# WHAT HOLDS A NARRATIVE TOGETHER?
# The Linguistic Encoding of Episode Boundaries*

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## 0 Abstract

This paper presents a linguistic analysis of episode boundaries in narratives produced from a 24-page picture book by German and English speakers. We investigate the development of form/function relationships involved in the discursive organization of narratives, attempting to bring together research traditions that typically consider the linguistic structuring and the conceptualization of narratives as two separate domains. Focussing in our analysis on the linguistic realization of discourse boundaries, we integrate a qualitative and quantitative approach to the exploration of (1) the relationship between the existence and commonality ("availability") of particular markers (e.g., aspect) in a given language and the structure that narratives take, and (2) the developmental patterns in the use of several formal devices for serving discourse (i.e., narrative) functions. Episode boundaries were identified with an "importance" judgment task. These ratings were used guiding the analyses of the narrative productions of 72 subjects in three age groups (5 and 9 years, and adults) and two languages (English and German). The findings suggest that, in general, event boundaries ranking higher in the episode hierarchy are more

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clearly marked than events that are seen to be less important. Further, comparing the English and German narratives, the availability of devices in a language can influence the explicitness with which episode boundaries are marked. Lastly, developmental analyses suggest that children in both language groups first mark episode boundaries in the service of highlighting and intensifying locally-defined discourse level units. The use of these markers evolves toward packaging larger discourse units, resulting in a global structuring of the episodic configuration of the narrative whole. These cross-linguistic and developmental patterns suggest that marking episode boundaries involves a complex interplay between two kinds of narrative orientations: (a) the horizontal alignment of linearly-ordered narrative events, and (b) the vertical organization of events along a hierarchical axis of narrative structure.

## 1 Introduction

Using narrative data - and in particular, data from the production of narratives - to investigate the processes underlying and organizing children's acquisition of language(s) represents a shift from the traditional paradigm in two ways: (1) It shifts the focus from the early phases of language development to developmental processes operating through the elementary school years; i.e., from the acquisition of first words and early syntactic constructions to the more complex and plurifunctional, discourse determined structures and functions. (2) It does not start from the assumption that language development consists of components or facets, such as lexical, syntactic and semantic development, which have an ontologically independent status. Instead, these components of language become integrated over development in the acquisition of narrative skill. However, it is not the study of narrative development *per se* that is pursued here. Instead, the narrative monologue is chosen as the data base for investigating in more detail children's budding linguistic knowledge *in its actual use*. Central to our work is the question how children's use of linguistic forms emerges as a product of their developing skills for communication within extended discourse.

This approach starts from the assumption that narrators have options in perspectivizing events from a variety of directions. However, with regard to the linguistic means that

can be employed to communicate the chosen perspective, speakers are tied to a repertoire of conventionalized means, i.e., those that are lexicalized and grammaticized within a particular language.[1] Narrating a simple story, children thus face the task of picking their perspective. At the same time, they must communicate the perspective within the bounds of linguistic means available to them. And these in turn are restricted by the devices available to the particular language being acquired. A cross-linguistic exploration of children's growing narrative perspective may thus be particularly helpful in shedding light on the motives that guide narrators in the choice of perspectives they select.

To produce a narrative requires constructing an extended monologue through establishing local relationships between propositions (i.e., cohesion), as well as through organizing information about characters and events into a globally defined unit (i.e., coherence). Bamberg (1987) has shown that in picture-based narratives, development can be conceptualized as a two-fold, bidirectional process operating simultaneously within the linguistic and conceptual domains. On the one hand, the completed text is the end result of a constructive process of fitting pieces of information together from the bottom-up, forming locally defined units and establishing their interrelationships through sequential connections. On the other hand, narratives by definition also possess a global structure, which is presumably manifested in an underlying conceptual representation. This representation acts as the conceptual starting point from which information is organized into the complete narrative whole, typically arranged in a hierarchical fashion from the most global to most local units. Taking these two processes together, producing any kind of narrative is the result of mapping two aspects of narrative structure onto the linguistic code: Linking together pieces

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[1] This is not to imply that only concepts that are lexicalized or grammaticized in a particular language can be communicated by speakers of that language. Obviously, there are ways to fill lexical gaps or to express novelty. However, those aspects that form part of the lexicon and/or grammar direct the mind towards aspects of the world which otherwise may not necessarily have come to the immediate awareness (cf. Slobin, 1986, 1987).

of information in a linear fashion, while simultaneously organizing and interconnecting information within the overall representational hierarchy along the vertical dimension.

Investigations of narrative have a rich history, more recently including the fields of psycholinguistics and cognitive and developmental psychology. Yet few of these manage to capture the bidirectional nature of narratives, and the interactive role of both local and global pressures in the production and comprehension of narrative. For example, in the traditional work on cohesion, such as that developed by Halliday and Hasan (1976) for English, or in the distinction made by Labov and Waletzky (1967) between the narrative and the free clause, it is difficult to pinpoint how the conceptual organization of narrative information at the global level is integrated into and coordinated with descriptions of the various linguistic means adopted by languages for tying sentences together into linearly-defined units or blocks.

Current research into foreground/background (Hopper, 1979, 1982; Hopper & Thompson, 1980; Chvany, 1985; Tomlin, 1983, 1984), has its origins in Joos (1964) and Weinrich (1964), and investigates how linguistic forms serve to heighten or de-emphasize information that is more or less relevant within a scene, or even within the overall plot of the narrative. Reflective of its roots in the Structuralist tradition, this perspective focuses on establishing typologies of morphological and syntactic devices across languages and language families. Yet while the organizational role of representational structures is acknowledged, global influences are generally subordinated unless they directly relate to the identification of linguistic regularities that establish locally defined cohesive ties between propositions in a text.

The integration of conceptually driven global organization and local, bottom-up processes is, at least implicitly, acknowledged within cognitively oriented approaches, such as the work on story grammars and/or schemata (Mandler, 1978, 1984; Rumelhart, 1975, 1977; Stein & Glenn, 1982). In contrast to the work in the linguistic tradition, these approaches do not generally examine the nature of linguistic devices *per se*. Rather, language is considered to be a "window, albeit sometimes opaque," into the nature of the underlying representation itself (French, 1986, pg. 119). Indirectly, however, this work has contributed to our understanding of several types of devices (primarily in English), both ones which serve to establish local cohesive

ties (e.g., anaphora, definite reference), and those which mark overarching structural relationships (e.g., summary statements, pronominal/nominal shifts, etc.) in a text (Bolinger, 1979; Hinds, 1977, 1979).

A related, but interestingly different perspective within the cognitive orientation aims at a level somewhere between the linguistic, bottom-up and the top-down, hierarchical analysis of episodes. The fine-grained approach developed by Trabasso and his colleagues (e.g., Trabasso, Secco & van den Broek, 1984) attempts to quantify the degree of "causal cohesiveness" between propositions in a text and thus to ascertain the contribution of local, bottom-up relationships to the establishment of top-down coherence. The goal of such work is to determine the extent to which globally defined organizational structures can be derived from relations between information at the local level. In other words, to what extent do textwide structures exist "independently" of the demands placed by local (and thus linguistic) constraints on the expression and organization of pieces of information?

Cognitively oriented research is typically not concerned with the variety of linguistic forms available to a particular language for serving local and/or global text functions. They therefore generally utilize contrived texts that vary in conceptual form (and hence in linguistic form as well) across experimental conditions involving comprehension, recall, or judgments of text organization. Naturally-produced narratives are rarely used as primary data bases. As a result, detailed analyses of the range of what speakers will do in order to meet the bidirectional demands of text construction are also rare within this perspective. Reliance on comprehension, rather than production data, may be attributed to the difficulty of extrapolating information about which underlying representations guide the freely-produced narratives of any one individual. Such difficulties have led some researchers to conclude that production data are inadequate to meet these goals, especially for developmental studies, since such data often underestimate the underlying conceptual sophistication of story tellers (e.g., French, 1986; Mandler, 1983). In contrast, work within the cohesion perspective within linguistics relies almost exclusively on production data, since it focuses on how cohesion is established in discourse via linguistic means. The use of different data-bases may have contributed to the split between the disciplines, most particularly, to the lack of effort to tie the different

approaches together.

One attempt to deliberately fuse these top-down and bottom-up analyses in investigating language acquisition is documented in detail in Bamberg (1987). A number of linguistic contrasts in a simple picture-book narrative were investigated for their role in discursively setting up episode boundaries, and their role in contributing to the establishment of the coherent structure of the story. The present study examines both local cohesive devices and the global aspects inherent in narrative production in order to substantiate the claim that local/linguistically-driven and global/conceptually-driven processes interact simultaneously in theoretically interesting ways during the production of a narrative. Rather than adopt the methodology employed by studies which emphasize functional analyses of particular linguistic forms, our analysis proceeds in the direction followed in cognitive approaches - from episodic structure to particular linguistic markers. We start by first defining the global organization of the story, so that we can then more easily work back and forth between the local and global constraints as they operate concurrently in the construction of the narrative.

The analysis proceeds as follows. First we outline the structure of the story "Frog, Where are you?" a 24-page picture book used to elicit narrative data that would be comparable across different languages and different age groups. Based on intuition, we first identify a number of boundaries between groups of pictures which reflect the story's episodic structure. More concretely, we start from the global theme that holds the pictures together (a boy and a dog SEARCHING for their lost pet frog = SEARCH THEME). Subsequent to the identification of the theme of the story, particular pictures can be grouped together in terms of the spatial layout of the search and its success/failure of success. Emerging from this more intuitive analysis is a structure of the global theme into what we called five separate "search" episodes, out of which the first four end up unsuccessfully, resulting in subsequent reinstantiations of the search theme at new locations.[2] Only the last search

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[2] "*Episodes*" in this context are information units that are complete in their own right, consisting of a REACTION (to an 'outcome') on the protagonist's part [wanting his

episode ends in the re-discovery of what the protagonists of the story have been looking for. On top of this more intuitive analysis of the story structure, we present data from a picture-judgment task which provide a more empirically refined motivation for our analysis (Section 3). In sum, both analyses enable us to define a set of episodes which comprise the story, and the transitions and boundaries which mark inter-episodic differentiation (within the constraints dictated by the pictures) independently of their possible linguistic manifestations.

Next, we examine the sets of devices used by speakers of two languages (English and German) to signal the boundaries and/or transitions between the identified episodes, i.e., where one episode ends and another begins. Obviously, the set of devices that signal such boundaries and transitions differ from language to language - which encouraged us to pursue our developmental analysis cross-linguistically. However, in all languages speakers who want to tell the story are forced to signal in one or another way what and where the search (theme) begins, and where it results in achieving its final destination. Findings are first presented from adult narratives, so as to establish the telos of development, that is, the relationship that obtains between the episodic structure of the information in the pictures and the type and range of devices that co-occur with that content in the narratives of competent adult speakers. We then compare the adult narratives to those of children in the various language groups using two kinds of analyses: (1) We examine how the linguistic means identified as marking transitions and boundaries in the adult narratives were used by children; and (2) we describe linguistic regularities in children's

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frog back], resulting in a GOAL PATH [trying to find the frog], and an OUTCOME [being surprised by an antagonist in episodes 1-4, and finding the frog in episode 5] (cf. Mandler, 1984, pp. 22ff.). As such, each *episode* contains a number of specific events that in structural terms are recurrent units. However, what led us to borrow the notion of *episodes* is not so much the recurrence of structural aspects of the story, but rather the role that these units play in the constitution of the overarching theme, i.e., the search.

narratives by investigating the range of linguistic means that children use (perhaps idiosyncratically) to signal the established episode boundaries and transitions, regardless of whether adults exhibited those same contrasts. This second type of analysis is motivated by the assumption that children do not necessarily use linguistic devices for the same purposes as adults.

## 2. Method

### *2.1 MATERIALS*

The materials used in both tasks were the 24 pictures with no written text taken from *Frog, Where Are You?*. The pictures were presented in either book form or sequentially on slides. The twenty-four pictures in their sequential order present a "real" story in the sense that in the beginning, the 2 main protagonists - a little boy and his dog - are confronted with a problem. This problem motivates the plans and activities of the protagonists as they attempt to find a solution to the problem. At the end of the story a solution is offered. The whole story can be summarized as follows: A boy, a dog and their pet frog are at home together. At night, while the boy and the dog are asleep, the frog runs away. The next morning, after discovering that the frog is gone, the boy and the dog begin to look for the frog. During their search they have adventures and encounter obstacles, mainly with other animals in the forest, but finally they find their frog, and - on the last page of the book - they are shown happily turning homeward with a frog in the boy's hand (See Appendix I for a verbal description of the picture-sequence).[3]

### *2.2 SUBJECTS & PROCEDURES*

#### *(a) Picture judgment*

Sixty-four adult native English-speakers participated in the judgment task. All were undergraduate students between the ages of 18 and 22 who were not familiar with the frog

[3] Further reasons for picking this particular material are outlined in Bamberg, 1987, pp. 20ff.

story prior to their participation in this study. After the subjects viewed the 24 pictures on two successive occasions, they were shown the pictures in their correct order for a third time.[4] Following the presentation of each picture, subjects indicated how important each picture was to the story as a whole using a 1 to 5 scale, from NOT-IMPORTANT to EXTREMELY-IMPORTANT. (See Appendix II for the verbal descriptions given for each scale point.)

*(b) Narrative production*

Thirty-six American-speaking and thirty-six German-speaking subjects participated in this portion of the study. All were native speakers of their language. Within each language group, subjects fell into three sub-groups (N=12): 5-year olds, 9-year olds, and adults. Child subjects came from both upper-working and middle class backgrounds. Adults were undergraduate and graduate students from college/universities. Each group consisted of approximately half male and half female subjects.

All subjects were asked to look through the whole picture-book before producing their narratives. This was to make sure that all subjects "knew" the story content equally well, i.e., had the opportunity to conceptualize the overall goal structure of the picture book. Each subject then told the story to the interviewer in a one-on-one setting, while looking at the pictures. The interviewer looked on jointly, giving a minimum of prompting. All narratives were audio-taped and transcribed later for analysis.

## 3 Toward The Identification of Episodic Boundaries

The book *Frog, Where are You?* has 24 pictures which can be organized into episodes - some number fewer than 24 - which together comprise the global configuration of the story (see Appendix I for a description of the picture sequence). The establishment of boundaries between these episodes is a complex process for several reasons. First, research in the

[4] Adult subjects (N=64) viewed the 24 pictures on slides while participating in another procedure not described here.

conceptual organization of stories from which techniques and procedures may be adopted has typically used comprehension and recall tasks to assess episodic structure. In such research, stories are presented to subjects in either written or oral form and conclusions about the role of underlying representations are drawn according to how that experimental material is read and interpreted against the background of expectations of a story schematic structure (e.g., Lehnert & Ringle, 1985; Mandler, 1983). Linguistic material is given definitional status in determining the episodic structure of the narrative. In contrast, the stories used in the present study are presented to the subjects through a different semiotic system - the 24 pictures. Within the confines of the information presented in the pictures, the subjects create a narrative by recruiting the set of linguistic devices that are most readily available to them.[5] By making this distinction, we do not mean to imply that the 24 pictures contained in the booklet do not represent a "story" in the same sense as the verbal narratives that are typically used in studies of story grammars or schemata. Rather, we assume that the constituents of the story can be interpreted to be directly contained in the pictorial medium. That is, the motives, desires, goals, etc. of all of the characters are somehow implicit in the pictures, and must be inferred and taken into account when translating the story from the pictures into an oral narrative. The process of telling a story involves abstracting information from each picture about each protagonist, character, event, state and activity, and weaving all this together into a single coherent plotline.

From a global perspective, the pictures can be clustered together into a skeleton of a plot, using categories that are reminiscent of the story grammar approach. The pictures clearly delineate a SETTING (frog leaving) and an EPISODE

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[5] Naturally, individual narrators couuld employ - and actually *did* - rare or unusual devices to signal the identified episodic boundaries and transitions between them. However, in spite of these (interesting) differences across individuals, it is a safe guess that across a variety of speakers from a similar background, we will encounter choices of forms that are based on what is most commonly used for the type of perspective chosen.

(search for the frog); and the episode can be further differentiated into a BEGINNING CONSTITUENT (frog leaping away), a DEVELOPMENT (complex reaction resulting in a goal path, constituting a number of attempts with subsequent outcomes), and an ENDING CONSTITUENT (reaction of the protagonists to finding a frog). It is this common structure which makes each individual's narrative a "frog story" (as opposed to a story about something else), and thus, this is what identifies the verbalizations with the contents of the pictures.

One way to capture the interaction of story-structure and narrator-interpretation is to analyze how the narrator establishes causal chains and individual goal paths for each protagonist. By separating out how each picture contributes individually to the body of information about a protagonist, we can come to understand how the individual goal-paths of the protagonists are interwoven into the complete story. The frog story becomes differentiated in terms of the motives and goals of the frog (at the beginning of the story), of the gopher, the bees, the owl, the deer and the other frogs (toward the end of the story), and of the motives and goals of the boy and the dog (throughout the story). Such structural differentiations between the main and sub-protagonists (and antagonists) should be taken into account in order to fully capture the interaction of global story structure and its local organizations. In the present context, due to space limitations, our analyses are confined to the episodic structure as conceived in terms of the "story" of the boy alone, i.e., the search for the frog constitutes the main story line, and the information included in any given narration is interpreted in relation to that story line. The story of the dog will be considered only when it impinges on the boy's motives or plans for further actions.

Table 1 outlines the subcategorization of the 24 pictures into five episodes. We first intuitively judged each picture's role in terms of its individual contribution to the search theme, i.e., to the overall, most global theme of this story. According to recurrences of such roles, we then delineated the episodic structure of the story (E1-E5). For example, in any given episode, a picture, or a set of pictures, can a) INSTANTIATE, b) REINSTANTIATE, or c) CONTINUE the activities and goals of the protagonist. Our analyses of the narrative productions concentrate on systematic developmental and crosslinguistic comparisons between the

various ways that subjects encode information from pictures serving these different episodic roles.

***Table 1: The episodic structure and roles of the 24 pictures***

| *Picture #* | *Episodic Role* | *Episode* |
|---|---|---|
| *1 - 3* | *Prelude* | |
| *4* | *INSTANTIATION* | *E1: initiating event* |
| *5 - 7* | *continuation* | *E1: consequences* |
| *8* | *REINSTANTIATION* | *E2: initiating event* |
| *9* | *continuation* | |
| *10* | *goal-blocking* | *E2: consequences* |
| *11* | *REINSTANTIATION* | *E3: initiating event* |
| *12* | *goal-blocking* | |
| *13* | *continuation* | *E3: consequence* |
| *14* | *REINSTANTIATION* | *E4: initiating event* |
| *15* | *goal-blocking* | |
| *16 - 18* | *continuation* | *E4: consequences* |
| *19* | *REINSTANTIATION* | *E5: initiating event* |
| *20* | *continuation* | *E5: consequences* |
| *21 - 23* | *COMPLETION* | *E5: consequences* |
| *24* | *final response* | |

As shown in Table 1, episodes E1-E5 are ordered sequentially, and do not overlap or weave back and forth within the story. The first episode (E1) begins with an initiating event (the frog running away) and motivates the remaining episodes (the search for the runaway frog). The last episode (E5) leads to the completion, when the search ends after finding a frog (his own or another). Episode E1 (pictures 4-7) can be seen as the most complex in that the boy's activities are most intricately involved with those of the sub-protagonist, the dog. This episode begins with the dog sticking his head in the jar where the frog had been kept. The resulting consequences of that activity, in pictures 5 to 7 (i.e., the dog cannot get his head out of the jar, he falls or jumps out of the window, and the jar breaks) temporarily serve to distract the boy from his goal of finding the frog. In contrast, in E2, E3, E4, and E5, the boy's activities are separate from the dog's, though contemporaneous in some cases. These episodes are strikingly similar in structure and

content, and are in fact interchangeable. In each, the consequence of the initiating event is an immediate blocking of the goal due to the appearance of an unexpected agent, i.e., an antagonist.[6] These unexpected consequences lead to a temporary deviation from the boy's goal path, yet the boy soon finds his way back on track, and the search for the frog is *reinstantiated* at the beginning of the subsequent episode. Lastly, the overarching goal of the story is reached in the concluding episode, E5, where the boy and his dog find a/the frog.

Taken together, episodes E1-E4 comprise the "meat" of the story. These episodes move the story along by linking each reinstantiation of the storyline to its unsuccessful consequences. Aesthetically speaking, the adventures (or mishaps) presented in these episodes are what make the "story" of the boy interesting. Including only the instantiation of the storyline, its recurrent reinstantiations, and the completion -- that is, pictures 4, 8, (possibly 9), 11, 14, 19, and 22/23 -- or narrating the story only in terms of the actual search and the final solution, would fail to capture the complexity of the episodic structure of this picture book.[7]

Our *first intuitive* episodic structuring was compared with results from the Picture Judgment Task, an experimental procedure testing impressions of the "importance" of each

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[6] The sub-protagonist, the dog, also has a series of encounters with antagonists throughout the story. These adventures involve an additional set of antagonists and create a temporal structure that is different from that contained within the "story" of the boy. Because of this, an episodic analysis of the "dog's story" would result in a similar but not identical clustering of the pictures into units, illustrating why a plot structure taken from the point of view of the dog would require an analysis of the functions of linguistic forms in light of a different episodic clustering.

[7] These episodic factors may also relate to how people determine the goodness of "storyhood," that is, what makes a good vs. a bad story (Stein, 1984; Stein & Policastro, 1984).

picture to the overall plot of the story. Results of this experiment provided information about which events are considered most central or crucially plot-defining, and served to identify "importance units" within the story. That is, series of pictures that together are important for "understanding what is going on in the story" warrant similar ratings, while pictures that do not help discern the overall plot structure rate of lower importance. Shifts in the patterns of importance values across the series of pictures can be seen to identify units of information which reflect how the pictures are utilized in understanding the story as a whole.

Subjects were asked to make a decision about the importance of each picture "in its own right," presumably evaluating its importance value against an objective standard. For each picture, subjects were told to ask themselves "whether the story could be understood without this picture". They were not given the idea that their task involved grouping the pictures in any way.[8] This procedure thus differs crucially from one which explicitly requires subjects to cluster the pictures into "episodes," "groups," or even "meaningful units". The notion of importance as a defining criterion for narrative structuring is not without controversy, since it may not be fully consistent with the principled basis for establishing episodes in a story grammar analysis. Regardless, the results from this task nicely mirrored our qualitative clustering of the pictures and provided an interesting companion to our intuitive episodic structuring of the pictures.

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[8] We feel that such procedures would force subjects to organize the narrative in terms of higher-level guiding constructs in ways that are perhaps idiosyncratic to the experimental situations. In contrast, our procedure attempted to determine to what degree the pictures will be clustered together as a function of importance (i.e., how much information they provide for understanding the overall plot), as opposed to explicitly requiring subjects to access the exact abstract categorization or clustering that the task was meant to define (i.e., the episode).

***Table 2:*** ***Mean group judgments of "importance for understanding what is going on in the story" for each of 24 pictures in the book on a scale from 1-5.****

| *Picture #* | *MEAN* | |
|---|---|---|
| *1* | *3.37* | |
| *2* | *4.16* | *Prelude (means = 3.6)* |
| *3* | *3.28* | |
| *4* | *2.56* | |
| *5* | *2.20* | *Episode E1 (mean = 1.89)* |
| *6* | *1.42* | |
| *7* | *1.41* | |
| *8* | *2.86* | |
| *9* | *2.41* | *Episode E2 (mean = 2.39)* |
| *10* | *1.91* | |
| *11* | *2.44* | |
| *12* | *2.33* | *Episode E3 (mean = 2.34)* |
| *13* | *2.33* | |
| *14* | *2.97* | |
| *15* | *3.39* | |
| *16* | *3.37* | *Episode E4 (mean = 3.14)* |
| *17* | *3.48* | |
| *18* | *2.67* | |
| *19* | *3.25* | |
| *20* | *3.14* | *Episode E5 (mean = 3.15)* |
| *21* | *3.06* | |
| *22* | *4.16* | |
| *23* | *4.53* | *Completion (mean = 4.24)* |
| *24* | *4.06* | |

**Judgments were done using a scale of 1 (very unimportant - the story would make perfect sense without this picture) to 5 (very important - story could not be understood without this picture). [N=64]*

Table 2 presents the mean importance ratings for the 24 pictures clustered into groups on the basis of similarity in rating.

Several interesting parallels can be drawn between the picture clusterings seen in Table 1 and Table 2. First, the importance ratings (Table 2) generally reflected the overall plot structure as represented within the qualitative analysis (Table 1). That is, picture 2 (frog leaving, rating = 4.16), and pictures 22-24 (the completion and final response, mean rating = 4.24) were judged to be the most important for understanding the overall story. These pictures provide the endpoints of the skeletal structure of the story, and depict both the establishment and resolution of the major goal of the story. Second, the importance scores reflect the sequential and temporally organized nature of the 24 pictures in three ways: (a) The mean importance of the episodes increases as one proceeds through the story, with Episode E1 rated as the least important (mean rating = 1.89), and Episodes E4 and E5 rated as "somewhat" to "very important" (mean ratings = 3.14 and 3.15, respectively); (b) the first episode, E1, was seen as the least crucial to the story, possibly because it is first in the series (and thus farthest from achieving the goal), or because the boy has been temporarily distracted from his search for the frog, as discussed above; and (c) the fact that Episodes E2 & E3 and E4 & E5 were seen to be virtually identical in importance value is reflective of the interchangeable nature of these episodes. Third, even though the importance ratings often over-differentiated the pictures in as far as each picture had to be differentiated from all the remaining 23, patterns of importance values were identified that paralleled the episodic roles outlined in the qualitative analysis. For example, again, the *INSTANTIATION + COMPLETION* of the search was ranked highest overall. Further, subsequent pictures that *CONTINUE* the activity in an episode generally received similar importance ratings, especially in episodes E1, E3, E4, and E5. Lastly, as one proceeds through the story, each *REINSTANTIATION* of the boy's search was rated higher than the preceding picture, and often higher than the entire preceding episode. Using within-subject non-parametric analysis of variance procedures, significant differences were found between the ratings of pictures 7, 10, 13, and 18 (all of these pictures present the consequence of searching/looking for the lost frog at a particular location) and the corresponding subsequent *REINSTANTIATION* of the search depicted by pictures 8, 11, 14,

and 19, respectively (all of these pictures present the consequence of not having been successful in finding the frog at the previous location).

These two types of analyses taken together provide a substantive basis upon which to outline the structure of the frog story as presented in the 24 pictures. We will discuss the specific linguistic devices that children and adults use to mark various types of transitions and boundaries between these episodes at two major points in the story: (1) INSTANTIATION AND COMPLETION; and (2) REINSTANTIATION of the boy's search compared to actions that CONTINUE the search within the subsequent episode. These comparisons provide a structured way to analyze how linguistic devices are used as a function of the episodic structure of the story. A brief overview of the analysis follows:

1. The beginning and end of the story: Picture 4, the INSTANTIATION of the story, and Pictures 22/23, the COMPLETION, together constitute the frame which holds the sequence of search episodes together. These are the natural places in the narrative for the narrator to comment in an overt way on the establishment and completion of the boy's goal path in the story, i.e., searching for and finding his frog.

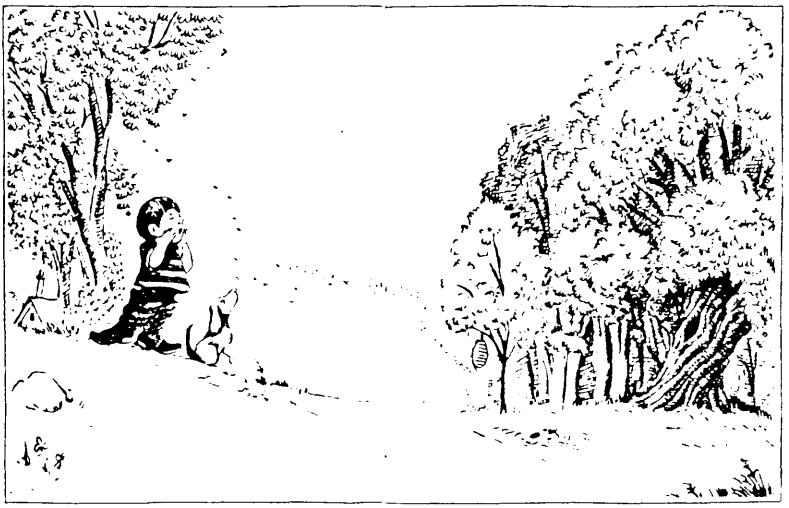
*Picture 4**
Instantiation of the Search

*Picture 22**
End of the Search

2. Reinstantiations and continuations of the story: With respect to the activities of the boy, six pictures (apart from picture 4 which instantiates the search for the lost frog) depict actions which fall within the range of search activities. Four of these pictures, 8, 11, 14, and 19, depict the REINSTANTIATION of the search; and two, pictures 5 and 9, represent CONTINUATIONS of the search theme. Reinstantiations represent new attempts to re-establish the goal path to search for the frog, and must occur after the search has been suspended. In contrast, continuations are less relevant for the plot structure, since they can be presupposed from previous information. Their function lies in providing specific information regarding the whereabouts of the goal blockings (cf. the picture sequence 8 and 9 leading to the gopher's appearance in the hole in picture 10, blocking the boy's goal of finding the frog, thereby forcing him to reinstantiate the search elsewhere - in picture 11 -, starting a new episode).

**Picture Sequence 8 - 11** (comprising Episode 2 + initiating event of episode 3)

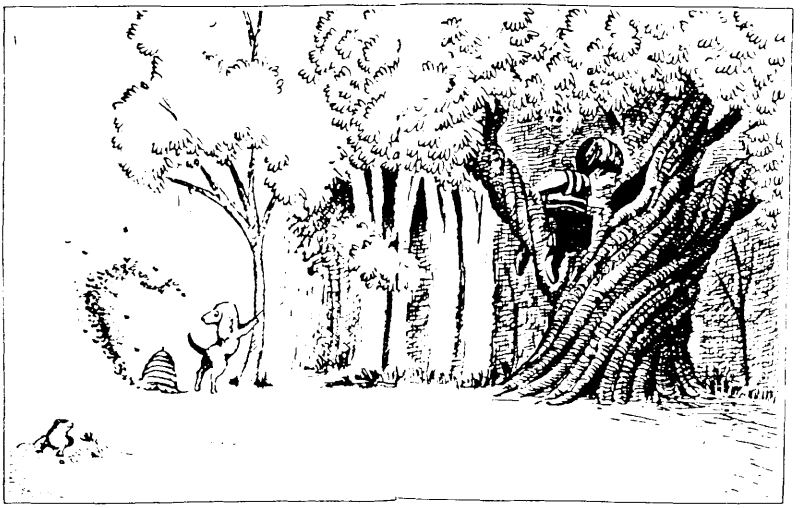
*Picture 8** Reinstantiation of the Search



*Picture 9** Continuation of the Search

*Picture 10** Goal Blocking Scene

*Picture 11** Reinstantiation of the Search



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Two comparisons involving reinstantiations are possible: First, the reinstantiations can differ linguistically from the encoding of picture 4, where the search is originally instantiated (REINSTANTIATION vs. INSTANTIATION). Second, the encoding of reinstantiations may differ from those of pictures 5 and 9, where the boy's search activities are part of an ongoing continuation of the activity which was in focus in the immediately preceding scene (REINSTANTIATION vs. CONTINUATION).

## 4 The Linguistic Encoding of Episode Boundaries

### *4.1 INSTANTIATION*

#### *4.1.1 The encoding of instantiation by the adult narrators*

##### *4.1.1.1 The use of inceptive aspect*

Three (out of 12) of the adult English-speakers and six (out of 12) of the adult German-speakers made use of explicit aspectual markings in the encoding of the protagonist's search activity as depicted in picture 4. The following two examples from an English- and German-speaker, respectively, serve to illustrate how these devices operate in the two languages under investigation:[9]

*(1) E20H-04*
*04-013 they start looking for the frog*
*014 the little boy looks into his boots*

[9] Examples are cited by using the letters E and G for the languages English and German, respectively. The numbers 20, 09, 05 refer to the three age-groups of subjects, and the following letters A - L characterize the code numbers of the 12 subjects of each age- and language-group. The subsequent number refers to the picture of the 24-picture sequence that this example refers to. Thus, *E20H-04* reads: English-speaking subject, adult age-group, code number H, describing/narrating picture 4. The numbers to the left of the actual text-lines mention the picture first, followed by the clause number of the narrative as a whole. Thus, *04-013* reads: picture 4, clause number 13.

(2) *G20L-04*
*04-015 sie fangen an zu suchen*
*[they begin to search]*

*016 der Junge kuckt im Stiefel nach*
*[the boy looks (=searches) in the boot]*

The English forms used for the marking of inceptive aspect are *begin/start + looking* and *going to go look for*, the German forms are *beginnen/fangen an + zu suchen* (=*begin + to search*), *sich auf die Suche machen/begeben* (=*start up the search/go in search*).

Before concluding from this observation that the marking of inception signals that the search part of the narrative is underway, let us compare the use of inceptive aspect at the instantiation of the search with its use in other locations. On only one additional occasion did a narrator overtly mark inceptive aspect with *beginnt* + V (=*begins* + V). This was at the point when the frog leaves home as depicted in picture 2. Nine instances of lexicalized inceptive aspect were expressed with the verb *loslaufen/abhauen* (=*depart/run off*) using the German pre-fix *los-*, *ab-*, *weg-*, and *davon-*; to contextualize the deer's carrying the protagonist to the cliff (3 instances), to indicate the two protagonists leaving the happy-ending scene and heading home (2 instances) (see example 3 below), the frog leaving the jar (2 instances), and the boy leaving home with the dog to embark on the search in the forest - as depicted in picture 8 (2 instances). Only two of these nine instances occurred at what had been defined as 'episode beginnings'.

Thus, in the German narratives, the inceptive aspect (whether lexicalized by use of *beginnen/anfangen*, by use of prefixes or by nominalizations) functions to signal the 'opening' of a narrative sequence of events which requires a subsequent 'closure' in the narrative. This closure can be provided within the same clause, as documented in example (3), but it may also be held off for most of the narrative to find its culmination in the finding of the frog towards the end of the story (example 4).

(3) *G20H-24*
*24-126 und gehen zu dritt fort nach Hause*
*[and go off as a threesome to reach*

*home]*

(4) *G20K-04+22*

*04-013* *jetzt beginnen Max und sein Hund den Frosch überall zu suchen in den Stiefeln im Glas überall*
*[now Max and his dog begin to search for the frog everywhere in the boots in the glass everywhere]*

.
.
.

*22-066* *und zur ganz großen Überraschung findet der Junge auch seinen kleinen Frosch wieder*
*[and to his big surprise the boy also finds his little frog back again]*

Examples (3) & (4) also contrast in their level of discourse organization. Example (4) documents the use of inceptive aspect and the corresponding achievement in the verb *wiederfinden (='find back again'/regain)* as a signal to open and close the global discourse unit 'SEARCH'. In contrast, the opening (=*go off*) and closure (=*to reach home*) in example (3) function at a local level of discourse organization, i.e., they are not relevant for the representation of discourse units which convey the episodic structuring of the story. (Intermediate discourse units will be addressed in a later section.) These examples illustrate the use of aspectual markers at both ends of the global-local continuum of discourse organization.

To further substantiate our analyses let us briefly discuss two of the subjects who used inceptive aspect on picture 8 to mark the boy leaving the house. This usage is perfectly plausible at this narrative location, given that the search outside the house reaches closure in pictures 22/23. However, it is unlikely for a narrator to establish the opening of the search more than once. Thus, these two (German-speaking) narrators seem to convey a particular message by using the inceptive aspect for the event depicted in picture 8 (which in all other narratives is simply the transition and continuation of the search from inside the house to the forest). Indeed, a more refined analysis of the co-text shows that both subjects encode the boy's looking into his boot as depicted in picture 4 as "getting dressed".

Consequently, they defer the marking of the instantiation of the search for the frog to some later point in the narrative - here to the encoding of picture 8 (i.e., the reinstantiation to the second search episode).

To summarize, six German-speaking adult narrators conform to the results from our pictorial rankings and linguistically mark the beginning of the search, while two other subjects deviate from this pattern and create their own structuring. However, these subjects nevertheless make use of the formal device of inceptive aspect for the same function, that is to signal 'search instantiation'. With this in mind, we now can argue that German-speakers use the inceptive marker to demarcate and instantiate the narrative segment that leads to a later closure in the form of finding the run-away frog in the encoding of pictures 22/23.

*4.1.1.2 Forestalling and Nesting*

The narratives presented by the English-speaking adults yield a somewhat less consistent picture. As mentioned, only three out of the 12 subjects of this age group explicitly encode picture 4 by use of inceptive aspect (*begin/start* + V). Two questions arise: First, since inceptive aspect marking is rarely used by English- speaking narrators for the particular purpose of instantiating the search part of the story, is some other linguistic device used in English to signal this function? Second, what function does inceptive aspect marking serve in these adults' narratives?

A closer look reveals that the English adults do not simply describe the actions of the boy in the picture, (e.g., hold up a boot and look into it). Three subjects stated that the boy looked into his boots, using a plural which strictly speaking is not depicted in the picture. We can assume that these narrators inferred: When the boy looked into one of the boots in order to find his frog, he must have looked into the other one as well. Further, the remaining nine subjects gave a whole range of verbal information which also is not reflected in the pictorial information of picture 4. Most commonly found are examples of the following two types:

*(5) E20A-04*
*04-011 and then he looks everywhere*
*012 looks in his boots*

(6) *E20C-04*

*04-013* *well the boy and dog-they look all over for-for the frog*

*014* *they look off in the rooms*

*015* *and they can't seem to find the frog*

The kind of device that is used by the English speaking narrators operates on the basis of the assumption of a cooperative recipient. The narrators generalize over a singular activity of the protagonist as depicted in the picture thereby leaving it to the listener to infer appropriate reasons for doing so.

Reconsidering the narratives of the German speaking adults, we find a similar phenomenon: Those narrators who did not make use of an overt inceptive marker in order to signal the search as being on its way, opted for a similar strategy as most of the English speaking subjects. The following example illustrates this strategy in a German-speaking narrator:

(7) *G20I-04*

*04-008* *sie suchen ihn überall*
*[they look for him (=search) everywhere]*

*009* *der Junge sucht den Frosch im Stiefel*
*[the boy searches the frog in the boot]*

Both this device and overt marking of inception allow the narrator to forestall what will be the theme not only for the immediately subsequent event mentioned in line 009, but rather for the next few episodes in the narrative. Whether it is mentioned that this is the opening of search, or that the protagonist is going to look 'everywhere'/'all-over-the-place', the function of this global level discourse information is the same: The listener is informed about what to expect next, and moreover, that there will be a 'closure' to the protagonist's search activities in subsequent discourse. Consequently, subsequent mentioning of specific search activities are not strictly speaking referring to events that are subsequent to the first mentioned search activity. In this sense, the event mentioned in line 009 of example (7) is not subsequent to the event referred to in line

008. Rather, those events subsequently referred to are all parts (or better: elaborations) of the previously introduced (non-specific) search activity. Thus, the marking of non-specificity signals the overall theme, and as such carries the same force as explicit inceptive marking. Further specific elaborations of the search activity will be understood as "nesting" in what has been forestalled (cf. example 1, 2, 4, 5, and 7). And at the same time, both linguistic devices direct speaker and understander towards a closure of the mentioned activity as a whole in the form of making explicit the success of the search activity.

*4.1.1.3 Summary of adult narratives*

Two ways of indicating instantiations have been isolated. The first involves the use of overt inceptive aspect markings and occurs in most of the German narratives and in a few of the English. A second device involves the use of forestalling and nesting. This strategy dominated the English narratives, but was also found in those German narratives not using overt inceptive aspect markings. Why should English narrators use fewer inceptive aspectual markings than German narrators? We have no precise answer yet. However, excluding ambiguous instances such as *getting mad, getting tired, getting late* and expressions like *they go call in the woods*, or *he went and looked in a hole*, a total of 15 clear inceptive markings occurred in the English narratives. Three were accounted for as signaling the instantiation of the search. Another four narrators mark the beginning of the bees' chase (picture 12), while three other narrators spread inceptive markings across their narratives (once when the dog starts barking, once when the dog starts running, and once when the deer starts giving the boy a ride). These inceptive aspectualizations protract an activity which other narrators viewed as 'comprised' or 'bounded'.

In contrast to all these, one narrator, E20C, disperses aspectual marking throughout her narrative, but uses it differently from the others, not in the instantiation scene depicted in picture 4, but at five subsequent occasions throughout the narrative. Surprisingly, in all five instances, the pictures represent scenes in which the boy (or dog) is depicted as performing a search activity, i.e., calling for the frog:

(8) *E20C-4, 8, 9, 11 & 14*

*04-016 um-they-both the dog and the boy-*
*they-stick their head out the window-*
*017 and they START yelling for the frog*

.
.
.

*08-034 well the boy and dog they go wandering out in the woods*
*035 and the boy STARTS yelling for his frog*

.
.
.

*09-038 {the bee} - the dog um-discovers the beehive-*
*039 and STARTS yelling at it*

.
.
.

*11-049 while the boy [wan-] climbs on top of the tree*
*050 and STARTS yelling in a hole for the frog*

.
.
.

*14-068 and he leans onto some branches*
*069 and STARTS yelling for.....his frog*

This use of inceptive markings sounds rather odd at first. It does not seem to conform to the general discourse function performed by inceptives in both languages under investigation, i.e., to open up a narrative frame at the global level of discourse organization which later on is closed when the frog is found. Instead, this narrator opens the search frame in line 013 (example 6) by use of the lexical item *look for*. Thereafter, all of the protagonist's activities that were encoded as "calling" - the narrator consistently uses *yelling* for these four occasions - were marked inceptively. Note also that the description of the calling activity is always the second of a conjoined chain of clauses, following the schema

{he does X} and (he) STARTS yelling for the frog.
{they do X}

Thus, this use of inceptive aspect marking seems to signal particular discourse segments which coincide with episodic blocks in the overall search. In other words, the use of inceptive aspect by this particular narrator can be interpreted as signaling the 're-opening' of the search frame at the discourse level. However, only in the context of one genuine opening (=the instantiation) and four 're-openings' does the search follow through to its closure with picture 22 of the story. But note that the usage of this particular formal device in such a regular fashion is not required. That is, nothing in the pictures themselves necessitates their being encoded as 'inceptive'. This narrator's usage implies a series of inferences based on a higher level of discourse organization which give the events an overall structuring.

### *4.1.2 The encoding of instantiation in the 9-year old children*

Out of the twelve German speaking 9-year old narrators, nine subjects lexically encoded picture 4 as searching (*suchen*). Out of these nine subjects, six explicitly used the forestalling device "*überall*" (*everywhere*), and one further subject made use of the inceptive aspect "*sofort auf die Suche gehen" (immediately go on search)*. Two narrators out of the twelve do not use any particular marking or mentioning of the search, they simply seem to "describe" the activity of the boy in the picture looking into his boot and getting dressed.[10] The remaining subject may have hinted at the instantiation of the search by encoding the previous picture in terms of a complex reaction on the protagonist's part (line 010), followed by the description of his activity (line 012), thereby hinting at the beginning search by use of indirect means: 'complex reaction' ----> 'goal path' (looking into shoe = 'attempt' in the frame of the overarching goal path of the search).

[10] Additonal remarks about the notion of "description" and or "describing" are given below, particularly in sections 4.3.6 and 5.

(9) G09J-03 & 04

03-010 *ooh wo ist denn der Frosch geblieben*
*[ooh where is the frog gone to]*

04-012 *na und da kuckt der in'n Schuh*
*[well and there he looks into a shoe]*

013 *der Hund Kuckt da nach*
*[the dog looks over there]*

014 *und stellen sie alles auf'm Kopf*
*[and they turn everything upside down]*

Note, however, that the narrator in example (9) turns to a level of description in line 014 which corresponds to what was labelled 'forestalling' in discussing the adult narratives. In the narrative of this 9-year old child, if this statement had been made before line 010 it would have counted as a forestalling device and would have provided a nesting for the encodings of line 012 and 013. Placed here though, it seems that the narrator became aware of the overall motif of the search only retrospectively.

Nine-year old German speaking narrators almost never use the explicit inceptive aspectual marking. Actually only one occurrence of lexical aspect is found in the encoding of picture 08 in *losgehen, um den Frosch zu suchen (=to begin to go search the frog)*. However, one narrator (G09E) makes recurrent use of the forestalling device *überall suchen (=search everywhere)*, prior to giving a specific event description of the boy looking into the boot. This narrator used his device in the same fashion as the English-speaking adult narrator discussed above (E20H), i.e., for the signaling of discourse blocks which coincide with the reinstantiation of the search after it had turned out to be unsuccessful at the four previous locations.

Turning next to the twelve English-speaking 9-year olds, we find a somewhat different picture in the use of linguistic devices. First of all, it has to be noted that six out of the twelve 9-year old subjects (=50%) encode picture 4 as the dressing scene ('putting on clothes'), and obviously could not feel the need to mark this scene as the beginning of the search. However, all of these narrators use inceptive markings on subsequent occasions in their narrations. Only three subjects clearly mark the beginning of the search where

we predicted, two of them by the forestalling device *looking all over the place*, and one by use of inceptive aspect (*started + looking*). Two further narrators simply summarized by *they are looking for him.*

Six narrators, of whom three viewed picture 4 as the dressing scene, used a particular linguistic form (*going to look/search for*) to encode picture 8, i.e., the scene where the boy and the dog have left their home and are outside near the forest calling their pet frog. Though this formal device by itself does not necessarily encode the beginning of the search, it nevertheless signals a focus on the change in location intended by the boy, and as such potentially functions to mark the beginning of a new activity such as the search. Thus, for those three subjects who have not mentioned the search for the frog up to this scene, the use of *going to look/search for the frog* may function to mark the instantiation of the search. For the other three subjects, the search already had been mentioned, thus we have no grounds at all to assume that this form *per se* encodes the instantiation of the search.

Turning to the explicit aspectual marking of the beginning of the search, we find 9-year old English- speaking children, like adult speakers of English, rarely using aspectual marking for this purpose. However, when it comes to the overall use of inceptive aspectual markers in the narratives of the 9-year olds, we find this age group employing this formal device twice as often as adult English-speaking narrators. Out of the seven subjects who used inceptives, six used them for the encoding of the bees leaving the beehive, after the beehive had fallen to the ground (picture 11). Without going into a more detailed analysis at this point, the increase in frequency and the locations in the narrative of inceptive markings in the 9-year olds' narratives suggests that these narrators are striving to use this particular formal device at the micro-level of discourse organization, i.e., at a level where information units smaller than the search (pictures 4-22) are viewed as having a beginning and an ending (including a possible continuation and high point in the middle) - such as the bees' pursuit of the dog (pictures 11-14), or the deer's reaction to the boy's obtrusion (pictures 15-17/18).

### *4.1.3 The encoding of instantiation in the 5-year old children*

Although five year old children are generally very apt at understanding stories and referring to past events, they nevertheless have difficulty when it comes to integrating the hierarchical and sequential ordering of events in these narratives. There is quite a bit of variation among the 5-year olds in structuring the story and in the different kinds of linguistic devices they use to mark story cohesion and coherence.

Four English-speaking and three German-speaking 5-year olds - though commenting on actions depicted in the pictures in question - show no overt marking at all of either the instantiation, the completion, or any instance of the continuation of the search. We have no independent grounds for assuming that these narrators don't know what the story is about, and thus can only conclude that they do not *make reference* to these boundaries of the story. They may assume that the boundaries need not be mentioned overtly, because they are clear to the story recipient or for other reasons. But the narratives of these subjects are quite unlike the others, they appear to lack an internal organization, and give the impression of being unstructured, at times aimless. In contrast, two English-speaking and five German-speaking 5-year olds mention clearly where the search begins, where it is reinstantiated, and where and how it ends. In sum, there are ten subjects (out of the total of 24 5-year old Engligh- and German-speakers) who mark these story components some of the time, but not consistently throughout their narratives. These variations make the group of 5-year olds of particular interest to our analysis. Our concern is not so much with what these children *cannot* yet do compared with adults on the same story-telling task; rather, we focus on the questions: What *do* they do? How do they make use of linguistic devices that serve cohesive and coherence functions? Where do they use them? And how does this use reflect their understanding of the form-function relationships?

Collapsing the English- and German-speaking 5-year olds who encode the instantiation scene, a forestalling device, such as *überall, all over the place* is only used three times, and the German lexical item *suchen (=search, seek)* occurs three times. There is no use of overt inceptive marking for this scene, and two subjects simply refer to the activity of

the protagonist as *calling for the frog.* Furthermore, we find two other inceptive aspectual markings at other occasions in the narrative - one use of German lexical aspect *losreiten (=start riding, riding off*) and two forestalling devices that merit discussion.

First, overt inceptive aspect was "inappropriately" used to encode picture 14, where the boy is standing on top of a big rock, calling for his frog. Inceptive aspect is inappropriate here, since the narrator had already mentioned the calling activity earlier in the story. Thus, the narrator could have either marked the calling as "continuous", i.e., as reinstantiated at this point in the narrative (e.g., "they are still calling"), or he could have signaled that the activity is repetitious, conveying thereby that the activity 'started anew' (e.g., "and they STARTED calling again".) Instead the narrator opted for the inappropriate *and they start calling.*

The second use of overt inceptive aspect signaled that the bees were beginning their pursuit (encoding picture 12):

*(10) E05I-12*
*12-037 and the bees STARTED running after the dog*

However, in contrast to its common use in the adult narratives and particularly in the narratives of the 9-year old English-speakers, it is not used by this 5-year old for the encoding of the previous picture (picture 11, where the bees come out of their hive, 'beginning' their pursuit of the dog). More important, it is not followed by a marking of the 'closure' of the scene later in the narrative, for instance that the bees finally caught up with the boy and punished him for destroying their hive. In both examples, the use of inceptive aspect as a formal device does not fulfill a discursive function of segmenting the text since it neither opens up a scene nor is it followed by the "appropriate" (in the adult usage) discursive sequential closure.

The same point can be made with regard to the use of the forestalling device by subjects E05B and E05H. After having instantiated the search by use of the forestalling device in line 009, subject E05H elaborates later (line 015) with the same device:

(11) *E05H-4, 5 & 8*
*04-009 and then he looks all over the place for his frog*
*05-010 and then he calls frog*
.
.
.
*05-015 he's calling frog ALL OVER THE PLACE*

Though it could be argued that the activity encoded in line 015 ('calling') is different from the one previously mentioned ('looking for' in line 009), the use of *all over the place* carries a different force when used this way. Subject E05B uses this same device (*all over the place*) for the encoding of picture 12, i.e., for the dog's actions in the bees' pursuit:

(12) *E05B-12*
*12-044 he was running ALL OVER THE PLACE*

This example documents that the forestalling device is not used for the same purpose as in either the adult narratives or the narratives of the 9-year olds. Its use by the 5-year olds functions to locally intensify the action, but not to mark a starting point from which the events can later be elaborated.

*4.1.4 Summary of Instantiation*

In summary, 5-year old children only rarely used linguistic devices to mark the instantiation of the search. However, when subjects of this age group used the linguistic devices (e.g., inceptive aspect and/or forestalling) that older and more sophisticated narrators used to mark instantiations, they used them to mark a particular subjective stance. More concretely, these markers were used to intensify particular actions or activities at a more local level of picture descriptions. In addition, the English 9-year olds increasingly used inceptive aspect to identify the beginnings of smaller-than-search-sized information chunks. This pattern implies that these narrators predominantly operate with 'middle-level units' - small discourse blocks which represent information units relevant to the construction of hierarchies, even though the top components of the hierarchy are not

discursively realized. Adult English and German narrators, in contrast to both groups of children, clearly set up and discursively demarcate the instantiation of the search.

Comparing age groups across the two languages, we find that adults in both language groups used the forestalling device in strikingly similar ways. However, English narrators applied it in a more subtle fashion. This is also reflected in differences in cross-linguistic lexical choice: Most of the German adults and half of the German 9-year olds use *suchen (=search/seek)* at this place in the narrative. English-speaking adult narrators, in contrast, overwhelmingly used *look*. On a scale of prototypical telicness, *suchen (=search)* would rank higher than *looking for*, and in particular *looking* - even if the expression was *looking everywhere*. Thus, the German narrators' choice of *suchen* can be seen to place less of an inferential demand on the listener compared to the English adult narrator. This constrast may simply result from the fact that German *suchen* is generally preferred over the German counterpart for *looking for*, i.e., *sich umsehen nach*, while in American English *looking for* and *looking around everywhere* are more frequently used than *search/seek*.

Another striking difference between the two languages lies in the fact that half of the 9-year old English-speaking children encoded picture 4 as the dressing scene, while only one of the German-speaking 9-year olds opted for this perspective. While this could be a random effect, it is nevertheless interesting to note that the manner in which the which the two languages encode the relevant concepts may account for this phenomenon. As mentioned above, English conflates two activities in a predicate using the same verb, *look around* vs. *look for* whereas German has two distinct verbs, *suchen* (=*to search*) and *kucken* (=*to look*). The 9-year old English-speaker might not see the distinction between a purely descriptive statement of the sort "the boy looked into the boot", and a more elaborate indication regarding the search activity of the form "the boy looked everywhere" or "the boy looked for the frog" to be relevant. Due to confusion about the distinctions between these two meanings in English, subjects may have evaded the problem by encoding the scene as the dressing scene, rather than using an expression containing the verb *to look*. This interpretation is speculative and open to further empirical inquiry.

A third cross-linguistic difference was that English-speaking 5- and 9-year olds used inceptive aspect

constructions more frequently than German children. The lack of this device may be due to complexities in German word order, in particular the verb final position of the infinitive verb. While use of this device in English does not require the speaker to deviate from standard SVO word order, in German, the speaker must use the finite aspectual verb *beginnt/fängt an* (=*begins/starts*) and then wait to use the infinitive verb *suchen* until the object, location and possible temporal adverb has been mentioned. Many German 9-year olds have difficulties with this kind of construction, and perhaps it is not surprising to find the German children avoiding them. This explanation is supported in light of the data in both adult groups: In German, the frequency of these constructions increases with age and linguistic sophistication; while in English, these simple and early occurring constructions decline in frequency as their function shifts from marking locally defined units to identifying the global structure of the story.

### *4.2 COMPLETION*

#### *4.2.1 Adult Narratives*

After the narrator has instantiated a search it is necessary at some point in the narrative to signal the achievement of the goal, i.e., that the frog has been found and hence the search successfully completed. For our analyses, the narrator may choose one of the two adult frogs (picture 22) or one of the nine baby frogs (picture 23) as the frog that originally ran away from them. A narrator may also opt for viewing none of these frogs as identical with the boy's original pet frog. In all cases, whatever the choice, the narrator must mark the completion of the search at this point in the narrative (picture 22/23), since some frog has been found. And the last option (a nonidentical frog), which is rarely taken, requires an even more overt statement about the finalization of the search. If the search was instantiated on the basis of the identity of the "frog lost" and the "frog searched for", but then turns on route into a search for any frog (or even any pet animal), such changes in plans make communicative clarification absolutely necessary (see "the principle of analogy", Brown & Yule 1983, pp. 64ff.).

Turning to a more detailed analysis of how adult English

and German narrators linguistically signal the completion of the search, the two following examples illustrate the perspectives that can be taken at this point in the story: The discovery or rediscovery can be viewed from the perspective of the protagonist (example 13) or of the frog (example 14). In the former, the narrator simply notes the achievement of the protagonist's search efforts; whereas, in the latter, the narrator provides a more 'descriptive' account of the location and activity of the frog(s). The protagonist perspective encodes the achievement of the goal and the resolution of the problem. This perspective lessens the inferential load placed on the interlocutor in figuring out who the frogs are and what they are doing here. The narrator in example 14 may be aware of the inferential weight of his choice of perspective and therefore elaborates the whereabouts of the newly introduced referents by explicitly noting the identity of the frog.

*(13)* *E20B-22*

*22-074* *and they find on the other side of the log two happy frogs*

*075* *one of which was the frog in the jar*

*(14)* *E20H-22*

*22-075* *and they're looking over on the other side*

*076* *on the other side are two frogs*

*077* *um-one-possible the frog*

*078* *that escaped from his front room*

One German-speaking adult narrator opts not to identify any of the newly discovered frogs as the boy's run-away frog who caused the search in the first place. Note the elaborate pains that this narrator goes through in lines 143-148 in order to convey the underlying motives for the search (in particular the switch to the simple past in lines 143 and 145, in order to express retrospection).

*(15)* *G20A-21 & 22*

*21-140* *und beide klettern jetzt über diesen Baumstumpf*
*[and both of them climb now over this tree stub]*

*141* *hinter dem sich wahrscheinlich {das*

*Rätsel} des Rätsels Lösung verbergen wird*
*[behind which most likely the solution of the puzzle will be hidden]*

22-142 *und tatsächlich da ist ein Froschpaar zu sehen*
*[and indeed there is a pair of frogs to be seen]*

143 *und es war ja das Ziel des Jungen gewesen die ganze Zeit*
*[and it was the aim of the boy for all this time]*

144 *mit vielen Hindernissen*
*[with a lot of obstacles]*

145 *die er hinter sich hatte*
*[which he had behind himself]*

146 *wo er auch die Natur kennengelernt hat und auch Geschöpfe der Natur*
*[where he has gotten to know the nature and also creatures of the nature]*

147 *und eben daß er ein bißchen vorsichtig sein muß in unbekanntem Gelände*
*[and also that he has to be a little careful in unknown territory]*

148 *da ist jetzt ein Froschpäärchen*
*[there is now a little pair of frogs]*

In spite of these different options that narrators can take in perspectivizing the events, the great majority of the adult narrators in both languages view the event from the perspective of the protagonist(s): Eleven out of the twelve English adults and eleven out of the twelve German adults. Furthermore, eight English-speaking subjects use the lexical aspect marking *find*, while five German-speaking subjects use the German counterpart *finden*. One additional German-speaking subject uses the verb *wiederentdecken* (=*rediscover*), which implies an earlier discovery, and - though to some lesser degree than *find* - some efforts in the journey that led to the fulfillment of the 'rediscovery'. Thus, fourteen narrators (out of twenty-four) use the lexical aspect that German and English share in the lexical items *find, finden,* and *wiederentdecken*. Ten narrators (out of the twenty-four) do not explicitly mark the completion of the search theme by use

of lexical aspect, but the overwhelming majority of all these narrators perspectivizes the frogs' location and/or their activities from the perspective of the protagonist of the story.

*4.2.2 Endings in the 9-year old and 5-year old children*

In contrast to the adults, very few children clearly identified any of the frogs in the discovery scene (pictures 22/23) as the same run-away frog established in the story's setting (pictures 1/2). The frequency with which children used possessive pronouns, and indefinite and definite articles to clarify the frog's identity is outlined in Table 3. Use of the possessive pronoun (e.g., *his frog*) could be taken as a clear indicator of the frog's identity. But the use of the definite article or even the indefinite article does not provide conclusive evidence that these children did not know the frog's identity.

***Table 3: Use of identifying expressions for 'frog' in 'endings'***

| | *9-year olds* | | | |
|---|---|---|---|---|
| | *poss. pronoun* | *def. article* | *indef. article* | *zero pronoun* |
| *English* | *7* | *2* | *3* | *0* |
| *German* | *2* | *6* | *4* | *0* |
| *Sum* | *9* | *8* | *7* | *0* |

| | *5-year olds* | | | |
|---|---|---|---|---|
| | *poss. pronoun* | *def. article* | *indef. article* | *zero pronoun* |
| *English* | *0* | *3* | *8* | *1* |
| *German* | *2* | *4* | *6* | *0* |
| *Sum* | *2* | *7* | *14* | *1* |

Establishing the identity of the frog by mentioning that the protagonist(s) completed the search, alluding to a re-discovery, or any other type of recognition of the frog as

the run-away pet was not common in the 9-year old and 5-year old narrators in either language. Only three 9-year olds and two 5-year olds use *find/finden/wiedersehen* to indicate the termination of the search. One German speaking 5-year old used *finden* for this function, but also used the same verb at four other points in his narrative. Each of these was associated with the failure of the protagonists' search at the different locations, thereby demarcating the endpoints of episodic segments within the narrative at a more intermediate level of discourse organization. In addition, it should be noted that only those children who clearly marked the instantiation of the search with inceptive aspectual devices also used verb forms which overtly signalled the end of the search. In general, however, the youngest children were more likely to describe the completion from the perspective of the frog. They take a more descriptive stance on the scene (19 out of 24).[11] In contrast, the majority of the 9-year olds (18 out of 24) adopted the boy's perspective of 'seeing', 'discovering' or 'finding' the frog(s). Again, this shift in perspective should not be mistaken for lack of knowledge of the story script, i.e., knowledge about the identity of run-away frog in picture 2 and found frog in picture 22, but rather as a decision made by the narrators regarding what they consider communicatively necessary and what should be left unsaid.

### *4.3. REINSTANTIATION AND CONTINUATION*

#### *4.3.1 The encoding of reinstantiating the search*

If a narrator has framed the overall goal of the story in terms of the search for the run-away frog, we would expect him/her to signal when that overall goal is reactivated or 'reinstantiated' after it has been suspended. For example, after picture 5 where the boy is calling the frog from the window, the search is temporarily suspended in pictures 6 and 7, when the dog falls out of the window and breaks the jar. In picture 8, the dog rejoins the boy and the search for the

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[11] Additional remarks about the notion of "description" and or "describing" are given below, particularly in sections 4.3.6 and 5.

frog is reinstantiated, marking the beginning of the next scene. At three other points in the story (pictures 10, 12 & 15), the goal of finding the frog is blocked by the appearance of an antagonist, and the search is temporarily suspended to be reinstantiated later in subsequent pictures. At these four points in the story then (pictures 8, 11, 14 & 19) the overall goal of the story is re-established and each reinstantiation moves the plot on to the next episode.

*4.3.2 Adults*

Starting with the German adults, we should keep in mind that only ten out of the twelve narrators in our sample began the story where we expected them to, i.e., with the encoding of picture 4 (see above). Two subjects instantiated the search using inceptive marking at the point which would normally be considered a reinstantiation of the search.

Out of the remaining ten narrators, seven used a continuity marker to describe the activities identified to reinstantiate the search, most typically the particle *weiter (=continuously)*, a prefix of the German infinitive *weitersuchen*. However, due to German word order constraints, this particle moves after the verb as illustrated in example 16.

*(16) G20H-7 & 8*

*07-036 aber dann vertragen sie sich doch wieder*
*[but then they make up with each other again]*

*037 und suchen WEITER nach dem Frosch*
*[and continue searching for the frog]*

*08-038 und so gehen sie jetzt noch WEITER nach draußen in den Wald*
*[and so they move on further and further outside into the forest]*

*039 und RUFEN UND RUFEN UND SUCHEN*
*[and call and call and search]*

In this excerpt, the narrator clearly marks the end of the side sequence presented in pictures 6 & 7 and re-establishes the overall goal that she had stated previously. The search was reintroduced as she was turning the page (line 037) and the boy and the dog are described as moving *on* in space in the next line, encoded by the same particle: *weiter* (line

038). Finally, in line 039, the narrator makes use of another kind of continuity marker: protracting the act of calling (and searching). Though this last kind of device does not overtly make the point that there has been a previous event of the same goal orientation, it closely resembles the 'forestalling and nesting' function of the device used by the German-speaking narrators with picture 4 (see above discussion in 4.1.1.2).

For picture 11, only half (six out of twelve) of the German-speaking narrators marked the reinstantiation of the search, usually with German weiter (=still). Another, perhaps more explicit means to express that the continuation of the search is worth mentioning is shown in example 17.

(17) *G20B-11*

*07-061 der Junge hat immer noch das Problem*
*[the boy still has the problem]*
*062 den Frosch wiederzufinden*
*[to find back the frog]*
*063 und guckt in einem Baumloch nach*
*[and looks into a tree hole]*

In picture 14, the boy reinstantiates the search after the owl-adventure by standing on top of a rock, holding on to a deer's antlers which look like branches, and calling for the frog. Here narrators use the particle *weiter* less frequently than in picture 8 or 11, choosing instead to signal the continuation of the search by taking a protracted aspectual perspective. At this point in the story, the search has been clearly identified as an ongoing not yet completed event sequence. Mentioning the search by taking a protracted event perspective immediately evokes the concept of a continuous process from its very beginning.[12] Seven out of the twelve adult narrators make use of one of these two devices, clearly marking the reinstantiation of the search.

[12] This observation nicely demonstrates that different aspectual perspectives can provide different meanings as a function of where they occur: The protracted perspective in the first search scene (picture 4) invites a forward-pointing orientation, while the same device calls up more of the past when used midstream (picture 14).

Turning to the English-speaking narrators, we find less explicit marking of the reinstantiation scenes. Combined across all three scenes, these narrators used ten clear markings, i.e., fewer than half the number of markings used by the German-speaking narrators. However, the variety of different markers is larger than in the German sample and no clear best candidate for marking reinstantiation scenes could be identified. The devices used range over *continue* + V (2X), *keep* + V, *going on, some more, again, not give up the search, go back looking for,* including two uses of *still*. While English *still* functions to hook up the event referred to with a previous event, thereby calling up the overarching frame of the search, a narrator's description of the event as *still looking for the frog* (E20J) or *still calling* (E20L) does not reflect the fact that the search had been intermittently suspended.

Why do only 28% of the English-speaking narrators explicitly mark the three scenes as reinstantiations of the search in contrast to 60% of the German-speaking adults? Recall that one particular device is used by almost all of the German narrators, whereas in English, several different devices were used. This suggests that the availability of this particular form may contribute to this difference. German *weiter* (comparative of spatial *weit = wide, broad*) is used productively with activity verbs to signal spatial contiguity or continuity of the activity in question, and can be easily extended metaphorically to express temporal contiguity. German-speaking narrators may have access to a more available means to signal reinstantiation and thus, do so more frequently than English-speaking narrators, who in contrast have to choose among many competitive options, and must opt for linguistically more complex devices.

### *4.3.3 9-year olds' reinstantiations*

On the basis of the above we would expect that those German-speaking 9-year olds who make reference to the instantiation of the search would also make use of *weiter + suchen* (or *rufen*) to signal a return to the ongoing search after an interruption. Furthermore, we would expect the German-speaking 9-year olds to signal the reinstantiation more frequently than English-speaking 9-year olds for two reasons: (1) because adult speakers of German were more likely to do so than English adults, and (2) because German 9-year olds

were more likely than their English-speaking peers to mark the instantiation of the search in the first place.

There are only four instances of German-speaking 9-year olds marking the reinstantiation, twice by use of *weiter*. In the English 9-year olds, only one subject marked the reinstantiation. Recall that 6 of these subjects had not referred to the instantiation of the search earlier in their narrative (picture 4), and so they would have had less motivation to view the search as in progress, or even to mark the boy as returning to the search activity in pictures 8, 11, and 14.

One German 9-year old very clearly attempts to mark the boy's activities in these pictures as part of an overarching goal by use of what we referred to earlier as 'forestalling'. This child (G09E) 'nests' the events in the narrative by relating each specific search event in pictures 4, 5, 8/9, 11 and 13/14) to an explicit searching everywhere (=*überall*). Thus, while not explicitly relating those events where the search is set off temporarily with reinstantiation events, this subject appears to be nevertheless trying to account for how the different episodic blocks (search out of window, in the ground, in the tree, and on top of rock) are grounded in an overall motive.

### *4.3.4 5-year olds' reinstantiations*

Clear markings for reinstantiations are very rare in the narratives of the 5-year olds. One German-speaking child clearly encodes the reinstantiation of the search at a different story location, namely in her encoding of picture 20 after the boy has come out of the water, and signaled the dog to be quiet:

*(18)* *G05K-20*
*20-034* *und da suchen se immer noch den Frosch [and there they still search for the frog]*

At three different pictures, which were clearer or better candidates for marking reinstantiations, the form *weiter* is used, however only in its spatial sense: *weiter-gehen* (=*further-move*) and *weiter-klettern* (=*further-climb*). At a few other reinstantiation points the German-speaking 5-year old narrators use protracted aspectual perspectives in order

to nest the subsequent individual events.

The narratives of the English-speaking 5-year old children also lack the marking of reinstantiations of the search. One subject used *again* (e.g., *call again*), while a second subject used *still, kept on* + V, and the forestalling/nesting device *all over the place*, in order to show that the specific event to be reported is linked with previous events in an overarching manner.

At best these rare instances may be taken as evidence that some 5-year olds possess the ability to linguistically signal the connection of individual events into an episodic structure. Although 5-year olds sometimes make use of *still, again, all over the place*, and German *weiter*, their usage differs in function from the discursive purposes for which these devices are used by adult narrators. For instance, *again*, as used by subject E05B, is discursively misplaced, since the dog's activity ('playing') should have been perspectivized as a continuous event, i.e., there is no reason to believe that the event was recurrent. The use of *again* in example (19) as well as other places in the transcript point up that this child has not drawn a clear distinction between continuous and recurrent events: Both seem to be fused into one temporal/aspectual notion.[13]

*(19)* *E05B-09 & 11*

*09-026* *he [the dog] was playing with the bees*

*027* *he was playing with the bees AGAIN*

.

.

*11-037* *and the dog was still playing with the bees*

[13] The notion of "fused" is not meant to imply that the two concepts of 'recurrence' and 'continuity' have existed independently first, have existed independently first, and then were fused into one. Developmentally, it is more conceivable that the two notions first appeared in the form of one "fused" aspectual concept before both notions were differentiated and hierarchically integrated (cf. Bamberg, Budwig & Kaplan in press; Werner 1957; Werner & Kaplan 1963/84).

*4.3.5 The encoding of continuing the search*

In pictures 5 ('calling out of the window') and 9 ('calling into a hole in the ground'), an event is pictorially represented that is immediately linked to the activity represented in the previous pictures, pictures 4 ('looking for frog in a boot') and 8 ('calling for frog outside in the forest'), respectively. All events in these two pictures are most likely to be encoded as search activities. Of course, each speaker's decision about which aspect of the scene he/she will focus on is reflected in particular lexical choices (*searching, seeking, looking for, calling* + quoted speech, *calling for*, etc.). However, English- and German-speaking narrators do not seem to favor a particular linguistic device to encode the fact that the search activity *continues* in these scenes. Having instantiated the search with the encoding of picture 4, and reinstantiated with picture 8, there is no need to signal the next event as following the same plan, especially when this event is more specific than the previous one as in the following two examples:

*(20)* *G20A-08 & 09*
*08-036* *und dann machen sich die beiden auf*
*[and then the two of them get going]*
*037* *und suchen den Frosch weiter*
*[and continue to search the frog]*
*038* *{und} und rufen*
*[and call]*
*039* *und ziehen durch den Wald*
*[and walk through the forest]*
*09-040* *der Junge sucht {im} im Maulwaufloch*
*[the boy searches in the mole-hole]*

*(21)* *E20D-08 & 09*
*08-019* *after a while - the boy and his dog went out into the forest*
*020* *in search for their frog*
*09-021* *they looked everywhere - in the woods - and - um - EVEN in the gopher holes*

English *even* (or German *sogar*) can serve to signal that an event is added to a series of previously mentioned events. However, this device is only used once, most likely signifying that an orderly presentation of the event sequence from more

general towards the specific event has the same effect. In general, *shifts* in the thematic structure require overt discursive marking, whereas the immediate continuation of the main activity or topic event is what is expected and thus does not require explicit marking. In these narratives, once the search has been established or re-established, the fact that the search activity is continuing is the norm and therefore the aspectual character of the event needs not be made explicit by a particular linguistic marking.

In the two groups of children, very few instances could be reliably interpreted as 'continuations'. While the adult narrators in both languages nearly always referred to these picture sequences (4--5 and 8--9) as instances of searching, many of the 9-year olds and most of the 5-year olds failed to do so. Table 4 presents the frequency of narrative sequences (per age group/per language) which could be taken as legitimate candidates for a (Re-) Instantiation + Continuation sequence for the child narrators.[14]

***Table 4: Number of candidates for (Re-)Instantiation-Continuation sequences***

| | *Sequence Pictures 4-5* | *Sequence Pictures 8-9* | |
|---|---|---|---|
| *English* | *3* | *8* | *5-year olds* |
| *German* | *3* | *6* | |
| *English* | *4* | *11* | *9-year olds* |
| *German* | *10* | *12* | |

Given that continuations were rarely marked by adults and

[14] The poor performance of the English-speaking 9-year olds relates to the fact that 6 (out of 12) subjects interpret picture 4 as representing the boy's dressing scene (see discussion below).

that 9-year olds typically did not mark instantiations of the search, it is not surprising that explicit marking of continuation was non-existent in the 9-year old group. Perhaps the same communicative principle holds here as with the adult narrators: If the search is on, any subsequent activity which can be interpreted as a subcategory of search-activity (e.g., *calling, looking for, trying to find,* etc.) need not be marked as a continuation of this activity.

Interestingly, however, two German and one English 9-year old used subtle devices that hinted at the recurrent theme of the search in repetitious activities (cf. examples 22-24). Just as the German-speakers in these examples use *auch (=also)* and *wieder (=again)*, the English-speaking narrator in example (24) ties the ongoing search to the discovery/finding of a gopher hole.

(22) *G09J-08 & 09*
*08-022* *hey Frosch wo bist du*
*[hey frog where are you]*

*023* *ruft er*
*[calls him]*

.
.

*09-028* *da schreit der Frosch in den Loch "Hey Frosch wo bist du" WIEDER*
*[there the frog [= boy!] calls into the hole "Hey frog where are you" again]*

(23) *G09K-04 & 05*
*04-008* *und dann suchten sie*
*[and then they searched]*
*009* *der Hund und der Junge suchten den Frosch*
*[the dog and the boy searched the frog]*
*05-010* *und dann gucken sie aus dem Fenster*
*[and then they look out of the window]*
*011* *und suchten AUCH da*
*[and searched also there]*

(24) *E09C-08 & 09*
*08-019* *the boy and the dog went looking for*

*the frog*
*020 they yelled for the frog*
*09-021 they FOUND a beehive and a gopher hole*

These devices are not necessarily inappropriately used to signal that the action/activity in pictures 05 and 09 continues the search that was previously (re)instantiated. However, what distinguishes this use of linguistic devices from the adults is that the adults' planning takes place over a larger stretch of the discourse, while the children's planning is restricted to briefer units. Forestalling and nesting are rarely used. Instead, 9-year olds orient the discourse forward, breaking down the sequence of events into sequentially distributed "action centers".

The tendency to distribute activities sequentially is even more predominant among the 5-year old narrators.

*(25) E05H-08 & 09*
*08-015 and he's calling frog all over the place*
*09-018 and he's STILL calling frog*

*(26) E05I-08 & 09*
*08-020 frog! frog! are you in here*
*021 but there was not ribbit ribbit sound*
*09-022 so they WENT ON to look*

*(27) G05J-04 & 05*
*04-018 und da hat er in 'nen Stiefel geguckt [and there he has looked into a/the boot]*
*019 war AUCH nix drin [was also nothing in there]*
*05-020 und da hat der Junge nach draußen geguckt [and there has the boy looked outside]*
*021 und da war er AUCH nicht [and there he wasn't either]*

These three examples illustrate the ways in which the 5-year old narrators tend to contextualize each local description of the events. As they encode each frame, they signal its connection to the overall theme of the search for the run-away frog. This is especially clear in the last example, where in

an otherwise present-tense narrative, the subject introduces two searching attempts (18-19 and 20-21) in the German present perfect, and then finalizes the negative outcome of each attempt in the simple past (*war* + negation). This represents a sophisticated parallelization within two-line frames, each consisting of a comment about attempt and outcome. But here the overarching theme is constituted retrospectively, instead of prospectively as in the narratives of the adults who mark the beginning of the search in picture 04 and nest the subsequent events into the overarching theme.

### *4.3.6 Summary of reinstantiations and continuations*

While adult narrators generally give linguistic expression to the three cases of reinstantiation by use of a continuity marker, 9-year old narrators rarely, and 5-year olds almost never do so. These linguistic markings play two discursive roles. First, they serve to connect each event to one at an earlier reference time, providing continuity throughout the narrative. Thus, they can be seen as 'continuity markers'. Second, through the marking of continuity, the narrator is able to "nest" each relevant activity in the context of the 'ongoing search'. The marking of the reinstantiations in this way, in conjunction with linguistically instantiating the search serves to contextualize the establishment of what we called a "forestalling center". We found that in German, the verbal prefix *weiter-* (as in *weiter-suchen, weiter-rufen* etc. [=*continue to search, continue to call*]) is the prototypical candidate for performing this discourse function. In English, in contrast, no one particular device is favored. The availability of one form which clearly serves these discursive roles may motivate the more frequent marking of reinstantiations in German narratives compared to the American English counterparts.

The linguistic marking of continuative 'non-boundaries' of the search - i.e., where two consecutive activities of the protagonist are described to be search activities - was non-existent in the adult narratives for both languages, although we found an increase in linguistic marking for iterative aspect in the younger groups. These patterns of results were interpreted in light of Gricean conversational postulates: If a topic (i.e., 'the search') is clearly established or re-established, topic continuity is what is to be expected. If

the narrator wants to signal topic discontinuity, then he/she has to provide a special linguistic marking, since discontinuity violates the norm. Thus, in these narratives, perhaps counter-intuitively, 'continuity markers' mark reinstantiations of the search after it has been temporarily suspended, while genuine continuity does not get marked at all.

An even more interesting finding lies in uncovering the mutual effect of marking reinstantiation and continuation. For both languages investigated here, marking of the 'continuation' was more frequent among the younger narrators, quite possibly a result of two different discourse-planning strategies in the different age groups. The 'forestalling and nesting' of the adult narratives requires overt marking of the forestalling center and no marking of the nested event. Such an organization reflects a discourse activity that organizes thematic progression in a top-down fashion. In contrast, younger children make their choices of discourse contextualizations 'on-line', at the same time that the coherence of the overall theme is realized in the actual ongoing speech event. In other words, young children do not signal the directionality of event sequences from the start, but rather retrospectively, from their end. This difference in planning strategy contributes to the impression that younger children seem to more often simply 'describe' what they see in the pictures. One must remember, however, that this task is at its core a descriptive task for all subjects of all languages and all age groups. All narrators must describe the events in order to establish the theme of the story. The important difference between the narrators of different age-groups is not their different "descriptive abilities", but rather the different planning strategies by which they accomplish the task of transforming the picture book into a narrative.

## 5 General Conclusion

In the introductory section, we outlined a set of comparisons between the marking of episode boundaries in a picture book narrative in two languages. We aimed to investigate how the range of devices provided by different linguistic systems influences developing abilities of children to systematically signal episodic structure. Attempting to merge cognitive and linguistic approaches, we started from the

assumption that the events in the pictures would be encoded in a "bounded" form, delineated by the episodic structure. The conceptual structuring of the picture material was confirmed by an empirical measure of "importance" ratings reported in Section 3. These analyses of the conceptual structure of the story provided the bases for our crosslinguistic investigation of the linguistic encoding of episode transitions and boundaries.

However, our expectation of a straightforward relationship between the conceptual and linguistic domains was somewhat naive in two important ways. First, taking the linear sequence of the events as a starting point for analysis, we rarely found overt markings which reveal its order. Unless changing the order of events from its linear sequence in speech is independently motivated, it simply is assumed that the addressee/recipient of the narrative knows the order without being told, i.e., without further linguistic marking. Further, since our social and cultural conventions tell us what events form good episodes, information about episode boundaries might also be part of the shared knowledge between speaker and story recipient, and so eliminate the need to devote special linguistic marking for this purpose. If these assumptions are correct, why expect the episodic structure of the events to be marked linguistically at all? Second, the linearly sequenced events in this story may not represent an episodic structure. In other words, while linear ordering of events can be seen as one kind of sequencing activity, episodic boundaries appear to come into existence from another kind of ordering activity, one which is non-linear, but rather hierarchically organized. Consequently, the two kinds of ordering activities involved in narrating the story do not uniformly result in particular events being encoded as episode boundaries and others as non-boundaries.

This is consistent with our view that narration cannot simply be viewed as a "referential task", where events are lined up and referred to in their order of occurrence. Instead, it consists of more than one organizing orientation, where the non-linear, hierarchial structure elaborates the linear contour of the event-sequence. Our investigation has identified not only several devices that are used to mark episode boundaries, but also how these devices mark <u>shifts</u> in the organizational orientation of narratives. Alternations between establishing the linear, referential order of events on the one hand and integrating the hierarchical, "eventful"

structure of the narrative whole on the other is recoverable by investigating linguistic configurations the way we have proposed here. In consequence, it becomes clear that episode boundaries are a product of such organizational shifts rather than preconditional or presuppositional to such shifts.

In considering how adult narrators in English and German performed on this task, we found quite a bit of variation in their reliance on specific formal devices, both among speakers of the same language, and between the two different languages. Yet our comparisons also revealed several trends which suggest certain generalizations about the development of discourse skills.

Adult narrators overwhelmingly chose to signal the instantiation of the search at a common location in the picture sequence (picture 4). Two linguistic options were identified, inceptive aspect and a forestalling device, but these were differentially preferred in the two languages: English-speakers preferred the forestalling device over inceptive aspect, while German narrators made use of both means equally often. The adults consistently marked the ending of the search sequence by using the lexical item *finden/find*, or by a definite article/possessive pronoun (*They see the/their frog*), or by explicit reference to the identity of the frog. Further, adult narrators of both languages generally retain the perspective of the protagonist(s) up until the final scene - that is, the boy *finds, rediscovers* or *sees* his lost frog - as against the frog just sitting there, waiting *to be found, seen, or rediscovered.*

In contrast to the relatively consistent marking of these components of the *global* frame, the hierarchically lower reinstantiations of the search were differentially marked in the two languages compared. Interestingly, German adults did so about three times more often than English adults, perhaps due to the accessibility of the form *weiter-* (a prefix that can be used productively with any action verb, signaling the prolonging/continuing of the action). Further, the intermittent signaling of reinstantiations implies that these episode constituents play a different role in the composition of the narrative than the instantiation and/or conclusion of the search. Instantiation and ending are excellent candidates for overt appeals to the hierarchical, "eventful" structure of the narrative whole, while reinstantiations do not as clearly lend themselves to this function. Considering that their organizational function ranks lower in the hierarchy

when compared with instantiations and ending, this difference in discursive organization of the narrative becomes more understandable.

In addition, adult narrators consistently resist specifying that the protagonist's activities continue. Rather, each action is simply described as a search activity at a particular location. This finding is consistent with a hierarchical positioning of a continuing activity within the narrative whole. It is thus not surprising that narrators fail to mark their organizational perspectives at these points in their narratives. The sequential arrangement of the events "carries" the plot, and the location of continuing activities at the lowest level of the hierarchy simply gives no motivation for an overt appeal to the hierarchical organization of the narrative.

However, this finding suggests another point: If we had taken a strictly referential or ideational view of language and language function, we would have expected that continuing activities, if referred to in subsequent, linearly ordered speech, would coincide with overt reference to their continuity. However, the linguistic continuity marker is reserved for instances of reinstantiations, and is never applied by adult narrators to continuous acts or activities. Again, this finding clearly supports the view that narrative texture consists of both kinds of organizational orientations, the horizontal concatenation of events in light of the implicitly vertical and hierarchical axis of narrative organization.

Concerning the children's performance on the narrative task, our analyses not only focussed on those linguistic markings that were used to establish the hierarchical organization, but also how those markers were used at other points in the children's narratives. Beginning with the most complex finding, we found that the frequency with which the beginning of the search is signaled increases with age in both language groups. However, a more detailed analysis revealed interesting developmental differences. First, the forestalling strategy that was used by adult narrators as a global organizer was used by the 5-year old subjects to intensify the description of a particular activity at a local level. These activities were not relevant to the goal path of the story, yet were apparently seen as more salient or interesting by the children (e.g., the dog being followed by a string of bees). Second, an inceptive aspect marker was

rarely used to mark the instantiation of the search theme by children in either language. Inceptive aspect was used with higher frequency in the English 9-year olds, but at points in the narrative other than instantiation boundaries. These same grammatical devices serve different functional purposes for adults and children. Inceptive aspect is employed - especially by the 9-year olds - in order to "package" small discourse units, i.e., 'middle-level episodes', such as the bees' pursuits of the dog or the deer's throwing the boy off his antlers. A few 5-year olds also appeared to use inceptive aspect for a similar purpose, providing some evidence for discursive packaging. However, 5-year old children were more likely to use inceptive aspect or the forestalling device to shift perspective from a seemingly purely descriptive level to a more involved and intensifying subjective stance.

In sum, the discursive devices which serve to signal the hierarchical, top-down structure of a story in the adult narratives appear to emerge earlier in development at the local-level of narrative organization. Children's early employment of these devices serves primarily to intensify isolated referential events in the narrative; later, they linguistically identify small 'middle-level' packages within which local level themes are bounded and discursively organized. Eventually, linguistic attention is oriented to the top nodes of the hierarchy, and the overall theme within which the local events are organized and integrated can be established.

The ways in which children differentiated reinstantations from continuations revealed two opposing trends: The younger children did not use continuous aspect (*weiter* + V, *continue* + V, etc.) to mark reinstantiations at specific boundary points. Instead, they used this device to mark 'story continuations'. In other words, young children appear to employ continuous aspect to refer to aspects of event structure that "go without saying" for the 9-year olds and adults. Again, these patterns of results suggest that young children work their way into appropriate discourse marking from local to global levels. They begin by adding information to the linearly ordered sequences of events, which from an adult perspective is an "overmarking". However, for the child, this usage may represent an initial phase in which the device is "freed" from the local, more descriptive, referential level of language use, allowing it to take on a non-referential perspective and discursively to organize

larger and larger discourse units. Finally, this non-referential organization will be integrated in a hierarchical form of organization along a vertical axis, thus differentiating the two kinds of organizational orientations along the horizontalal *and* vertical axes.

The present investigation has certain limitations. First, it examines one particular discourse genre, i.e., telling a story from pictured material. Second, the cross-linguistic analyses involve two languages that are closely related to one another. And third, it relies primarily on descriptive or qualitative analyses. Nonetheless, several interesting insights have emerged. The first concerns the nature of the relationship between grammatical devices - in particular aspectual markings - and discourse functions. In both languages investigated, inceptive and continuous aspect were not used exclusively to characterize the contours of activities. Rather than supporting a referential or ideational perspective on the function of grammatical devices in language use, our analysis reveals that aspectual markings function to present and elaborate the linear ordering of events within the framework of a non-linear, hierarchical discourse structure.

Second, we found cross-linguistic differences in the relationship between complexity of form and frequency of usage. The discovery of such differences suggests that the coordination of horizontal and vertical axes of narrative organization may be related to such differences in the structure of the linguistic system. Further investigations should address the discourse role of aspectual markers in languages that organize their aspectual systems in different ways. For example, does obligatory marking influence the signaling of higher order, global discourse boundaries in ways that are qualitatively different from languages with systems of optional markings (cf. Slobin, 1987)?

Third, our developmental comparisons revealed that children at all ages were able to sequence the story in terms of linear events. However, young children did poorly with respect to marking global boundaries. Further, the markers that adults used for global discourse functions were used by children mainly to mark local highlightings. These findings suggest that grammatical markers undergo shifts in function from the first to more mature usages. However, this finding does <u>not</u> imply that children's acquisition of aspectual markings begins at the referential, ideational level of

language use. The early, local level use of aspectual distinctions to highlight and intensify particular information clearly documents a removal from a purely ideational and referential perspective on events (see Labov, 1984). At the same time, it represents the initial stages of viewing the discourse unit from a subjective perspective or point of view. Viewing the acquisition of linguistic forms in this way is compatible with the assumption that children take into account what particular grammatical devices *do* in discourse (apart from their referential functions) from very early on.

Our most important finding lies in the identification and differentiation of two organizational orientations involved in holding a narrative together. In telling a story, language is used on the one hand in an ideational or referential function to delineate and sequentially order events. On the other, it also serves a textual and interpersonal function, providing "eventfulness" and meaning to a linear sequence of events from within a hierarchical and global perspective. Both orientations are instrumental in the constitution of the narrative as a whole. Our analysis showed that aspectual markers - i.e., viewing events from a particular perspective (internally as well as externally) - are prime candidates for signaling shifts in narrative orientation. Certainly, the same shifts can be expressed by use of other linguistic devices as well, such as emotionals, negatives or voice shifts (see Bamberg, in press). More concretely, the use of aspectual markings in a narrative must be viewed beyond the semantic delineation of the event contour. Discursively, by signaling the shift between the horizontal axis of the narrative and the vertical axis, aspectual markings function as "contextualization cues" to the kind of narrative orientation which the narrator is in the process of adopting (Gumperz, 1982).

For the language learner, then, the differentiation between the two different axes of narrative organization becomes salient only during the activity of narration. Clearly, the objective characterization of events in and of themselves cannot provide the learner with sufficient data to master the appropriate uses of inceptive or continuous aspect markers. Rather, each event is viewed *in the context of the narrative*, in order to gain an understanding of the relationship between story structure and its linguistic manifestation. Adopting this perspective involves an active choice on the part of the speaker with regard to which events

are relevant within the hierarchical story structure, and marks a move away from a purely locally based ordering of events. Consequently, learning to tell a story, and probably learning to participate in other modes of discourse, involves the gradual association of particular linguistic devices with the discourse-based functions which they represent. These form/function relationships can have a different character in different languages, and may influence the surface shape of a narrative in complex and interesting ways.

**REFERENCES**

Bamberg, M. (1987) The acquistion of narratives. Berlin: Mouton de Gruyter.

Bamberg, M. (In press) Narrative as perspective taking: The role of emotionals, negations, and voice in the construction of the story realm. Journal of Cognitive Psychotherapy: An International Quarterly.

Bamberg, M., Budwig, N. & Kaplan, B. (in press) A developmental approach to language acquisition: Two case studies. First Language, 10.

Bolinger, D. (1979) Pronouns in discourse. In T. Givon (ed.), Syntax and semantics, vol. 12: Discourse and syntax. New York: Academic Press, 289-309.

Brown, G. & Yule, G. (1983) Discourse analysis. Cambridge: University Press.

Chvany, C. (1985) Backgrounded perfectives and plot line imperfectives. In M. S. Flier & A. Timberlake (eds), The scope of Slavic aspect. Columbus: Slavica, 247-73.

French, L. (1986) The language of events. In K. Nelson (ed.), Event knowledge. Hillsdale, N.J.: Erlbaum, 119-36.

Gumperz, J. (1982) Discourse strategies. Cambridge: University Press.

Halliday, M. & Hasan, R. (1976) Cohesion in English. London: Longman.

Hinds, J. (1977) Paragraph structure and pronominalization. Papers in Linguistics, 10, 77-99.

Hinds, J. (1979) Organizational patterns in discourse. In T. Givon (ed.), Syntax and Semantics, vol. 12: Discourse and syntax. New York: Academic Press, 135-57.

Hopper, P. (1979) Aspect and foregrounding in discourse. In T. Givon (ed.), Syntax and semantics, vol. 12: Discourse and syntax. New York: Academic Press, 213-41.

Hopper, P. (1982) Aspect before discourse and grammar. In P.J. Hopper (ed.), Tense-aspect: Between semantics and pragmatics. Amsterdam: John Benjamins, 3-18.

Hopper, P. & Thompson, S. (1980) Transitivity in grammar and discourse. Language, 56, 251-99.

Joos, M. (1964) The English verb. Form and meanings. Madison: University Press.

Labov, W. (1984) Intensity. In D. Schiffrin (ed.), Meaning, form, and use in context: Linguistic applications, (Georgetown University Round Table on Languages and

Linguistics). Washington, D.C.: Georgetown University Press, 43-70.

Labov, W. & Waletzky, J. (1967) Narrative analysis: Oral versions of personal experience. In J. Helm (ed.), Essays on the verbal arts. Seattle: University of Washington Press, 12-44.

Lehnert, W. & Ringle, M. H. (1982) Strategies for natural language processing. Hillsdale, N.J.: Erlbaum.

Mandler, J. (1978) A code in the node: The use of a story schema in retrieval. Discourse Processes, 1, 14-35.

Mandler, J. (1983) Representation. In P. Mussen (ed.), Cognitive development, vol. III, Handbook of child psychology, ed. by John H. Flavell and Ellen M. Markman. New York: Wiley, 420-94.

Mandler, J. (1984) Stories, scripts, and scenes: Aspects of schema theory. Hillsdale, N.J.: Erlbaum.

Rumelhart, D. (1975) Notes on a schema for stories. In D.G. Bobrow & A. Collins (eds), Representation and understanding: Studies in cognitive science. New York: Academic Press, 221-36.

Rumelhart, D. (1977) Understanding and summarizing brief stories. In D. L. Berse & S. J. Samuels (eds), Basic processes in reading: Perception and comprehension. Hillsdale, N.J.: Erlbaum, 265-303.

Slobin, D. (1986) The development from child speaker to native speaker. Paper presented at the First Annual Chicago symposium on Culture and Human Development, October 23-25.

Slobin, D. (1987) Thinking for speaking. Proceedings of the Thirteenth Annual Meeting of the Berkeley Linguistics Society, February.

Stein, N. L. & Glenn, C. G. (1982) Children's concept of time: The development of a story schema. In W. J. Friedman (ed.), The developmental psychology of time. New York: Academic Press, 255-82.

Stein, N. L. & Policastro, M. (1984) The concept of a story: A comparison between children's and teacher's viewpoints. In H. Mandl, N. L. Stein & T. Trabasso (eds), Learning and comprehension of text. Hillsdale, N.J.: Erlbaum, 113-55.

Tomlin, R. S. (1983) On the interaction of syntactic subject, thematic information, and agent in English. Journal of Pragmatics, 7, 411-32.

Tomlin, R. S. (1984) The treatment of foreground-background

information in the on-line descriptive discourse of second language learners. Studies in Second Language Acquisition, 6:2, 115-42.

Trabasso, T., Secco, T. & Van Den Broek, P. (1984) Causal cohesion and story coherence. In H. Mandl, N. L. Stein & T. Trabasso (eds), Learning and comprehension of text. Hillsdale, N.J.: Erlbaum, 83-111.

Weinrich, H. (1964) Tempus: Besprochene und erzählte Welt. Stuttgart: Kohlhammer.

Werner, H. (1957) The concept of development from a comparative and organismic point of view. In D.B. Harris (ed.), The concept of development: An issue in the study of human behavior. Minneapolis: University of Minnesota Press.

Werner, H. & Kaplan, B. (1963/84) Symbol formation. Hillsdale, N.J.: Erlbaum.

# APPENDIX I

Verbal description of the picture sequence: The picture book used in the narration task described is Frog, Where Are You?, by Mercer Meyer, a Pied Piper Book published by the Dial Press. The 24 pictures which make up the book are herewith described in sequence:

1. The scene is a bedroom, with a light on over the bed and a new moon visible through the open window. A boy's clothes are strewn about the floor. A boy in pajamas is sitting on a stool, regarding with a smile a frog in a large glass jar on the floor at his feet. A dog is standing on its hind legs, peering into the jar.

2. The light is out. The boy and the dog are both asleep on the bed. The frog, with a smile on its face, is climbing out of the jar.

3. Morning. The boy, with a distressed look on his face, is leaning over the foot of the bed gazing at the empty jar. The dog is looking over the boy's shoulder.

4. The boy's pajamas are tossed on the bed. The boy, dressed except for shoes, is holding one of his boots over his head and looking into it. The stool is lying upside down. The jar is lying on its side. The dog has put its head into the jar.

5. View of the window from the outside. The boy is holding the window open with one hand and has the other cupped at his mouth, which is open. The dog, still with its head in the jar, is balanced precariously on the windowsill.

6. The dog falls from the windowsill. The boy is pressing his fingers against his mouth as he watches.

7. The boy is standing on the ground outside the window with the fragments of the broken jar around his feet, an angry look on his face, with the dog in his arms. The dog is licking the boy's face.

8. The scene is the edge of a wood. The boy is facing the

wood, his hands cupped at his open mouth. The dog is sitting at the boy's feet, one paw raised. From a bees' nest hanging from a tree at the edge of the wood there is a stream of bees all the way over to the boy and the dog. The dog is sniffing at a bee as it flies past.

9. The boy and the dog are under the tree from which the bees' nest is hanging. The boy is on his knees with his head close to a hole in the ground, his hand cupped at his open mouth. The dog is jumping at the bees' nest.

10. A small rodent-like animal has half-emerged from the hole. The boy is sitting back on his heels, clutching his nose with both hands. The dog has its forepaws braced against the tree and its open mouth pointing toward the bees' nest.

11. The rodent is looking out of the hole at the boy, who has climbed into a very large tree a short distance away from the tree with the beehive. The boy is looking into a hole in the trunk of the tree just above the branch he is sitting on. The dog, still with its forepaws against the bee-tree, is looking over its shoulder at the broken bees' nest on the ground, from which a thick cloud of bees is emerging.

12. An owl with its wings spread is perched on the edge of the hole in the tree. The boy is lying on his back under the spot where he was sitting, with his legs in the air. Between the owl and the boy is passing a thick stream of bees in pursuit of the dog. The dog is running, its ears flapping.

13. The boy, his hands held up in front of his head, is standing before a large boulder and some smaller rocks. Behind the boulder what appear to be bare branches are sticking up. The owl, with spread wings, is in the air above the boy.

14. The owl is perched on a tree branch. The dog is creeping along the foot of the rocks. The boy is standing on the boulder holding onto the bare branches, his hand cupped at his open mouth.

15. The bare branches are really the antlers of a deer standing behind the boulder. The deer has lifted its head and the boy is draped over the antlers. The dog is sticking its head into a hole behind one of the rocks.

16. The deer, with the boy still on its head, is walking toward the edge of what seems to be a cliff. The dog is leaping in front of the deer, looking up at the boy.

17. The cliff is now recognized as the high bank of a stream. The deer has stopped at the edge, head downward. The boy is falling too, in a jumble of falling clods of earth.

18. The boy is lying in the stream, legs in the air, with the dog on his stomach. The deer is smiling over the edge of the bank at them.

19. The boy is sitting up in the stream, the dog on his head. The boy has his hand cupped to his ear and is smiling. He is looking at a log lying half in the stream and half on the opposite bank.

20. The boy is kneeling next to the hollow end of the log, one hand on the log, the other at his mouth with his forefinger raised in a hushing gesture. The dog is standing next to him in the stream, only its head and tail above the surface.

21. The boy is standing on his toes, leaning over the log and looking down on the other side. The dog is standing on top of the log next to the boy, also looking down on the other side.

22. View from the other side of the log. The boy and the dog are both lying on top of the log, still looking down. On the ground on this side of the log are two frogs nestling together.

23. The boy and the dog are sitting up on the log. Nine tiny frogs are emerging from a clump of reeds next to the log.

24. The two large frogs and eight of the little ones are sitting in a row on top of the log, facing across the stream. The boy and the dog are crossing the stream.

Both are looking back at the frogs. The boy has one hand raised in a wave. In the other he is holding one of the little frogs.

# APPENDIX II

Importance Ratings for Pictures

| | |
|---|---|
| 1 | NOT IMPORTANT<br>The story would make perfect sense without this picture. |
| 2 | SOMEWHAT UNIMPORTANT<br>The story would make sense, but it would take some work to understand the story without this picture. |
| 3 | SOMEWHAT IMPORTANT<br>The story would still make sense but it would take a lot of work to understand the story without this picture. |
| 4 | VERY IMPORTANT<br>It would be very difficult to understand the story without this picture. |
| 5 | EXTREMELY IMPORTANT<br>The story could not be understood without this picture. |