodes, seems to be based upon or perhaps even reducible to the "performance" ability of taking the listener's point of view into consideration during narration. In this sample of stories many apparent structural rules seemed to "fall out" from certain cognitive and social aspects of narration, and it would be difficult to say whether competence was one input to performance or whether the development of performance abilities was one input to, or even prerequisite for, the acquisition of competence. Furthermore, it would not be easy to define adult narrative competence, since it was clear that adult speakers differed considerably in narrative skills, and perhaps even in their knowledge of story schemas and ability or inclination to apply this knowledge during narration. Since there was such variability in the adult narratives, it was often unclear whether or not a certain portion of a narrative was "ungrammatical"; the adequacy of episode settings, for example, was clearly a matter of degree. It seems likely that there would be even less agreement across observers in such "grammaticality judgments" with respect to narratives, and the concept of grammaticality in this area will probably prove to be even more

elusive than on the syntactic level. The existence of such differences in skill among the adult storytellers who provide children with the input for the acquisition of narratives probably has important effects on the process of development. The present sample of stories shows that there are tremendous individual differences in narrative skills in children across an age range of more than three years, although most children are probably exposed to various types of stories from a very early age. Thus there are major differences between the discourse and syntactic levels of language, and these are reflected in the nature of adult "competence." The course of acquisition for narrative skills, which apparently takes much longer, is less uniform across children, and has a less predictable outcome than the acquisition of syntax.

Cognitively oriented research on the narrative skills of adults and children has sought a process model for the comprehension, recall and production of stories; analysis of the present sample of narratives suggests that the constituent structure model of story grammar is an inadequate and rather misleading model for these processes. With respect to comprehension, the type of memory representation which was evident from speakers' Sazaesan stories differed in many ways from the hierarchical, schema-based cognitive representations postulated as the result of the story comprehension process within schema theory. The aspects of narrators' memory for the videotape story which were most important for retrieval — thematic and imaginal information — receive no representation in schema-based models of comprehension and recall. There was little evidence for hierarchically structured mental representation of the input story; although memory failure tended to occur at the boundaries of

higher-level structural units, i.e. episodes, these were also the points where there was a drop in thematic and imaginal cohesion. In general, speakers' recall seemed to be more like a continuous "replay" of the input with occasional breaks than a successive retrieval of distinct cognitive chunks. Some episodes were recalled much more easily than others, successive episodes were sometimes recalled with less difficulty than episode-internal material, and separate episodes sometimes seemed to have merged in the narrators' memory. Sentence boundaries provided evidence that speakers were aware of the kinds of schema-based units which are postulated to be the basic units of recall in the story grammar approach, but the placement of sentence boundaries did not reflect awareness of differences in the hierarchical level of the structural units being marked. Often the boundaries of smaller units such as single speech turns were marked and the boundaries of larger units such as episodes were ignored, even by the same speaker. Therefore, it seems unlikely that the initial processing and comprehension of the videotape involved the construction of hierarchical constituent structure, or the storage of constituents in terms of a pre-existing hierarchical story schema.

Thus the verbalization process seems to be more appropriately conceptualized in linear rather than hierarchical terms, in keeping with Chafe's "flow model." The narrator must constantly be retrieving and verbalizing information, and the production of each verbal unit involves a number of cognitive and linguistic processes. In recalling material for narration, the speaker must select a limited amount of information from his much richer memory representation; this selection seems to be

guided primarily by remembered themes. Having gained access to stored material, the speaker must decide how to organize his presentation of it, and here he is helped by his prior knowledge of story schemas. However, this process is not entirely assimilative, and if the material to be narrated does not fit any one story schema very well, the speaker will modify and combine common patterns of organization, often in a unique manner. Finally, the narrator must prepare appropriate linguistic structures; the precise timing of this planning process, which typically does not span more than one or two clauses at a time, depends both upon the speaker and the language in question. In Japanese, usually very small amounts of linguistic structure are produced at a time, at least two or three separate intonation groups per syntactic clause, with noticeable silent and/or filled pauses before each group, which give the speaker additional planning time. As the narrator performs these various cognitive and linguistic tasks, he must maintain awareness of several different factors, such as the potential structural boundaries in the material being narrated, what information has already been mentioned and what will be mentioned at some later point, and the needs of the listener who is trying to understand his story.

This process of verbalization and the type of story which will be produced are strongly influenced by a number of contextual factors. If narration is performed as a memory task, then speakers will strive for accuracy and the retrieval of detail; in a storytelling task, speakers will be concerned with thematic rather than factual accuracy. The nature of the input to the verbalization process has important effects. Texts seem to result in a less detailed and rich memory representation,

perhaps because of the lack of visual input and less stored mental imagery, and speakers will "fill in" details from their prior knowledge of typical event and story schemas. Audio-visual input seems to yield more accurate recall; if the input story also has many different characters and themes and a large amount of dialogue, speakers will tend to produce more elaborated stories. The speaker-hearer relationship is important, since it can influence the speaker's attitude toward narration and his goals, thereby influencing the structure of his story. If the narrator decides to summarize, structural elaboration will be reduced, background information may be omitted, there will be less build-up and denouement in presenting problems and their resolutions, and sentence boundaries will be placed less frequently. The listener's needs also depend upon the narrative context, which influences the structure of a story since certain parts of stories exist for communicative purposes. For example, narrative openings and closings mark the beginning and end of a conversational turn, and will be dispensable in certain elicitation situations; similarly, the amount and type of background information required depends upon the listener's prior knowledge. Even very young children modify their presentation of background information depending upon how familiar the listener is with the material to be narrated [Menig-Peterson, 1975].

In addition to these contextual factors, the process of narration is subject to various cognitive limitations. Clearly, successful narration depends upon the ability to perform several different tasks at once. This, in turn, depends upon the cognitive and linguistic resources which are available at any given point during narration, the difficulty of the tasks being performed at that time, and also individual

and developmentally based cognitive differences. Inconsistencies in the performance and success of certain tasks in the adult narratives indicate that even mature speakers are sometimes forced to set priorities, and to temporarily reduce the amount of attention being devoted to a particular process. Clearly, the highest priority must go to retrieval of the story from memory, so that the speaker will have some basis for narration. Linguistic planning of production units also cannot be ignored, although false starts and grammatical errors showed that speakers sometimes failed to plan linguistic structure adequately.

The adults seemed to devote varying degrees of attention to certain tasks during the course of narration, especially the less crucial ones such as the placement of sentence boundaries; the children were obviously much more limited in the number of tasks which they could perform. Most of the differences between the adult and child narratives could be viewed as resulting from cognitive constraints on the number of tasks which children could undertake simultaneously during narration. Children often ignored the sentence level completely, identifying sentences either with single clauses or the entire narrative. They held fewer themes in mind during narration, and reiterated them less frequently than adults. Complex event sequences were often reduced to single actions and utterances. The problem-resolution schema for content selection was sometimes temporarily abandoned, and the child narrator would focus on details which were irrelevant to the main story themes. At times the younger children relied upon their own experience with certain types of events to retrieve scenes from the videotape they had seen, gaining access to stored material by assimilating it to prior schemas. The task

which had the most far-reaching effects on the children's narratives was taking the listener's point of view during narration. When the child narrators ignored this task, they would fail to provide story and episode settings, to present problems before resolutions, to avoid logical inconsistencies, or to recount enough material to give the listener a fairly accurate idea of the original story.

Progress toward the adult level seemed, in general, to involve an increasing ability to devote a greater amount of attention to these cognitive and linguistic tasks consistently throughout narration. Since the individual differences within a single age group could be greater than the differences between groups, it would be difficult to postulate distinct stages of development on the basis of the present sample of narratives. However, it is possible to specify the areas in which developments were clearly taking place in the age range of 3.10 - 7.4 years. With respect to story structure, there were increases in the production of story and episode settings, indicating developments in decentering. The high frequency of presupposition failure even in the stories of the oldest children, however, showed that much further progress in this area occurs after seven years of age. There was a steady increase across this age range in the clarity with which episodic structure was marked, with an increase in the number of different types of background information presented, perspective changes, and other markers of episode boundaries. There was progress in the elaboration of the basic set of events which formed the skeleton of the narrative; the children over five produced more dialogue, a higher proportion of "reactions" which were not actions, and a smaller number of centrated episodes. In thematic organi-

zation, a change in the direction of the adult standard for content selection was evident, with seven year olds producing fewer mundane themes and less irrelevant information. There were increases in the degree of thematic cohesion in narratives at 5.0 and 5.8 years, with more frequent reiteration of themes presented in "distant" episodes, and a slight increase in the number of complete problem-resolution pairs in the stories of some of the older children. With respect to linguistic organization, there was a decrease in the identification of the clause and sentence levels in this age range, but an increase in the use of the "endless" sentence among the older children, even in very long and detailed narratives. Another linguistic trend away from the adult standard was an increase in the use of "sorede/soshite" (then/and then) as a connecting link between clauses, even where it was redundant or seemed inappropriate. In recall strategies, there was a decreasing reliance upon personal event schemas and an increasing use of themes as guides for retrieving episodes. Although there was noticeable progress in many areas in this age range, even the most advanced children's narratives were still different from the adults' stories in various ways, and it seems likely that progress in narrative skills continues throughout the years to early adulthood [cf. Labov, 1972].

Research on the development of narrative skills is still very new, and much remains to be discovered. At this point longitudinal research on the course of development of different kinds of narratives in individual children and on the types of stories to which children are exposed at different stages of development is lacking. Very little is known about the relationship between the acquisition of narratives and prior

linguistic developments, such as conversational skills. There is almost no information available on the experiences through which children acquire narratives, although some interesting proposals about the roles of adult coaching [McNamee, 1979] and peer group response [Brady, 1978] have been made. Much further research is necessary to establish the types of developments in narrative skills which occur at different ages and to provide a psychological explanation of this developmental sequence. The present dissertation has analyzed some of the developments which occur in Japanese children between the ages of four and seven years, and has suggested an approach to the study of narratives which seeks to explain the characteristics of adult and child stories in terms of the cognitive and linguistic tasks underlying their production.

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