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CHILDREN'S STORY COMPREHENSION AND TEACHER'S STORY-TELLING*

Research on text comprehension has for a long time mainly concentrated on comprehension processes of an individual working alone. Only recently, this limitation of the research domain has been eliminated by work such as, for example, reciprocal teaching by Palincsar & Brown (1984). Our studies belong to this novel, open line of research. The focus is on how simple monologue-oriented story-telling differs from dialogue-oriented story-telling wherein the story-teller addresses questions to the listeners and conducts dialogue with them.

The first research (Albanese & Antoniotti, 1992) shows that preschool children with teacher's dialogue-oriented story-telling attain an improved, more comprehensive understanding of the content and produce more elaborated answers to questions than in monologue-oriented story-telling. The advantage of dialogue-oriented story-telling shows in reproduction of information from structure categories which have proved to be difficult in Story Grammar research.

The second study (Albanese & Antoniotti, 1997) analyses the relationships between three components of dialogue style (*number* of questions asked by the teacher, *exclusive* types of questions asked and *variety* of questions) and children's story comprehension in 48 subjects aged 4;4 to 6;2 and 24 teachers, all divided randomly in four groups, three corresponding to the components of dialogue style and a control group (the reading group). The best results were in the variety group, followed by the exclusive types group, the number group, and finally the reading group which obtained the lowest results. The fact that the variety group had the best results suggests that use of all types of questions favoured the best comprehension. The highest percentage of questions asked by the teacher during story-telling in the variety group were verification questions, personal questions, requests for inference and – highest of all – encyclopaedic questions.

Introduction

According to story grammar theory (Stein & Glenn, 1979) we studied the process of story construction and comprehension in preschool-age children considering only the structure of the text (Albanese & Antoniotti, 1988). In these studies we obtained the best performances when we helped the children with a set of *guided recall questions*. We conclu-

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ded that the process of story construction and comprehension cannot depend just on a text structure but also on adult interaction style with the child. In line with these results, our studies belong to a line of research which does not consider comprehension processes in terms of an individual working alone abolishing that limitation of the research domain (see, for example, studies about reciprocal teaching by Palincsar & Brown, 1984; Van Hout-Wolters & Schontz, 1992).

Some studies considered the particular language that teachers use in various institutional contexts (Tizard, Philips & Plewis, 1976; Emiliani & Zani, 1983). Others studied how the teacher's language differs when speaking with one child compared to his/her language while speaking with a group of children (Schaffer & Liddel, 1984), or when speaking to a small group compared to a large group of children (Morra, Pellegrino & Scopesi, 1990).

Barbieri, Devescovi & Bonardi (1987), in their study of teacher/child interaction during the shared reading of a book in a nursery school setting, identified two types of adult interactive style:

- NARRATIVE STYLE (NS), characterized by a sort of monologue in which the teacher doesn't solicit the children's involvement and asks many rhetorical questions;
- DIALOGUE STYLE (DS), which involves the children in a dialogue, using questions that require the children's active participation during the narration of the story events.

Their analysis involved four parameters that characterize teacher/child interaction:

- *story reconstruction*, i.e., the way in which the story was told;
- *cognitive adaptation* to the children, i.e., the presence of explanations;
- *cognitive control on children*, i.e., the presence and types of questions addressed to the children;
- *children's involvement*, i.e., the children's contributions to the interaction (see Table 1).

Table 1.

Interactive style parameters

story reconstruction: evaluation of the way in which the story was told.

- number of responses given to children's questions (NS)
- number of questions addressed to the children (DS)

cognitive adaptation to the children: evaluation of the presence of explanations.

- number of explanations given in response to children's request (NS)
- number of spontaneous explanations given (DS)

cognitive control over children: evaluation of the presence and types of questions addressed to the children.

- number of rhetorical questions (NS)
- no response expected
- used to get children's attention
- total number of all other question types (DS)

Encyclopaedic Questions – often followed by explanations

- used to verify children's knowledge

Personal Questions

- referred to children's personal world
- used to further involve children

Verification Questions

- often followed by clarifications
- used to verify the children's understanding of story events already narrated

Requests for Inference

- used to verify children's ability to infer events from the story, starting from the listing of events already narrated

Requests for Opinion

- used to involve children with personal judgements

children's involvement: evaluation of children's contributions to the interaction.

- number of questions children addressed to the teacher (NS)
- number of children's yes/no responses to teacher's questions (DS)
- number of instances of children's spontaneous speech (NS)
- number of instances of children's speech elicited by teacher (DS)

(NS = Narrative Style; DS = Dialogue Style)

Using these parameters, we developed a definition of the two styles (see Table 2) by identifying specific factors associated with each style expressed as a series of specific factors that could be used to identify a teacher's style as narrative or dialogue (Albanese & Antoniotti, 1992).

Table 2.

Specific factors associated with	
Narrative Style (NS)	Dialogue Style (DS)
<i>Reconstruction of the story</i>	
– N teacher's answers	> / < – N teacher's questions
– time of interaction	< / < – time of interaction 10' / 10'
<i>Cognitive adaptation to the children</i>	
– N explanations on request	> / < – N spontaneous explanations
<i>Cognitive control on the children</i>	
– N rhetorical questions (RQ)	> / < – total N other questions EQ+PQ+VQ+RI+RO
<i>Participation of the children</i>	
– N questions	> / < – N YES – NO answers
– N spontaneous interactions	> / < – N forced interactions

In this paper we present two of our studies concerning this topic.

The first study

The present study was designed to analyze the teacher's different story-telling style characteristics and if and how each style helps children's story comprehension and reconstruction.

Method, subjects, procedure

We studied 12 teachers and 24 children aged 4–5 years in a kindergarten in Milan. We selected the children with a preliminary test to create a homogeneous group in which children with comprehension difficulties were not included. Each teacher told the tale "The wild geese", from Alexander Afanesv's collection of "Old Russian Tales", to two children at a time randomly chosen. Every session was videotaped. The teachers are divided into two groups:

- one characterized by the dialogue style (seven teachers)
- the other characterized by the narrative style (five teachers).

The children were divided into:

- those who had been told the story in the narrative style (ten children);
- those who had heard it in the dialogue style (fourteen children).

The children's story reconstruction and comprehension was evaluated by classifying their answers to the set of questions concerning the story according to Stein & Glenn story grammar categories.

We classified answers according to Levorato (1988):

- YES answers, i.e. correct answers, appropriate to the contents of the story;
- NO answers, i.e. incorrect answers, deviations from the logic of the story, invented responses, omissions.

Results

The children of both groups had a higher percentage of Yes than of NO answers testifying to a good story comprehension and reconstruction, but the percentage of YES answers of the DS group (73.1%) was significantly higher than that of the NS group (59.1%) (see Figure 1). The difference between "yes" and "no" answers in the DS group was statistically significant (ANOVA: $F = 21.52$; $p < .001$), but not in the NS group.

A statistically significant correlation existed between the mean number of teacher's interventions during the story-telling and the percentage of YES answers of the children ($r .709$; $p < .001$) (see Figure 2).

Regarding story grammar categories we had more YES answers in the DS group than in the NS group for each category. There is a significant difference in attempt category, considered very difficult in story grammar paradigm (see Figure 3).

Fig. 1. Children's correct (YES) and incorrect (NO) answers according to teacher's different styles

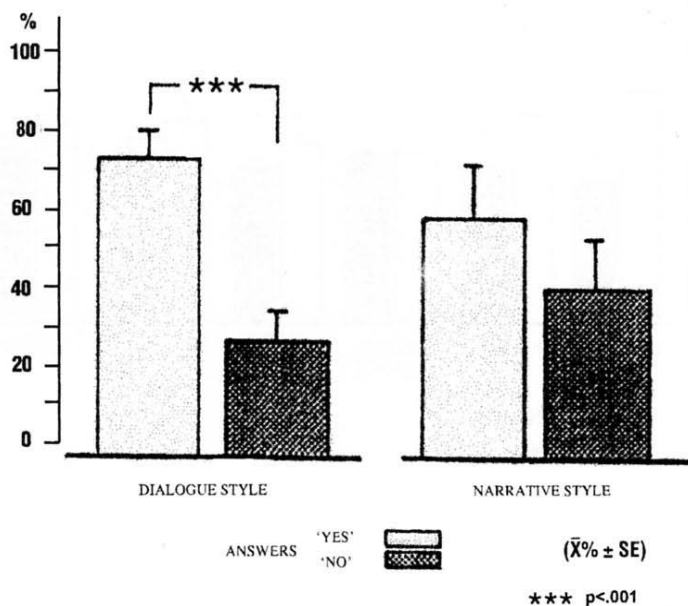


Fig. 2. Correlation between teacher's interventions and children's correct answers

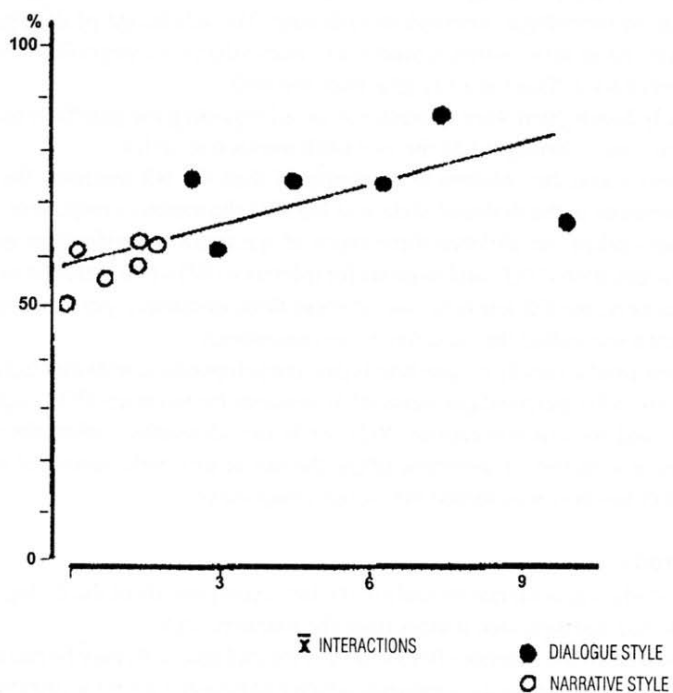
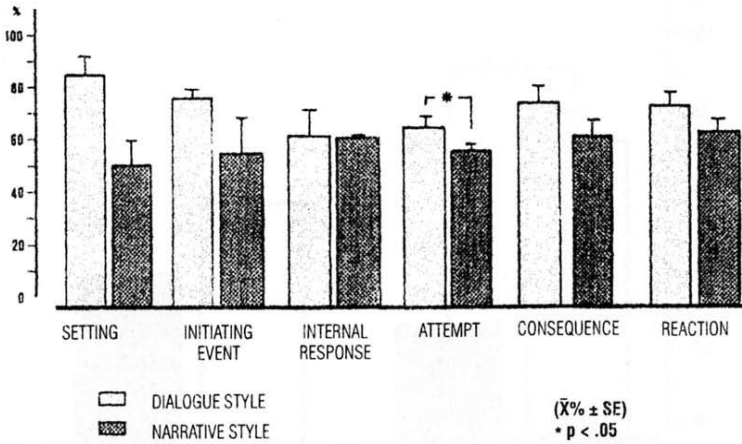


Fig. 3. Children's correct answers distributed according to Stein & Glenn story grammar categories



Discussion

We observe that with dialogue oriented story-telling, the listeners reach an improved, more comprehensive understanding of the contents and produce more elaborated answers to questions than in monologue oriented story-telling. The advantage of dialogue style especially showed up in information reproduction from structure categories which have proved to be especially difficult in story grammar research.

This first study highlighted three characteristics, all regarding the teacher's use of questions, that particularly distinguished the two adult interactive styles:

- the DS teachers asked the children more questions than the NS teachers; the greater number of questions in the dialogue style was labelled the *number component*;
- the DS teachers asked the children three types of questions – verification questions (VQ), personal questions (PQ), and requests for inference (RI) – that were not used at all by the NS teachers; the DS teachers' use of these three question types that the NS teachers neglected was called the *exclusive types component*;
- the DS teachers used a variety of question types: encyclopaedic questions (EQ), verification questions (VQ), personal questions (PQ), requests for inference (RI), requests for opinion (RO), and rhetorical questions (RQ), while the NS teachers asked the children almost exclusively rhetorical questions (RQ); the use of this wide variety of question types by the DS teachers was named the *variety component*.

The second study

The present study was designed to analyze the three components of the dialogue style, which we had found distinguished it most from the narrative style.

We hypothesized that the superior effectiveness of the dialogue style may be due to one or more of the three above-mentioned components which distinguish it from the narrative style.

Method, subjects, procedure

The subjects were 48 nursery school male and female children in Milan, aged 4;4 to 6;2, chosen on the basis of a preliminary comprehension test. They were randomly divided into four groups of 12 children each; 24 teachers were also divided randomly into four groups of 6 teachers each and assigned to the four children's groups. The four groups differed with regard to the assignment given the teachers during the story-telling:

- the teachers in the *number group* were instructed to ask as many questions as possible, without regard to type;
- the teachers in the *exclusive types group* were told to include questions of only three types in their story-telling: VQ (verification questions), PQ (personal questions), and RI (requests for inference);
- the *variety group* teachers were given the task of asking questions of all types as they told the story: VQ, PQ, RI, EQ (encyclopaedic questions), RO (requests for opinion), and RQ (rhetorical questions);
- the teachers of the control group (labelled the *reading group*) were instructed to ask no questions at all, but simply to read the story to the children.

We compared each child's retelling with the story text, (*free retelling*) and we considered each child's responses to a questionnaire (*guided retelling*).

The story chosen was "The Tiger's Whisker", a simple and well-formed story according to Stein & Glenn's story grammar (1979). The story text was divided into eight moments corresponding to the eight events of the story in chronological order.

We calculated:

- the mean percentages of correctly recalled story items;
- the mean percentages of correct responses to the questionnaire for each child within each group.

We used ANOVA for a general comparison between the control group and the other three groups together. In case of significant results, a Post hoc test (Tukey) was carried out between the single groups.

Results

An analysis of the transcripts reveals that the teachers of the different groups carried out their assigned tasks: the *number group* teachers asked the highest number of questions, the *exclusive types-group* teachers asked almost exclusively VQ, PQ, and RI questions, and the *variety group* teachers used a well-balanced blend of all the types of questions.

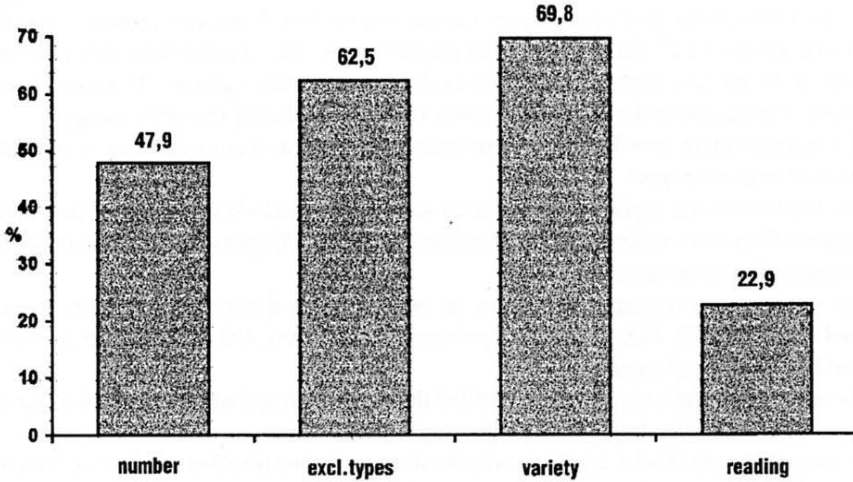
From the *free retelling* data, the mean percentages of correct recalled story items were:

- for the variety group children 69.8% (sd = 19.5);
- for the exclusive types group children 62.5% (sd = 31.9);
- for the number group children 47.9% (sd = 31);
- for the reading group children 22.9% (sd = 23.7). (See Figure 4.).

The highest mean percentage of correct recalled story items was from the variety group.

The difference between the experimental group and reading group was significant using the ANOVA test ($F = 16.23$ $p < 0.001$) with 1 df between groups and 46 df within groups. From the oneway analysis of variance it was found for the four groups $F = 7.06$ with 3 df (between) and 44 df (within), with $p < 0.001$.

Fig. 4. Children's correct retelling items according to teacher's question types (free retelling)



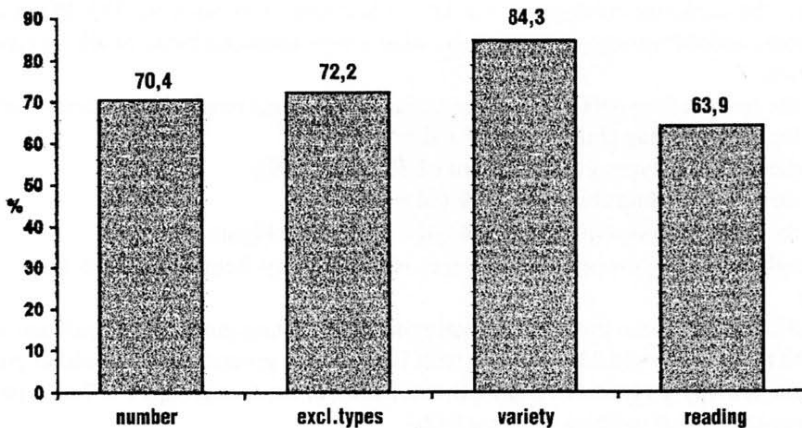
The Tukey test between the single groups showed significant difference between the reading group and the exclusive types group and between the reading group and the variety group ($p < 0.05$).

From the *guided retelling* data, the mean percentages of correct answers were:

- for the number group children 70.4% (sd 26.09);
- for the exclusive types group children 72.2% (sd 26.6);
- for the variety group children 84.3% (sd 16.7);
- for the reading group children 63.9% (sd 26.8).

The correct answers of all the three groups were greater than the reading group ones.

Fig. 5. Children's correct retelling responses according to teacher's question types (guided retelling)

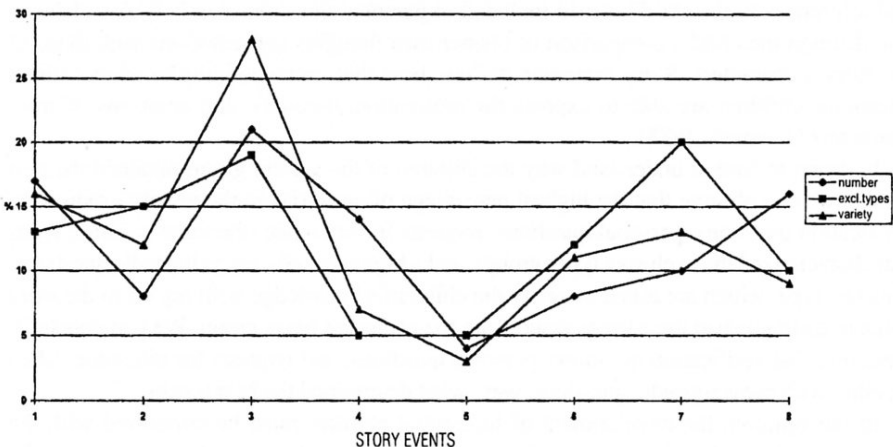


The children of the variety group produced more correct responses than the children of the other two experimental groups (See Figure 5) as well in the free retelling as in the guided retelling task.

The difference between the three experimental and the reading groups is not significant on the ANOVA test. The results for all the groups were better for the guided retelling than for the free retelling task.

We analyzed the transcripts to determine whether there was a difference in the distribution of the questions asked during the story-telling among the three groups, and if such a difference might be correlated with the children's correct answers. We were able to verify that the distribution of the questions asked by the teachers in the three groups during the story-telling was similar among the three groups (see Figure 6). Moreover, this distribution did not correlate significantly with the children's correct guided recall responses for any of the three groups (number $r = 0.36$; exclusive types $r = 0.22$; variety $r = 0.22$) nor with the correct recalled story items of the free recall (number $r = 0.28$; exclusive types $r = 0.51$; variety $r = 0.30$). This means that the children's story construction and comprehension regarding any particular event in the story did not depend on differences in the number of teacher's questions asked during the relating of that event.

Fig. 6. Distribution of teacher's questions in the three experimental groups according to story events



Discussion

The results obtained both with guided retelling and with free retelling reveal the same tendency: the best results were in the variety group, followed by the exclusive types group, the number group, and finally the reading group, which obtained the lowest results. The results obtained with the guided recall, moreover, were superior overall to those obtained with the free recall, which confirms that free recall is more difficult for children constructing a story (Brown, 1975).

The fact that the reading group, whose teachers were instructed to ask no questions during the story-telling, obtained the lowest results, leads us to consider the usefulness of

asking questions during the story-telling. Trabasso & Liu (1988) pointed out this usefulness, and explained it in this way: the use of questions helps the child understand the story because the questions lead him/her to make inferences.

Day, Stein, & Trabasso's study (1986) clearly shows the function of inference in the construction and representation of the text. They report that even children in nursery school are able to make inferences in order to grasp the coherence of the text. Studies regarding the inference process in children's story comprehension show that three- and four-year-old children already make inferences based on a close resemblance between the semantic content of the text and their knowledge of the world (Orsolini, 1985).

In our study the fact that the variety group had the best results suggests that the use of all types of questions is even more important in helping the story construction and comprehension of each child. In the number group – which had the lowest results except for the reading group – the teachers asked many rhetorical questions, which are questions that do not call for a response, and therefore do not give the child space to get involved; in fact, it seems that these questions are used only to keep the children's attention. In the exclusive types group, however, there were many verification questions, personal questions, and requests for inference, which are question types associated only with the dialogue style, and which may explain the good story construction and comprehension in this group (Albanese & Antoniotti, 1992). Comprehending and making inferences are two inextricably linked aspects of the same process (Bransford, 1979). Furthermore, the ability to draw inferences is connected with the development of a child's information elaboration processes, and references to the child's world included in personal questions can help this elaboration through the child's comparison of his/her own thoughts and emotions with those of the story's characters. Story grammar studies show that, in responding to adults' direct questions, children are able to express the motivation, thoughts, and emotions of story characters (Levorato, 1988).

In trying to further understand why the children of the variety group obtained the best results, we can observe that the highest percentage of questions in the variety group were verification questions, personal questions, requests for inference (the three question types that characterized the exclusive types group), and – highest of all – encyclopaedic questions. This last type, which are asked to verify the children's knowledge with regard to the story content, distinguished the variety group from the exclusive types group. We can conclude, therefore, that verification questions, personal questions, and requests for inference, taken together with encyclopaedic questions, were what determined the best results.

In our opinion, the development of inferential abilities must be connected with the increase of the child's knowledge, since the process of inference often consists in the interpretation of textual information in the light of knowledge already acquired by the child. If that knowledge is richer, more complete, more articulated, and organized into structures – and this is made possible by the addition of encyclopaedic questions to the other three types – it should be easier to derive from the text the implicit information necessary to understand the text fully.

The adult who wants to help the child improve his/her comprehension not only needs to use questions of the verification, personal, and requests for inference type, but also needs to facilitate the child's access to knowledge that is pertinent to the theme and the content of the story, by asking encyclopaedic questions.

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