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STRUCTURAL AND FUNCTIONAL ANALYSES OF CHILDREN'S NARRATIVE TEXTS

Sixty children aged 6, 7 and 8 took part in the investigation. One hundred and eighty narrative texts were obtained (3 stories from each child). The analyses presented here concern exclusively the research situation of telling one's own story. The paper presents quantitative data dealing with the formal indicators of story-telling and developmental changes in narrative episode linkage (including the role of connectives), story composition, semantic and deictic functions of pronouns, level of text creativity and expressiveness. The study shows the growing complexity of text structure with narrator's age and confirms the role of gender in differentiating narrative competence.

Introduction

Narration understood as talking about a series of events that have actually taken place or concern fictitious reality constitutes one of the early forms of creative linguistic activity performed by children (Labov, 1972; Kuczaj, 1984; Halliday, 1979; Kemper, 1984). The source of this creativity is to be sought in the relation between language and knowledge about the world (Kurcz, 1986).

Skill in telling stories is acquired between the ages of 2 and 7. As children discover and learn the elements of how to tell a story, their stories become richer, clearer and more transparent. As with action, narration, too, has its structure. All phases of narration (exposition, complication, extension, which together make up its macrostructure) have their counterparts in utterances and the relations between them (Szuman & Dzierżanka, 1957; Bruner, 1980; van Dijk, 1985).

Contemporary research in developmental psycholinguistics covers both the structural and functional aspects of narration analysis. The text of a story is examined with regard both to its structure and the participation of the discourse partner. A partner's verbal and nonverbal behavior modifies the creative narration of children (Bokus, 1991).

The structural analysis of stories reveals the developmental changes in the plot organisation which are interpreted in terms of the child's cognitive and linguistic developmental abilities. Narration research has shown that 4- to 6-year-old children produce simple

narrative texts with a descriptive sequence of actions. These texts present the chronology of events (temporal or cause-effect relations). Older children, aged 7 to 9, order events as episodes with respect to motives, reasons or manner of performing an action till a result is obtained (Applebee, 1978; Sutton-Smith, 1975; Stein and Glenn, 1979).

The present work is part of an interactional research project on children's narration. We assume that the text of a child's story, which is the outcome of creative activity, is dependent on the situational context and takes shape in the course of interaction between child and adult. Research situations have differed in the amount of freedom the child is accorded in telling a story. The most open situation is one where the child is free to think up his or her own story. By providing a topic for the story, we partially limit the child's freedom in the construction of narration. The task of inventing an ending to a story that has previously been read is the most restricted situation.

The Research

Research procedure

Only those children who wanted to "play and think up stories" participated in this research. Their speech was recorded on tape, then transcribed and segmented. The procedure was as follows:

- after a short conversation about books and films the researcher asked the child to tell his or her own story and then to make a drawing of it;
- a week later, the child was asked to think up a story about a little animal;
- after another week, the adult told a story which she interrupted at the crucial moment and asked the child to finish it (see Appendix).

Sixty children aged 6, 7 and 8 (10 girls and 10 boys in each age group) were examined. The investigation was conducted in Kindergarten number 29 and Primary school number 58 in Cracow in April and May 1993.

Characterization of subjects

All the children came from complete families. The education of their parents is presented in the Appendix (see Table I). The lowest educational level is represented by parents of the seven-year-olds; over half had vocational education. The best educated parents were those of the eight-year-olds. One fourth had graduated from university and nearly half had secondary education.

Research aims and hypothesis

Our aim was to determine the structure and function of children's narrative texts depending on type of research situation, child age and gender. Drawings were treated as supplementary material for the analysis of verbal behavior. The following hypotheses were formulated:

1. Story structure becomes more complicated with age but also depends on the story-telling situation. The more open the situation, the longer the utterances and the less cohesive the text.
2. Gender differentiates the structure and originality of stories. Girls are expected to be superior to boys in ability to invent stories.
3. The older the child the better the expressiveness of the narrative text, indicating growing narrative competence.

Results

One hundred and eighty narrative texts were obtained (3 stories from each child). The analyses presented here concern exclusively the kindergarten children and only one research situation, the most typical for narration, that of telling one's own story.

Story length

Texts were measured with regard to story length (number of words, utterances, phrases and episodes). Each of these formal indicators was interpreted according to characteristics of the cognitive and linguistic competence of a given child. The number of words served to evaluate the child's ability to verbalize thoughts and expand the narrative text as regards amount of words and concepts known to the child and readiness to use them. The number of phrases and utterances reflects the ease with which the child tells what he or she intends to recount. The proportion between the number of utterances and the number of phrases determines verbal fluency. The number of episodes and the way they are linked together reflects the child's ability to verbalize larger mental entities logically interconnected.

Tables 1a, 1b, 1c give the quantitative data concerning the formal indicators. The older the child the greater the number of words, phrases and utterances used. The indicator of utterance fluency is also higher (see Table II in the Appendix).

Table 1a. Story length (age 6 years)

Age and gender	Type of narration	Mean values of:			
		words	phrases	utterances	episodes
6 YEARS					
Girl	spontaneous	146.5	12.0	9.0	12.6
Boy		110.7	7.0	8.7	10.0
Child mean		128.6	9.4	8.7	11.3
Girl	topic given	170.5	12.2	10.0	13.8
Boy		110.0	8.0	7.0	9.0
Child mean		110.4	10.1	8.4	11.5
Girl	ending the story	65.7	6.7	5.0	7.0
Boy		91.0	7.6	5.6	9.8
Child mean		78.4	7.1	5.3	8.4
Overall child means		115.8	8.9	7.5	10.4

Table 1b. Story length (age 7 years)

Age and gender	Type of narration	Mean values of:			
		words	phrases	utterances	episodes
7 YEARS					
Girl	spontaneous	110.5	17.5	10.5	12.0
Boy		146.3	15.5	15.1	8.2
Child mean		128.5	16.5	13.8	10.1
Girl	topic given	242.0	18.5	10.5	10.0
Boy		101.9	13.6	12.0	6.6
Child mean		170.4	16.5	11.2	8.3
Girl	ending the story	98.0	8.5	8.5	5.0
Boy		91.5	9.4	11.1	5.2
Child mean		94.7	8.9	9.8	5.1
Overall child means		131.7	13.8	11.2	7.8

Table 1c. Story length (age 8 years)

Age and gender	Type of narration	Mean values of:			
		words	phrases	utterances	episodes
8 YEARS					
Girl	spontaneous	394.6	33.8	41.0	14.9
Boy		372.2	21.4	17.9	12.9
Child mean		383.4	27.6	23.8	13.9
Girl	topic given	252.9	20.6	26.6	11.1
Boy		331.2	27.1	21.3	12.8
Child mean		292.0	23.8	13.3	11.9
Girl	ending the story	194.0	13.9	16.2	7.7
Boy		161.3	11.6	8.0	7.7
Child mean		175.8	12.7	13.1	7.7
Overall child means		283.7	21.4	21.8	11.1

Episode linkage (the role of connectives)

Developmental changes in episodes are not measured as to number but as to the way they are linked. This constitutes the indicator of text cohesion at the macrostructural level.

Three ways of linking episodes were specified:

- isolated episodes: no linguistic form used for linking events, no logical relation of cause and effect,

- partially linked episodes: no linguistically explicit logical relation between events but implicitly given in the story content,

- causally linked episodes: a linguistically expressed cause and effect relation between events.

Table 2. Types of episode linkage (in percents)

Age and gender	Type of episode		
	isolated	partially linked	causally linked
6 YEARS			
Girl	40.0	30.0	30.0
Boy	20.0	26.6	53.4
Child mean	30.0	28.3	41.7
7 YEARS			
Girl	6.6	36.6	56.8
Boy	33.4	26.6	40.0
Child mean	20.0	31.6	48.4
8 YEARS			
Girl	6.6	30.0	63.4
Boy	3.3	20.0	76.7
Child mean	5.0	25.0	70.0

Table 2 gives the results obtained. The direction of developmental change is clearly shown: the number of isolated episodes diminishes (from 30% in six-year-olds to 5% in eight-year-olds) and the number of causally linked events mounts (41% in six-year-olds to 70% in eight-year-olds).

Episode linkage at the linguistic level has so far been analyzed only on the six-year-old children's stories. Some 76% of episodes are linked by a conjunction. Table 3 shows the types of conjunctive connections for the given types of episode.

Table 3. Types of conjunctive linking

Type of episode	Conjunctive	Number	Function
isolated	"no" "i"	19	linking of events in chains
	"i"	20	loose linking of content elements
	"a"	3	enumeration
partially linked	"i"	15	temporal and spatial sequence of actions
	"a"	5	temporal supplementation
	"ale"	7	limitation and reservation
causally linked	"i"	12	sequence of actions "i wtedy" (and then), "w końcu" (in the end), "potem" (then), "później" (later)
	"a"	6	temporal/logical supplementation
	"ale"	3	reservations
	"jak...to"	7	conditional temporal relations
	"no...to"	7	conditional temporal relations
	"to znaczy"	8	causal linking of events
	"bo"	4	causal linking of events

Glossary:	"no"	is roughly equivalent to	<i>so</i>
	"i"	" "	" <i>and</i>
	"a"	" "	" <i>and</i>
	"alc"	" "	" <i>but</i>
	"jak...to"	" "	" <i>if...then</i>
	"to znaczy"	" "	" <i>I mean, that mean</i>
	"bo"	" "	" <i>because</i>

The conjunction "i" (*and*) appears in every type of episode but its function each time is different: from enumerating to reflecting logical consequences. The conjunction "i", however, does not stress the causal relation of events as clearly as do the conjunctions "dlatego", "bo", "ponieważ" (*because*). Logical relations are expressed unambiguously and precisely from the linguistic point of view by such conjunctions as: "jak... to", "więc to, wtedy", "to znaczy" (*that means..., if...then*).

Story composition

The structure of narration is reflected in its composition. Before starting a story, children often spontaneously gave it a title. Table 4 shows the number of story titles for all age groups. Children aged 6, boys in particular, provide titles for their stories, while older children start the narration immediately.

Table 4. Titles given to stories

Gender	Age	Type of title			
		General	Detailed	Concrete	No title
	6 YEARS				
Girl		-	3	2	5
Boy		2	6	2	-
	7 YEARS				
Girl		1	3	1	6
Boy		3	2	1	4
	8 YEARS				
Girl		-	-	-	10
Boy		-	-	-	10

Examples:

General: "about vegetables", "about birds"

Detailed: "about a little dog", "about a red rose"

Concrete: "about Dery and Ketniba", "about a girl called Hopsa-sa"

All types of stories told by the seven- and eight- year-olds, were characterised by a complete structure, while in the stories of six-year-olds exposition and extension always appeared. In expositions, the hero of the story and place of the action are present and sometimes even temporal expressions and characteristics of the hero. Older children, in introducing a new character, accompanies this by his or her description. An extension, apart from the event sequence, contains a description of the hero's adventures and thoughts.

Pronoun functions

The function of pronouns in certain parts of narrative composition was also investigated. A quantitative analysis of the spontaneous narration of the six-year-olds is presented here. Table 5 shows the quantitative distribution of pronouns. They are most prevalent in the extension of children's stories. Girls use twice as many pronouns as boys in other parts of their stories. Functions served by pronouns in the telling of stories were analyzed after Miodunka (1974). Table 6 indicates that half the pronouns used by boys had a semantic function and over half used by girls a deictic function. Pronouns serving both these functions prevail in the data gathered so far. The most common were personal, possessive and deictic pronouns such as "ten" (*this*), "taki", "jakiš" and others semanti-

Table 5. Distribution of pronouns in stories told by children at the age of 6 (in percents)

Composition	Gender	
	Girl	Boy
Exposition	15.0	7.0
Extension	73.8	85.3
Ending	11.2	7.7

cally similar to them. Polish has no articles but pronouns serve to individualize the designates. For instance, the pronoun “ten” is used in stories to make the object we are talking about more concrete. It has either a deictic or semantic function, or both. The pronoun “taki” serves to mark the description of characters appearing in the story, and has similar functions. The pronoun “jakiś”, on the other hand, does not express any individual characteristics of the object but serves to tell it apart from a group of similar objects (similar pronouns are: “któryś, niektórzy, pewien, wszyscy, każdy, żaden”).

Table 6. Functions of pronouns in stories told by children at the age of 6 (in percents)

Composition	Gender	
	Girl	Boy
Deictic	51.9	45.4
Semantic	43.8	50.3
Syntactic	4.3	4.3

The analyzed data show the abuse of personal pronouns by children, which decreases the communicability of the text (see examples in Appendix).

Text creativity

Text creativity was also analyzed. Following Przetacznik-Gierowska and Kielar-Turska (1992), I divide stories into:

- creative: new and original ideas,
- productive: linked with familiar stories transformed creatively,
- reproductive: a more or less accurate reproduction of a familiar story or real event.

Table 7 classifies the entire data according to degree of text creativity. Story topic and form, more or less original from the linguistic and semantic point of view, were taken into account in the evaluation.

Table 7. Creativity of children's stories (in percents)

Level of creativity	Age and gender					
	6 years		7 years		8 years	
	Girl	Boy	Girl	Boy	Girl	Boy
Creative	10.0	30.0	36.7	20.0	26.6	6.7
Productive	60.0	63.3	33.3	43.3	66.7	66.6
Reproductive	30.0	6.7	30.0	36.7	6.7	26.7

In comparing stories on the above criteria, no developmental changes in the number of stories considered as creative were found. There are, however, clear qualitative differences. The creativity of six-year-old children consists in inventing stories and experimenting with the verbal material. Older children create reflective stories transforming their knowledge about the world. Examples of creative stories are to be found in the Appendix.

Expressiveness

The last aspect of the narrative text analysis was expressiveness presented on the following levels:

- phonetic: clarity of speech, voice modulation,
- semantic: emphatic pronouns, epithets, proper names,
- syntactic: dialogue, reported speech, intentional repetition.

Table 8 illustrates the expressiveness of the texts. The stories told by eight-year-old girls turned out to be the most expressive and the stories of six-year-old girls the least. The expressiveness of boys' stories did not change with age.

Table 8. Forms of expressiveness in stories (spontaneous)

Level of story	Age and gender					
	6 years		7 years		8 years	
	Girl	Boy	Girl	Boy	Girl	Boy
Phonetic	-	-	-	-	5	3
Semantic	4	4	7	7	10	7
Syntactic	2	3	3	2	7	3

Table 9 shows the expressive forms at the semantic and syntactic levels. All forms of expressiveness were present in the speech of eight-year-old girls and six-year-old boys. The forms most often used were epithets and proper names.

Table 9. Forms of expressiveness in children's stories

Forms of expressiveness	Age and gender					
	6 years		7 years		8 years	
	Girl	Boy	Girl	Boy	Girl	Boy
Dialogues	-	3	2	2	7	1
Reported speech	4	2	2	1	7	2
Repetitions	3	3	-	-	3	1
Epithets	4	3	7	7	7	4
Proper names	4	2	5	4	6	4
Emphatic pronouns	2	3	4	3	10	4

Research participation

The participation of the researcher was limited to giving instructions but in the course of narration a specific interactive situation was established. Its diversity is to be noted. Six-year-old children rarely started a conversation spontaneously or expected non-verbal reinforcement. On the other hand, most of the seven-year-olds wanted to know whether their story was correct and sought nonverbal contact while telling the story. Eight-year-old children initiated the conversations, talked a lot and willingly even when the experiment was over.

Summary and conclusions

Summing up, the data consisting of stories told by children aged 6 to 8 supported the first and third hypotheses formulated at the beginning of this study. The structure of stories becomes more complex with age. They become longer, richer in vocabulary and their logical cohesion is better. The type of task situation exercises an influence on the structure of stories. The open situation is too difficult for six-year-olds. On the other hand, it helped the eight-year-olds to produce the longest and most original, although logically less cohesive, stories.

The results shown above confirmed the hypothesis that gender differentiates narrative competence. This factor affects the length of stories and their expressiveness. But the second hypothesis that girls tell more original and creative stories than boys was not supported. It should be borne in mind that most of the analyses at the macrostructural level dealt with stories invented by children. It may be that the task situation will prove to be the decisive factor in text creation.

Comment

Children's own stories had a specific mood. Almost all the stories came to a happy end (only 8 of the 180 stories did not have a happy end). The positive mood prevailed (50,4%), only 10,3% were sad, and in other stories happy and sad events were intermingled, but in a cheerful mood. The emotions expressed in drawings corresponded to both story content and mood. Cheerful stories were illustrated with bright colors (red, green and orange), sad ones with "cold" colors (blue, grey and black).

Drawings, as a graphic language, would require a separate and detailed analysis. In this research their function was only to supplement the material. Some indicators of the structural and functional analysis of stories could be found in the children's drawings. These indicators were: content elements, composition of drawings, and expressiveness illustrated mainly by colors. Drawings, similarly to verbal texts, became better and richer with age in terms of content. Expressiveness, on the other hand, was not age-dependent. In this material, drawings by six- and eight-year-old boys were not very expressive.

All children's drawings exemplified their stories and apparently their graphic and esthetic level reflected individual differences between children.

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Appendix

Three-part procedure

1. "And now we are going to invent stories. Tell me your own story, one that nobody knows" (after telling the story the child was asked to draw it)

2. "Today we are going to think up stories, too, but this time it will be a little different. I want you to think up a story about a little animal".

3. "And today we are going to tell stories together. I will start telling a story and when I stop you will finish it the way you want it to end. The story is about a shark. Do you know anything about sharks? (if necessary say that sharks are predatory). The text of the story: One day two boys set off on a sea voyage round the world. They sailed far away from home till they reached a desert island. They were very dirty and tired so they decided to take a swim in the sea. They took off their clothes and jumped from the deck into the water. They swam round the ship but they soon got bored and decided to go further into the open sea. They started to play in the water, race each other and dive. And while they were having fun, a shark came into sight... and what happened next?"

Between each stage of the procedure there was a week's break.

Table I. Parental education (in percents)

Education	Age of children			
	6 years	7 years	8 years	N=120
higher	30.0	15.0	25.0	23.3
secondary	22.5	27.5	47.5	32.5
vocational	42.5	55.0	25.0	40.8
elementary	5.0	2.5	2.5	3.3

Some individual differences in length of children's own stories:

- the shortest, 6 years - 46 words (Boy)
- the longest, 6 years - 364 words (Boy)
- the shortest, 7 years - 39 words (Girl)
- the longest, 7 years - 304 words (Boy)
- the shortest, 8 years - 69 words (Boy)
- the longest, 8 years - 1086 words (Boy)

Table II. Indicator of utterance fluency

Age and gender	Type of narration:		
	spontaneous	topic given	ending the story
6 YEARS			
Girl	0.7	0.8	0.7
Boy	1.24	1.1	0.7
Child mean	0.93	0.83	0.74
7 YEARS			
Girl	0.6	0.5	1.0
Boy	0.90	0.9	1.1
Child mean	0.7	0.7	1.1
8 YEARS			
Girl	1.2	1.3	1.1
Boy	0.8	0.8	0.7
Child mean	1.1	1.2	0.9

Indicator of fluency for all types of stories is:

6 years - 0.84

7 years - 0.81

8 years - 1.0

Examples of stories with excessive use of pronouns:

Girl, 6 years: "...about a teddy bear, where he met a dog who was bored and he wanted to play. And then he was looking for him because he was also bored and they found each other and they played together."

Boy, 6 years: "There were two little mice. One lived in a town and the other in the countryside. And this (mouse) from the town went there and that (mouse) from the countryside invited her there. So then they ate a lot. They enjoyed it so much but this (mouse) from town had to go. And she invited her friend to come to her place. And they went together. And so they arrived. There was a big pantry and a cat. He fell asleep and they ate many different things and they had a good time, they played and the cat was asleep. One (mouse) had to go and he hid himself. Then they were together and lived happily ever after."

Examples of creative stories:

Girl, 8 years, Kasia

"It was raining hard but one raindrop was different, it could never end, it was always there. This raindrop sailed into the flat of a certain girl. It knew that the girl was crying and wanted to help her somehow but it did not how, so it dared ask her:

- Little girl, why are you crying?

The girl answered its question. First she was a little surprised, how is it possible that a raindrop can speak, but she said:

- I am sad because I've lost my little dog. I don't know where he is, he has gone somewhere, I lost him on the train so I don't know what happened to him. The raindrop thought for a while, thought and thought, how to make this girl happy. She thought and tried to conjure her up a little dog:

- Agra Fadabra! Agra Fadabra! Let there be a little dog here! It was such a nice dear little dog, so she made the girl happy. Then she sailed away. She said goodbye to the girl and sailed further on. She was looking for other sad people and children to help them. And she came across a lot of them. She gave skipping-ropes to some girls and a toy car to some boys and others (?) a play ground for many children. But one day it found itself in a house where the girl was not sad and asked her why she was not sad:

- I do not need anything, I have got everything.

The raindrop asked:

- Have you got a bicycle?

- No I haven't, said the girl.

- And would you like a bicycle?

- Yes, I would like it very much!

- So, here you are, take this bicycle.

So the girl had the bicycle. The raindrop kept flying. But, of course, it got smaller and smaller. It had to die one day, after all. And one day the raindrop was not there anymore. There was only something glittering in the grass."

Girl, 7 years, Agatka

"There once was a little flower. It was in a very big field, and it asked its mother since it was autumn and the flowers lost all their petals, and he asked:

- Why do we lose petals, why?

He kept asking everybody. And its parents tried to explain that in winter all petals have to go so that they could grow again. They couldn't if they stayed for winter, they would be covered and swept with snow and they would be broken and couldn't grow again. And as it is they will lose their petals and new ones will grow. But it gave the flower a lot to think about so it went up a mountain, to see a wizard who had an answer to every question. And he asked him the question. And he said that his parents were right but the little flower did not believe him. It travelled around the world and asked everybody: why? But everybody gave it the same answer. And one day he met another flower who had different petals. It was a liar and said it wasn't true. They arrived on the field of this flower and told everybody it was not true and everybody believed them. And they started to stand up against the wizard. And the wizard tried to reconcile them and made a kind of medicine that, when you tell a lie, makes you forget. And he poured the medicine over all the flowers in that field. And all these flowers forgot and lived happily ever after.