Backtracking and Reorganization in Narrative

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1. INTRODUCTION

The purpose of the present study is to show the developmental process of children's narrative skill for story telling, how they develop the ability to "tell a story". The study pays particular attention to *backtracking* and *reorganization* ability (defined in 2.2), which are considered to be conceptually and linguistically complex narrative skills required to construct a well-formed fictional story.

There is a rich body of literature on the development of children's ability to produce narrative texts (reviewed, for example in Bamberg, 1987; Peterson & McCabe, 1983, Toolan, 1988). The present research especially draws on the functionalist-conceptual approach to the narrative study by Berman and Slobin (1994), in which they claimed that linguistic forms and narrative discourse skills develop in complex interrelation. That is, on the level of narrative development, there is a common developmental pattern towards increasing cohesion and coherence across age and language. On the level of general linguistic development, linguistic devices develop in connection to increasing narrative proficiency.

The common pattern Berman and Slobin (1994) found is a single developmental continuum representing four phases in the evolution of narrative capacity: (a) spatially-motivated linking of utterances as picture-by-picture description (3-year-olds); (b) temporal organization at a local level of interclausal sequential chaining of events (most 5-year-olds); (c) sequential and/or causal chaining of partially elaborated events (most 9-year-olds); and (d) global organization of entire texts around a unified action-structure (some 9-year-olds, and the adults).

The main concern of the present study is how children's ability to perform backtracking and reorganization in narrative discourse processing emerges and evolves with the increase of general linguistic competence, as well as with narrative discourse competence. Narrative discourse competence is demonstrated by, for example, producing thematic coherence on the macro-level of plot organization, and demonstrating linguistic cohesion on the micro-level of individual and adjacent clauses.

In this study, the ability to perform backtracking and reorganization is investigated by characterizing the texts produced by children of five different age groups and by adults. It goes on to compare these characterizations with the four-stage evolution of narrative capacities proposed by Berman and Slobin, as mentioned above.

2. RESEARCH DESIGN

2.1 Subjects and Data Base

The narrative texts analyzed in this study are oral narratives derived from "Frog, Where Are You?" (Mayer, 1969), a picture storybook without verbal text. The author of this study gathered the narratives from Japanese children (from 3- to 11-year old) and adults, following the same procedure and instruction as Berman et al. (1986). Although there were slight variations in instruction among adults, preschool children and older children, the basic instructions given were as follows:

Kore wa shonen to inu to kaeru no hanashi desu. Hajimeni kono ehon o saigo no peiji made mite donna hanashi ka kangaete kudasai. Sorega owattara ehon o moichido hajime kara minagara kono monogatari o hanashite kudasai.

"This is a book that tells a story about a boy, a dog and a frog. First take a look at the entire book to

get an idea of what the story is. When you are finished, go back to the beginning. While looking at each picture, tell the story."

This study analyses the texts produced by members of six different age groups - 3 years, 4 years, 5 years, 9 years, 11 years, and adults - in this data base. There were ten subjects in each group. The age-range, mean age, background, and further information about the subjects can be found in Inaba (1999), which makes use of the same data base as this study.

It should be noted here that the children are asked to tell a story looking at the picture book after getting an idea of the story in mind. This procedure has two distinct advantages: 1) it imposes less of a burden on the child's memory, and 2) it provides the child a chance to organize the story before he or she starts talking. This second advantage is especially important because this study evaluates the children's abilities to "backtrack" and "reorganize" the events, and to perform those tasks a child must grasp the story, if possible, before beginning to talk about it.

2.2 Definition: Backtracking and Reorganization

One of the most complex parts of the Frog story was used to demonstrate the development of the ability to backtrack and to reorganize events in a narrative. Pictures 14 and 15, on two different pages of the storybook, were chosen for this study. The first picture (Picture 14) depicts the boy climbing to the top of a rock to call to his frog, grabbing what he thinks are branches behind the top of the rock (hereafter referred to as the "rock-climbing event"). The next picture (Picture 15), seen after one turns the page, shows the boy entangled in the antlers of a deer hidden behind the rock (referred to as the "deer-carrying event").

In order to make the proper connection between these two events, the narrator must do two things: 1) go back and retrace his or her steps to re-identify the branches as antlers, and then 2) re-evaluate the connection between the boy being on top of the rock and then on top of the deer. What needs to be inferred here is that the event in 15 is the consequence of the "boy's misperception" or his unintentional act (grabbing) depicted in 14. This sequence involves a complex kind of information processing at perceptual, conceptual, and linguistic levels. In this study, the first process, re-identifying the branches as antlers, is referred to as "backtracking", and the second, re-evaluating the connection between the pictures, as "reorganization".

A mature rendering of the contents of these related pictures imposes a considerable burden on the narrator in that it requires a perceptual interpretation of the pictures, a conceptualization of the link between two apparently distinct events, and the linguistic formulation of the initial event and its unforeseeable consequences. (Berman and Slobin; 1994, p. 54).

2.3 Measurement

The five criteria defined below (I to V) make it possible to evaluate a narrator's proficiency in backtracking and reorganization. They do so by breaking the complex interrelation of the two events (the rock-climbing event and the deer-carrying event) into five stages of complexity as demonstrated by the presence or absence of different components in the narrative. (A label for each category is shown in parentheses)

I (NON): one or no event mentioned

e. g.   *Otokonoko ga iwa no ue de kaeru o yondeiru. / Shika ga iru.*
         "The boy is calling to his frog on the rock./ There is a deer."

II (SEQ): makes explicit mention of both events, but treats them as two distinct events which are totally unrelated or merely in chronological sequence.

e. g.   *Iwa no ue de kaeru o yondeiru. Otokonoko ga Shika no ue ni iru.*
         "The boy is calling to his frog on the rock. The boy is on the deer."

III (IMP): implied the boy made a mistake; makes some further inferences between the two events, mainly by mentioning that the boy's getting caught in the deer's antlers was an accidental or unintentional act, implying, but not stating, the boy's misperception of the antlers.

e. g.   *Otokonoko ga iwa no ue de kaeru o yondeiru to, totsuzen shika ga arawarete, shika no atama no ue ni notte shimaimashita.*

"When the boy was calling to his frog on the rock; suddenly the deer appeared and the boy got caught on its head."

IV (EXP): misperception explicit; refers overtly to the boy's misperception, but not giving explicit expression to all the relevant features of this chain of events.

e. g.   *Ki no youna mono wa tsuno deshita.*

"The things which looked like a tree were antlers."

V (MTR): mature rendering; make a clear connection between the branches the boy was holding onto and the antlers he got engaged in, explicitly mentioning the boy's misperception.

e. g.   *Otokonoko wa iwa no ue ni nobotte kaeru o yonde imasu. Suruto totsuzen shika ga arawarete otokonoko wa shika no atama no ue ni notteshimaimashita. Otokonoko ga ki no eda da to omotte ita mono wa jitsuwa shika no tsuno datta no desu.*

"The boy climbed the to the top of the rock and is calling for his frog, grabbing the branches of the tree. Then, suddenly a deer appeared and the boy got caught on its head. What the boy thought were branches were actually the antlers of a deer."

These criteria are derived from similar criteria used in a study by Berman and Slobin (1994). Their study was designed to measure the narrative ability to construct the local structure of the same scenes used in this study. Berman and Slobin assigned features of texts to one of four categories such as 1) one or no event mentioned, 2) unrelated sequence of two events, 3) mistake implied, and 4) misperception explicit. This study revised their last category and created a new one, V (MTR), to designate full mature rendering. Although Berman and Slobin's original criteria were appropriate to show the emergence of the backtracking and reorganization abilities in narrative construction, these categories did not fully differentiate the higher/mature level of event organization from the lower/developing level of it.
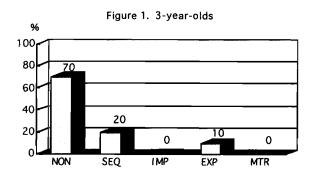
3. ANALYSIS: DEVELOPMENTAL PROFILES

3.1 The 3-year-olds

Figure 1 shows how well Japanese children and adults explained the component parts as a complex interrelation of two events. It reveals that most of them (80%) did not mention more than one component (NON). A few of them merely listed the contents of the pictures as a static array of objects, as shown in Ex. 1.

Ex. 1   *Korewa hitsuji. Hitsuji no yatsu no shippo.*
"This is a goat. Goat's tail." [J3c-3; 3]

These listings indicate that they did not even perceive the contents of the picture as an event, or that an event could be inferred from the picture. It also suggests that they are not yet capable of perceiving a series of pictures as a narrative.

Figure 1. 3-year-olds

Many of children who mentioned one event component relied mostly on purely static description such as Ex. 2 and Ex. 3.

Ex. 2   *Shika-san ga iru. Tsuno ga aru. Shika-san. Shika-san ni tsukamacchatta.*
"There is a sheep. There are antlers. Deer. (The boy has) got caught on the deer." [J3a-3; 2]

Ex. 3   *Shika-san. [Onii-chan wa?] Notteru.*
"Deer. [How about a boy?] (He is) on the (deer)." [J3b-3; 3]

These static descriptions give evidence that the children at least conceived of the pictures as events, taking a dynamically motivated perspective of what they saw in the pictures. In other words, they have the ability to grasp the most basic element of the narrative. There were more static descriptions for these particular events than for other parts of the story. Even some children telling the overall story as a dynamic event were unable to interrelate these two pictures, suggesting that organizing these scenes as a plot-motivated event entails a complex and difficult task for the children.

Only two of them (20%) made explicit mention of these two events (SEQ). These children treated them as two distinct events which were totally unrelated, and their linguistic device was quite premature, as seen in Ex. 4.

Ex. 4   *Ishi ni nocchatta. Kaeru o mitsuketeru. [Onii-chan doushita?] Tsukamarechatta, shika ni.*
"(The boy) is on the rock. (he) is looking for a frog. [What happened to the boy?] (he is) got caught by a deer." [J3e-3; 8]

One of the children (10%) explicitly mentioned the boy's misperception (EXP). However, the event components were not syntactically packaged in her speech, rather they were just connected in chronological or sequential order. The linguistic device she used was also far from that of the older children who gave explicit expression to all the relevant components of this chain of events, as illustrated in Ex. 5.

Ex. 5   *Ishi ni noborotoshitara, Fukuro ga oikaketekite nani ka.... De shika no tsuno ga nee, ki da to omotte machigaete mocchau. De kaeru doko tte nee kiitemo zenzen henji shinai. Shika ga kubi o dashite bikkurishita. Soide nee ano nee kao to issho ni ippenni zubotto haitta.*
"(The boy) tried to climb on the rock, but an owl chased him and.... And (the boy) mistakenly thought the deer's antlers were branches, and grabbed them. And (he) asked where the frog is, but there is no answer. The deer's head appeared and (he) was surprised. And (he) fell in-between the antlers." [J3i-3; 11]

These findings lead us to the conclusion that narrative-discourse processing skills such as backtracking and reorganization are beyond the discourse ability of the 3-year-old children, since very few of them made explicit mention of the misperception. Similar results are reported by Berman and Slobin (1994) concerning the study of English speaking children and Hebrew speaking children.

3.2 The 4-year-olds

Figure 2 indicates that there were still many children (40%) who only mentioned one event, or none (NON). However, the number of children who explicitly referred to both of the two events (SEQ) increased in proportion (40%). The children who did so, connected them mostly in chronological sequence.

Figure 2. 4-year-olds

One child (10%) implied that the event occurred because of the boy's misperception (IMP). She mentioned the deer-carrying event regarding it as an unexpected, accidental happening for the boy, as illustrated in Ex. 6.

Ex. 6   *Ken-chan wa iwa ni gyuutto osuketeta monde, ki ka to omotte. Sokoni nobotte ooi to yaru to nee, shika ga hyokkori kao o dashita. Inu wa iwa no naka o nozoitetara ashi ga mieta. Ken-chan wa shika no tsuno ni hikkakacchatta.*
"Ken-chan (the boy) pushed (the antlers), thinking they were branches. (He) climbed and called, then the deer's head appeared. The dog is looking behind the rock, and his legs were visible. Ken-chan got caught in the antlers of a deer." [J4d-4; 6]

There was one child who made explicit mention of the boy's misperception (EXP), as shown in Ex. 7. But her verbal expression and event organization were far from the level of mature narrative.

Ex. 7   *Shin-chan wa ki da to omotte shika no tsuno ni tsukamarimashita. Ooi to yondemo kimasen. Sono toki desu. Fukuro ga jiito miteimashita. Sousuru to shika wa mo machikirenai mondakara.... machikiremasen. Sono toki desu, shika wa machikirenakute, Shin-chan o machikirenai kara potto kao o dashitara, Shin-chan ga ue ni notteshimaimashita.*
"Shin-chan (the boy) thought it was a tree and held on to the antlers of the deer. (He) called but (the frog) did not come. During that time, an owl was staring (at him). And because deer can't wait, the deer is very impatient. At that time, the deer was impatient and because he couldn't wait for Shin-chan, he raised his head all of a sudden, and Shin-chan got on (the deer's head)." [J4f-4; 7]

Note that this child mentioned the boy's misperception before telling about the deer-carrying event. This pattern is sometimes found in the 4-year-olds texts. Six out of ten provided similar accounts looking at Picture 14, as described in Ex. 8, Ex. 9, and Ex. 10 below.

Ex. 8   *Shika no tsu no ga haetekite dareka yonderu.*
"The antlers of a deer rise up and (the boy is) calling for somebody." [J4a-4; 0]

Ex. 9   *Sono toki tonakai no saa tsuno ga dete soide inu ga sagashiteru.*
"At that time the antlers of a deer appeared, and the dog is searching". [J4b-4; 0]

Ex. 10   *Ishi ni nobotte shika o yonde, shika no tsuno ga nykinyoki deta.*
"(The boy) climb the rock and call for a deer, and the antlers of a deer quickly appeared." [J4c-4; 4]

Mature or proficient narrators, however, rarely expressed the boy's misperception this way. They rather waited until they were talking about the deer-carrying event to mention that "What looks like a branch is not really a branch". The kind of expression seen in examples 7 through 9 is considered to be a trace of some backtracking, but it is not evaluated as successful backtracking, since it does not imply the boy's misperception. The 3-year-old's account reproduced in Ex. 5 in 3.1) describes the early stage of backtracking more clearly. In sum, the 4-year-olds show the ability to explain what is depicted in the picture as an event. They mention each event mainly in chronological order. An early symptom of backtracking process is found their texts, suggesting the emergence of this ability.

3.3 The 5-year-olds

The majority of the 5-year-olds (60%) made reference to the two events (SEQ), as shown in Figure 3. Most of the children who did so connected event components in chronological sequence. But the way they made the connections differs from the way the younger children did, in that they frequently made use of some conjunctive expressions, as seen in Ex. 11.

Ex. 11   *Iwa no teppen made nobottemimashita. Suruto sokode motto yondemimashita ga imasendeshita. Suruto shika ga imashita. Sorede Ken-chan o nosetekuremashita. Sorede inu wa iwa no tokoro o mimashita.*

"(The boy) tried climbing on top of the rock. And then he tried calling more but (the frog) was not there. And then there was a deer. And (the deer) carried Ken-chan (the boy). And the dog looked behind the rock." [J5f-5; 3]
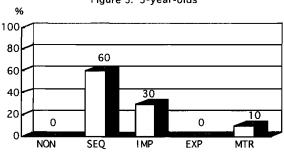
Figure 3. 5-year-olds

In their narrations, thirty percent of the 5-year-olds implied that the boy had made a mistake (IMP). Those children mainly treated the deer-carrying event as an unexpected, accidental occurrence. The 5-year-olds' accounts included more expression for manner, such as ikinari (suddenly), than the 4-year-olds' did, as shown in Ex. 12.

Ex. 12   *De nee Kaeru-san ga iru ka nobottemite nee, de nee Kaeru-san yondeite nee Wan-chan wa nee sagashiteita. De nee ano nee ikinari nee Shika-san ga detekite hikkakacchatta.*

"And (the boy) climbed to see if the frog was there. And (he) is calling for a frog and the doggy was looking for it. And suddenly the deer appeared and got entangled." [J5i-5; 9]

There is one (10%) child who explicitly mentioned the boy's misperception (EXP). In his text, the misperception was clearly stated three times, as in Ex. 13.

Ex. 13   *Ishi ni shika no tsuno ga aru kedo, Shin-chan wa ki da to omoimashita. Soshite fukuroo wa tsuitekite soshite mo ii to omotte soide itteshimaimashita. Soide shika no tsuno o gutto mochima-shita. Soushitara shika ga detekimashita. Soshitara tsuno wa ki jyanakute shika da to wakarima-shita.*

"There are a deer's antlers behind the rock, but Shin-chan (a boy) thought they were a tree. And the owl followed (him), but he had enough (of chasing) and so went away. And (the boy) grabbed the deer antlers tightly. And then the deer came out. And (the boy) realized that it was

a deer, not a tree." [J5c-5; 1]

Even if this child explicitly mentioned the boy's misperception, the way he organized the series of event components is much different from what we find in mature adult narration. This child disclosed the fact that "what looks like a branch is not really a branch" ahead of mentioning the deer-carrying event. This statement is clearly different from the 4-year-olds' accounts in that it shows the boy's misperception. In this sense, this child was successful in backtracking.

In terms of event organization, however, few adults disclosed the boy's misperception beforehand, probably because the adults tried to make the deer-carrying event more dramatic. The picture is also drawn in such a way that it is supposed to be a surprise, which the adults would understand and the children might not. So the mature narrative preserves elements inferred from the way the picture was drawn—i. e., apparently it was drawn first without showing the deer standing behind the rock, though the artist could have drawn the picture from the side, showing both the boy and the deer on opposite sides of the rock. The boy looks surprised, too. So the adults preserve that aspect of the picture, while the children overlook it. In contrast, this child's texts was very redundant, referring to the misperception twice before the boy himself realized his mistake ("Shin-chan wa ki da to omoimashita", "shika no tsu no o gutto mochimashita"). It makes the story much less dramatic, evidence that he did backtrack the story, but the ability to reorganize it in the narrative flow was not fully developed yet.

The analysis indicates that most of the 5-year-old children had developed the backtracking ability. However, they were not always successful at reorganizing events. Since mature rendering for these scenes requires both backtracking and reorganization competence, we can assume they were in the intermediate or transitional stage of development.
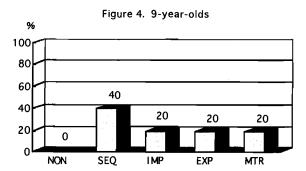
3.4 The 9-year-olds

The majority of the 9-year-olds (60% all together) related these two events either explicitly (EXP & MTR) or implicitly (IMP), as shown in Figure 4. This higher percentage indicates that the ability to backtrack and reorganize events is more developed at this age. Their accounts for the deer-carrying event were much more simplified but also more refined than the preschoolers' (the 4- and 5-year-olds'), as Ex. 14.

Ex. 14   *Soshite Tom-kun wa ki no eda ni noshikakate Kaeru-kun to yobimashita. Jack wa taisei o hikukushinagara nagameteimashita. Suruto eda da to omotta ki ga shika datta nodesu.*
"And Tom held on to the tree's branches and called for (his) frog. Bending down very low, Jack (the dog) was looking (at the boy) And then what (the boy) had thought was a tree turned out to be a deer." [J9h-9; 8]

They also differ from the preschoolers in that they make explicit mention of the unexpectedness, or of the boy's surprise at, the deer-carrying event, implying the misperception more strongly, as in Ex. 15.

Ex. 15   *Soshite iwa no ue ni nobotte Pyonta o yondemiru to, nanika ki no youna mono ga arimashita. Suruto ikinari kubi ga detekite Junta-kun wa odorokimashita. Suruto shita ni shika ga ita no desu.*
"And climbing on top of the rock, (the boy) called for Pyonta (a frog), and found something like a tree. And then suddenly a head came up and Junta-kun (a boy) was surprised. And then underneath there was a deer." [J9g-9; 8]

Figure 4. 9-year-olds

The simplification of utterances found in the 9-year-olds' narratives suggests that their narrative discourse competence has increased. The children only included the components required to keep track of the storyline, leaving unrelated components out. Their narratives, thus, are often stereotypical. In contrast, the younger children's texts often included many utterances which were not directly related to the story line, resulting in wordy, lengthy, or redundant accounts. This wordiness is attributed to the picture-description strategy they rely on. With the development of narrative discourse competence, older children try to refine their narration. In the process of refining, they select event components necessary to organize a well-formed narrative.

Inaba (1999) investigates the development of narrative discourse competence for constructing thematic coherence on the macro-level of plot organization (referred to as "global structure"), making use of the same data base as this study. It reveals that 60% of the 9-year-olds are able to construct the overall plot line of this story. Further analysis of the data reveals that three out of six of the children who expressed the boy's misperception also succeeded in constructing the global structure of this story. These findings, taken with those of this study, suggest that the development of backtracking and reorganization ability in narrative is interrelated with the ability to construct global structure.

3.5 The 11-year-olds

All the 11-year-olds mentioned the boy's misperception either explicitly (MTR) or implicitly (IMP), suggesting that they were able to backtrack and reorganize events in the narrative discourse. Figure 5 indicates that 60% of the 11-year-olds expressed the boy's misperception by casting the deer-carrying event as an accidental one (IMP), as Ex. 16.
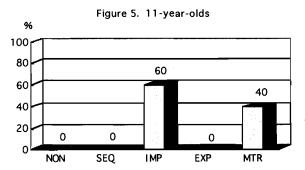
Ex. 16   *Shin-kun ga ookina iwa no ue ni nobotte sagashiteimasu. Pero wa shita no hoo kara inaika to sagashite imasu. Nan to soko ni ookina ojika ga imashita. Shin-kun wa shika ni noseraretamama. Pero wa ishi no shita o sagashite imasu.*

"Shin-kun (a boy) is looking (for a frog) on top of the big rock. Pero (a dog) is looking around the bottom to find (a frog). Surprisingly there was a male deer there. Shin-kun (the boy) got caught by a deer. Pero is looking behind the rock." [J11b-11; 1]

The rest of the children (40%) explicitly mentioned the boy's misperception (MRT), successfully reorganizing the two events, as Ex. 17.

Ex. 17   *Yooyaku yurushitemoreeta Jun-kun, iwa no ue ni nobotte ki no eda o tsukami Kaeru-kun o sagashiteimasu. "Kaeru-kuun," John wa korigori shiteimasu. Shikashi Jun-kun no tsukandeita eda wa shika no tsuno deshita.*

"Finally being excused (by an owl), Junta-kun (a boy) climbs on the lock and hold the branches of a tree and is looking for a frog. "Frog!" John (a dog) was fed up. But the branches that Jun-kun grabbed were the antlers of a deer." [J11d-11; 4]

Figure 5. 11-year-olds

Since both of these ways of expressing the boy's misperception are natural and common in Japanese, the narrator's preference for rhetorical style determines which way to tell the story. The most conspicuous feature found among the 11-year-old was that they told a story that went beyond a direct description of a picture or mentioning an inference from a picture. They often included some additional statement about the protagonist's internal state, emotion, utterance, manner, or background information and so on, as illustrated in Ex. 18 and Ex. 19.

Ex. 18   *Soshite Rock-kun wa iwa e nobotte ki no eda o motte 'Kaeru-kun doko ni iru no' to iimashita.*
           Inu-kun wa aaa tukaretta te iu kibun de yukkuri aruiteimashita. Sonotoki Rock-kun ga motteita
           ki no eda wa nanto shika-san no tsuno datta no desu. Shika-san wa okoridashimashita. Rock-kun
           wa shika no atama ni nokkateshimaimashita.
           "And Rock (a boy) climbed on to the rock and grabbing the branches of a tree, called, "Frog,
           where are you?" The doggy, feeling very tired, walked slowly. Then the branches of the tree that
           Rock was holding onto were, to his surprise, a deer's antlers. The deer began to get mad. Rock
           got caught on the deer's head." [J11g-11; 5]

Ex. 19   *Michiru-kun wa iwa no ue kara Kaeru-kuno yobimashita. 'Ooi, Kaeru-kun, iikagen ni detekite yo'*
           to Michiru-kun wa itta. Suruto sono koe de neteita Shika-san ga okiteshimaimashita. Saa taihen,
           Michiru-kun wa shika no ue ni nottamama.
           "Michiru-kun (a boy) is calling for a frog from the top of the rock. "Hey, frog. Won't you come
           out now?", Michiru-kun said. And then Michiru-kun got caught on the deer." [J11h-11; 6]
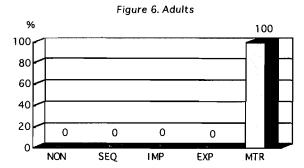
In the study of the development of global plot structure, Inaba (1999) shows that 90% of the same 11-year-old group children were able to construct the overall plot line of this story. Another related study by Inaba (in preparation) shows that they also have the competence to construct linguistic cohesion on the micro-level of individual clauses and adjacent clauses (referred to as "local structure"). These studies indicate that 11-year-olds do have structural knowledge for well-formed narratives at both the global and local levels. The analysis of this section reveals that these children also demonstrate narrative discourse competence, such as backtracking and reorganization. This result confirms the claim (mentioned in 3.4) that different levels of narrative discourse ability interact in the development of a child's linguistic skills.

3.6 The Adults

All the adults (see Figure 6) in this study made a clear connection between the branches the boy was holding onto and the antlers he got entangled in (MTR), as shown in Ex. 20. Their narrations were thematically well-organized, elaborate in discourse structure, and sophisticated, with linguistically richer expressive devices.

Ex. 20   *Fukuro ni oikakerareta Kazuto-kun wa sugu soba ni atta okina ishi ni yojinoborimashita. Soshite,*
           ishi no ue no ki no eda ni tsukamatte "gaako gaako" to yondeimasu. Tokoro ga ki no eda da to
           omotta no wa ooki na shika no tsuno deshita. Kazuto-kun wa atama no ue ni notteshimaimashita.
           "Kazuto-kun (a boy), who was chased by an owl, climbed on a rock that was right next to him.

And (he) held on to the branches of a tree behind the rock, calling, "gaako(frog), gaako". However, what the boy had thought to be branches of a tree turned out to be antlers of a deer. Kazuto-kun got caught on its head." [J20c]

Figure 6. Adults

Their narratives were also quite diverse in rhetorical styles, choice of perspectives, selecting stance, narrative mode and so on. This is evidence that adults have available to them more options in several respects than children do. Although their narratives were apparently diverse, they included the boy's misperception in this particular local level of the event organization.

These results from Japanese children and adults support the argument by Berman and Slobin (1994) that, once embarked on the narrative, adults feel free to recruit their own individual stylistic and rhetorical devices suited to the stance they have selected. As a result, in contrast to the narratives of 9- and 5-year-old children across several languages (English, German, Spanish, Hebrew and Turkish), the adult narratives manifested considerable individual variation. Since this study focuses on the development of children's backtracking and reorganization ability, further discussion of rhetorical styles and individual variation will be left to other related research.

4. FINDINGS

The results of the present study reveal that the ability to perform backtracking and reorganization in narrative discourse processing by children emerges and develops along the following developmental path. Initially, younger children, around the age of 3, tend to treat each scene as an isolated event. Narrative organization is restricted to the most local level of the contents of individual pictures. It hardly needs to be said that in this phase, backtracking and reorganization is far beyond their ability.

In the second phase, children connect (chain) events sequentially. When they are able to narrate the story in chronological sequence, which is one of the most basic but boring patterns, children then, try to build their narrative more cohesively and coherently. In the process of sequencing events chronologically, children begin to conceive the unexpected consequence of the boy's action, and begin to infer why it happened. Then they retrace the previous scene, and re-identify the branches as antlers (but they are not yet aware of the boy's misperception). This is considered to be the emergence or early stage of backtracking ability, which happens around age 4.

With the development of backtracking ability, children are able to make the further inference that "the boy misperceived the antlers as branches" (at mainly 5 years of age or later). In combination with backtracking, children try to figure out the causal relationship between these two events (rock-climbing/branch-holding and deer-carrying events) and re-evaluate the connection between the two. This mental process of re-evaluation is considered to be a conceptual aspect of reorganization. This ability emerges around age 5, with the development of causally-structured narrative.

This reorganization requires a high level of linguistic competence as well as conceptual ability. The fact that many children in the sample of this study showed great disfluency in recounting these scenes suggests that they are burdened by a much more complex and difficult task at the level of verbal output, as well as conceptually. In order to represent this event fully, a narrator has to include at least three elements: a) the branches are in fact antlers, b) the boy mistakenly held on to the branches (antlers), and c) the entangling is an unintended consequence of the boy's act, an accident. The ability to package these elements into a single

event and narrate it using suitable linguistic forms emerges rather later, from around age 9. However, children still have a long way to go in the development of mature rendering.

The abilities of backtracking and reorganization become manifest beginning at a late preschool age, and continue to evolve until the child is around 11. Most of the 11-year-olds provide both a conceptually and a linguistically appropriate representation of the events. Their narrative structures are thematically-motivated and goal-oriented as well as linguistically cohesive.

The mature rendering of this event (by adults) display diverse rhetoric and linguistic devices. This diversity probably occurs because their mature abilities in narrative discourse competence, including backtracking and reorganization, allow them to recruit more options.

5. CONCLUSION

The results of this study lead to the hypothesis that different levels of narrative discourse ability, as well as the ability to access various linguistic forms and narrative discourse functions, all interact as children learn the skills of backtracking and reorganization, and no doubt in other advanced linguistic development as well. In the development of backtracking and reorganization in narrative discourse processing, the ability to use sequential chaining helps the backtracking ability to emerge. Backtracking ability recruits (demands) reorganization ability. The skill of reorganization evolves with the development of causally motivated narrative structure. There is also an age-related increase in the ability to use macro-level plot organization as a background to these developments. Since this study is limited to story narratives based only on the frog story task, further study drawing on other genre narratives is called for.

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