

## Encouraging narratives in preschoolers: an intervention study\*

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### ABSTRACT

Twenty economically disadvantaged preschoolers (mean age 3;7) were randomly assigned to an intervention or a control group, and their mothers' styles of eliciting narratives from their children were assessed before and after intervention. Mothers of intervention children were encouraged to spend more time in narrative conversation, ask more open-ended and context-eliciting questions, and encourage longer narratives through back-channel responses. Children's narrative and vocabulary skills were assessed before and after the year-long intervention and 14 children participated in a follow-up assessment a year later. Narrative measures included the number and length of narratives as well as how decontextualized and informative they were. Intervention children showed significant vocabulary improvement immediately after intervention terminated, and a year later they showed overall improvements in narrative skill. In particular, intervention children produced more context-setting descriptions about where and especially when the described events took place. Such decontextualized language has been emphasized as important for literacy acquisition.

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## INTRODUCTION

This paper describes a successful intervention study that was conducted with children from a socioeconomic group that often finds itself disadvantaged in the school system, namely lower class children whose parents are on welfare. The focus of the intervention was children's language skills, and specifically their ability to produce comprehensible, complex narratives. Narratives were selected as a target of intervention for a number of reasons. Most importantly, the narrative skills of children before entering school have been found to be one of the best predictors of later school outcomes for those children who are at risk for academic and language problems (Paul & Smith, 1993). Narratives require children not only to produce multiple sentences but to knit them together into a coherent whole. Furthermore, narratives are a form of decontextualized speech. In other words, they are speech about events that are removed from the immediate context. They do not describe the here-and-now but rather the there-and-then.

The decontextualized nature of narratives is a property that has particularly engendered interest by educators. Decontextualized language has been identified as a critical link to successful school achievement (Feagans, 1982; Snow, 1983; Bruner, 1986; Watson, 1989; Miller, 1990; Snow & Dickinson, 1990; Graesser, Golding & Long, 1991; Wood, 1992; Paul & Smith, 1993; Crais & Lorch, 1994). In particular, the ability to produce decontextualized speech has been linked to literacy acquisition (Olson, 1977; Snow, 1983; Dickinson, 1991, Reese, 1995). According to Snow (1983), it is the transition from contextualized to decontextualized language that enables individuals to acquire literacy skills. And narratives about personal experiences are a particularly good format for developing decontextualized language skills because not only are they about events that are removed in time and space, they also can be produced by children even as young as two years of age (Sachs, 1983; Eisenberg, 1985; Fivush, Gray & Fromhoff, 1987; Miller & Sperry, 1988).

Because of the importance of narratives for fostering decontextualized language skills, they are common in the daily activities of the classroom such as in story telling, 'show and tell,' and 'sharing time.' According to Michaels (1981), events such as sharing time provide a link between the oral discourse that the child has experienced at home and literate discourse that is necessary at school. While such activities provide exposure to the kind of instruction and practice needed to acquire narrative skills, children are expected to already possess some discourse skills when they enter school.

Herein lies a problem. Although children from some backgrounds enter school with pre-existing knowledge of the type of narrative structure that is valued in school, children from other backgrounds often do not (Heath, 1982; Dickinson & McCabe, 1991; Michaels, 1991; Peterson, 1994). Such

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mismatches between children's pre-existing narrative skills and the discourse requirements of school mean that some children have greater difficulty understanding and meeting their teachers' demands (Heath, 1982; Dickinson & McCabe, 1991; Michaels, 1991; Crais & Lorch, 1994). Furthermore, children showing such mismatches are more likely to be defined as learning disabled (Roth, 1986).

The narrative skills of children are of course associated with cultural background and ethnic group membership (Heath, 1982; Michaels, 1991; Minami & McCabe, 1991; McCabe, 1996). But they have also been frequently associated with social class (Feagans, 1982; Heath, 1982; Walker, Greenwood, Hart & Carta, 1994). Even in a culturally and ethnically homogeneous sample, social class differences are found (Peterson, 1994).

An additional important factor that affects children's narrative skills (besides social class and culture) is parental input, or more accurately, the sorts of parent-child conversational exchanges that are fostered by parents. A number of researchers have differentiated distinct styles of narrative elicitation by parents (Fivush & Fromhoff, 1988; Hudson, 1990; Fivush, 1991; McCabe & Peterson, 1991; Peterson & McCabe, 1992; Reese, Haden & Fivush, 1993; Peterson & McCabe, 1994, 1996; Haden, 1998). Some parents extend each narrative topic being discussed, providing elaboration and lots of questions that elicit details about events and context. Other parents make little reference to the past event being discussed and ask only few, simple, and redundant questions about it, switching from topic to topic quickly. These differences in parental style have been shown to influence both the quantity and quality of narratives produced by children. All of this research showing a parent-child interaction effect on the development of narrative skill supports Vygotsky's (1978) notions of the role of adult scaffolding on fostering skill development.

Can parents be taught to interact with their children in different ways, namely in ways that foster the sorts of narrative skills that are valued in school? This is not known since no intervention study has yet attempted to do this. But other intervention studies have been successful at changing the sorts of language that parents direct at their children with resultant improvements in children's skills. For example, parents of developmentally delayed children have been taught to be more responsive and less directive in their speech to their language-delayed children and this change in maternal speech was associated with an increase in the number of conversational turns produced by their children (Earheart, 1982; Tannock, 1988; Tannock, Girolametta & Siegel, 1992). Middle-class parents have also been taught different methods of interacting with their preschoolers while reading books, which led to significant gains on standardized tests of language development (Whitehurst & Valdez-Menchaca, 1988). To our knowledge, no research has been reported in which the intervention pro-

gramme targets narrative skills in lower class children. This is the focus of the present study.

#### METHOD

##### *Participants*

Twenty children (mean age 3;7 years, half boys and half girls) from lower-class families participated along with their mothers. All families were living in subsidized housing and supported by social assistance (Canadian welfare). The families were randomly assigned to either the intervention or control group for the intervention phase of the study which lasted for 12 months. Approximately a year later when the children were 5;8 years old (mean age 5;8), 14 children (seven from each group) were found for the follow-up testing.

##### *Procedure*

At three different times (before the intervention began, at the end of the 12 month intervention period, and at the follow-up assessment a year later), personal experience narratives were elicited from the children by an experimenter who was blind to the group membership of the children. This was done by incorporating standardized lists of a dozen narrative prompts into play interactions with the children. Examples include the following: 'One time I stepped on a bee and got stung. Have you ever gotten stung by a bee?' 'Once I went to a birthday party at McDonald's. Have you ever been to a birthday party at McDonald's?' Such elicitation techniques have been found to be successful at encouraging narrative production in children (Peterson & McCabe, 1983). Once the children began narrating about a topic, the experimenter encouraged continuation by means of providing backchannel responses such as 'uh-huh,' 'yeah?' 'really?' 'and then what happened?' or repeating what the child had just said. Again, these have been found to be successful at encouraging children to continue without imposing experimenter-generated structure (Peterson & McCabe, 1983). The children's narratives were audio-recorded and transcribed verbatim.

At the beginning and end of intervention, the children were also given the Peabody Picture Vocabulary Test as a standardized measure of language. As well, the mothers were audio-recorded while they talked with their children. A tape recorder was left with the mothers for a few days and they were asked to record times when they were talking with their children, just the way they normally talked together. These general instructions to mothers have been found to be effective at eliciting appropriate samples of speech from parents (McCabe & Peterson, 1991; Peterson & McCabe, 1992, 1994). The samples of mother-child discourse were collected twice, both before and after the intervention occurred. These were transcribed verbatim.

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The intervention was conducted as follows: once the pretesting of the children was completed, parents in the intervention group were informed of the type of narrative interactions than can foster their children's language development. Good rapport between the researcher and the mothers was established, and the importance of parental interaction styles on fostering the sorts of narrative skills that help children 'fit in' with school was stressed. The intervention emphasized the following points:

- (1) Talk to your child frequently and consistently about past experiences.
- (2) Spend a lot of time talking about each topic.
- (3) Ask plenty of 'wh' questions and few 'yes/no' questions. As part of this, ask questions about the context or setting of the events, especially where and when they took place.
- (4) Listen carefully to what your child is saying, and encourage elaboration.
- (5) Encourage your child to say more than one sentence at a time by using backchannel responses or simply repeating what your child has just said.
- (6) Follow your child's lead. That is, talk about what your child wants to talk about.

The researcher then showed the mothers actual transcripts of other mothers in conversation with their children and had them listen to tape recorded conversations between mothers and children that illustrated the types of prompts and interaction style that we wanted the parents to employ. These points were discussed and then role-playing was done to help the mothers practise these skills. Subsequently, the families were revisited every other month, and interim telephone calls were made to remind and encourage the mothers.

The mothers of the children who served as controls were simply informed that this research was being conducted to learn more about how children develop narratives.

### *Measures of analysis*

*Child data.* At the beginning and end of the intervention period, the Peabody Picture Vocabulary Test was administered. The narratives collected from the children by the experimenter at the three assessment times (before intervention – hereafter termed 'pretest,' immediately after intervention – hereafter termed 'posttest,' and a year later – hereafter termed 'follow-up') were analysed for a number of narrative properties, described below. Narratives were defined as any instance of talk about a specific event which was removed in time and consisted of at least two related clauses (Peterson, 1994). A clause was considered to be any utterance containing both a subject and a predicate (Peterson & McCabe, 1994).

The following narrative properties were assessed: (1) The number of narratives produced by the children, including both those that were elicited by experimenter prompts and those that were spontaneously volunteered by the child. (2) The average length of the children's three most complex narratives, defined as their three longest ones (see Peterson & McCabe, 1983). (3) The average number of clauses produced contiguously by the child during each of their conversational turns, i.e. without adult interruption. (Backchannel responses were not considered to be an interruption.) (4) The amount of decontextualized (i.e. context-setting) information was measured by counting all instances of temporal context (indicated by WHEN – the time the event occurred) as well as spatial context (indicated by WHERE – the location of the narrated events). Examples of temporal context include ('I went there *yesterday*', 'I had to get a needle *when I was a baby*'), and examples of spatial context include ('I was in my *backyard*', 'He bringed me to the *hospital*'). (5) Informativeness of the narratives were measured by counting the number of unique units of information produced by the children (see Fivush, 1991; Peterson, 1994). These units included information pertaining to person ('*Corinne* was with me'), location ('I slept at *Sidney's* house'), activity ('I *played* with the -tendo game'), object ('When I goed trick-or-treating I got some *pumpkins* and some *fries* too'), and attribute ('This guy fell down on a *concrete* step').

#### *Parent data*

The transcripts of the mother-child conversations were searched for instances of narrative elicitation. A narrative was considered to be each instance of a past experience about which the mothers questioned their children. The following components of the mother's speech were counted: (1) Open-ended prompts consisted of all questions and/or commands that prompted for information about events and were open-ended in format ('What happened then?' 'What did you do at preschool today?'). (2) Wh-context questions included all questions that prompted the children to provide specific pieces of contextual information ('Who visited you *yesterday*?' 'When did Nanny go home?' 'Where did Mommy take you *today*?' 'What was in your lunch *today*?'). (3) Backchannelling included all instances in which the parent provided backchannel responses ('uh-huh' 'yeah?' 'tell me more') or repeated what the child has said (e.g. child: 'A little castle.' Parent: 'A little castle? Wow.') (4) Yes/no format questions were counted ('Did we go to Nanny's *yesterday*?' 'Did Nanny give you a power jeep?'). Open-ended prompts, wh-context questions, and backchannel responses were encouraged during parental intervention while yes/no questions were discouraged.

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## RESULTS AND DISCUSSION

*Parent data*

The intervention seemed to change the verbal behaviour of the mothers when they were eliciting narratives from their children. More specifically, the intervention mothers showed increases in the sorts of verbalizations we were encouraging (see Table 1). When the three behaviours we targeted (open-

TABLE 1. *Mean number of parent measures (and standard deviations)*

Measure	Time of test	
	Pretest	Posttest
<b>Open-ended prompts</b>		
Control group	11.3 (6.4)	11.7 (4.1)
Intervention group	9.7 (5.5)	14.4 (4.2)
<b>Wh-context questions</b>		
Control group	6.4 (4.2)	6.8 (4.1)
Intervention group	4.5 (3.5)	8.5 (2.6)
<b>Back-channelling</b>		
Control group	3.8 (2.9)	3.2 (2.7)
Intervention group	3.0 (1.8)	4.9 (2.5)
<b>Total of above 3</b>		
Control group	21.5 (7.2)	21.7 (6.9)
Intervention group	17.2 (5.8)	28.2 (4.0)**
<b>Yes/no questions</b>		
Control group	9.2 (3.2)	10.2 (3.2)
Intervention group	7.5 (3.7)	8.8 (2.7)

\*\*  $p < 0.05$  for the group  $\times$  time interaction.

ended prompts, wh-context questions, and backchannels) were summed and analysed via an analysis of variance, with group (intervention versus control) a between-subjects factor and test (pretest versus posttest) a within-subjects factor, there was a significant group  $\times$  test interaction,  $F(1, 18) = 5.17$ ,  $p < 0.05$ . Thus, the intervention mothers were increasing the aggregate of the sorts of utterances we were encouraging them to produce more than were the control mothers. The increases in these sorts of responses did not also lead to a significant increase in yes/no questions. Rather, when the frequency of these questions was analysed with group and test the between- and within-subjects variables, respectively, there were no significant effects. In contrast to the mothers in the intervention group, the verbal behaviour of the control group mothers did not change at all over the year in which the intervention part of the study was conducted. At the start of this period their children were about 3;6 years old and at the end they were about 4;6 years old. Thus, the children's verbal skills were undoubtedly better. Nevertheless, the control mothers did not change their way of verbally inter-

acting with their children when they conversed about there-and-then personal experiences, i.e. narration.

Two examples of mother-child exchanges illustrate the differences between intervention and control mothers. The first is an intervention mother:

- m: What are you drawing?
- s: It's a, it's a fallen down thing.
- m: A fallen down thing? What's a fallen down thing?
- s: It's a monkey bars.
- m: Oh, monkey bars?
- s: At the park.
- m: At the park. You were at the park today, weren't you?
- s: With my cousin.
- m: With your cousin. Who's your cousin?
- s: Gregory.
- m: Gregory. Do you like him a lot? Yeah. What did you do at the park?
- s: Um, took our sneakers off.
- m: You took your sneakers off? What else?
- s: Go over where all the sand is on. And I walked, and its all sticky.
- m: It was all sticky, was it? On your toes.
- s: And I stepped in the car.
- m: You stepped in the car?
- s: With no shoes and I got sand in the car.
- m: You got sand in my car? Ooh.
- s: Dirty, Mom.
- m: Yeah. What else did you do at the park?
- s: Um, I didn't get on monkey bars.
- m: No. I think the monkey bars are too big for you.
- s: I got on them before. 'Member?
- m: No.
- s: With, down there, you know. You know, the lady. Judy.
- m: Oh, yeah, Judy. You were down with her, were you? What did you do then?
- s: I get on the monkey bars.
- m: She let you on the monkey bars?
- s: Yeah. You do, 'member.
- m: I didn't go with you, so I didn't know what you did. What else did you do?
- s: Um, goed on the slide, and (...), she gave me a underduck.
- m: She what? She gave you an underduck? Holy cow.
- s: Holy catfish.

In this example, the mother is focusing on two thematically related events, namely experiences with the monkey bars. She liberally uses backchannels to

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encourage her child to continue, as well as effectively uses open-ended prompts. In the example of a control mother below, these techniques are uncommon.

- m: Were you playing with Dalton?  
s: Yes.  
m: And Robert?  
s: Yes, no. He pinched me.  
m: He pinched you? Why did he pinch you?  
s: I don't know.  
m: What did you have for lunch today?  
s: Sandwiches.  
m: No, I don't think so. That's not what your teacher told me. What did you have?  
s: What did we have?  
m: See if you can remember. Do you remember what you had for lunch today, Matthew? Here, look at your shirt. See this? What was it?  
s: I don't know.  
m: I think it was spaghetti. And did you eat all your sp-, your lunch?  
s: No.  
m: Why not? You always eats a good lunch. What did you do in circle time this morning?  
s: Nothing.  
m: Nothing? Did you play a game? You didn't play any games.  
s: Teacher didn't let, let us.  
m: She didn't let you? How come? Did she read to you?  
s: Yes.  
m: That's good. Do you remember what the story was about, that she read to you?  
s: She never read none.  
m: Do you remember about the dream you had last night?

In the above example, the control mother asked a lot of yes/no questions and few open-ended questions. Even when she did ask open-ended questions, she sometimes did not give the child the opportunity to answer. She also hopped from topic to topic rather than staying on one topic and encouraging elaboration of it. This style of interacting was common among all the mothers prior to the intervention part of the study.

#### *Child data*

The Peabody Picture Vocabulary Test was given to the children during pretest and posttest assessment. The scores for the intervention and control groups at initial testing were 52.5 and 54.0, respectively, and at the posttest

TABLE 2. *Quantity and length of narratives produced by the children<sup>1</sup>*

Measure	Time of test		
	Pretest	Posttest	Follow-up
<b># Narratives</b>			
Control group	9.8 (1.9)	8.9 (1.0)	11.6 (4.0)
Intervention group	8.5 (1.3)	8.8 (1.5)	14.0 (5.8) <sup>**</sup>
<b>Clauses/longest 3 narr.</b>			
Control group	6.9 (1.9)	7.0 (1.1)	10.5 (4.2)
Intervention group	7.7 (2.0)	7.0 (1.5)	14.7 (9.1)*
<b>Clauses/turn at talk</b>			
Control group	5.4 (1.8)	5.3 (0.9)	6.0 (2.0)
Intervention group	4.5 (2.0)	5.3 (2.1)	7.2 (3.3)

<sup>1</sup> Note: the pretest and posttest means are from the entire sample of 20 children (10 per group) whereas the follow-up means come from only 14 children (seven per group). Significance levels for the ANOVAs are for group  $\times$  time interactions.

\*  $p < 0.10$  for the ANOVAs with the two outliers omitted.

\*\*  $p < 0.01$  for the ANOVAs with the two outliers omitted.

assessment were 59.0 and 55.5, respectively. An analysis of variance with group (intervention versus control) a between-subjects factor and test (pretest versus posttest) a within-subjects factor revealed a group  $\times$  test interaction,  $F(1, 18) = 18.58$ ,  $p < 0.01$ . Intervention group children significantly improved their vocabulary scores over the year in which the intervention was conducted whereas the control children stayed the same.

Thus the intervention procedures, by encouraging language-based interactions, resulted in immediate gains in a general language measure, namely the PPVT. Similar gains on standardized assessment instruments were found by Whitehurst & Valdez-Menchaca (1988), but in that study, middle class mothers rather than lower class mothers were the targets of the parental intervention programme. The mothers in that study were encouraged to change the nature of their language interactions, specifically how they read books to their children. It is encouraging to know that changes in the verbal interactional style of lower class mothers can also lead to improvements in language scores. Furthermore, since few of the families in this study possessed children's books or regularly read them even if they did have a few, it is also encouraging to know that verbal interactions that are focused around everyday conversational topics can also have facilitative effects.

To assess changes that are specifically related to narrative rather than general language skills, the following measures were assessed for the narratives produced at each of the three testing sessions, namely the pretest, posttest, and follow-up sessions. To assess the quantity and length of the children's narratives, we measured the number of narratives they produced, the number of clauses in their three longest narratives, and the number of

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clauses produced per turn of conversation. (See Table 2.) In terms of narrative quality, we focused on two key properties: how much context-setting information was provided, and how informative the narratives were, i.e. the number of references to spatial and temporal context as well as the number of unique units of information about people, objects, actions, location and attributes. (See Table 3.)

**TABLE 3.** *Children's amount of context-setting (where and when) information and unique units of information<sup>1</sup>*

Measure	Time of test		
	Pretest	Posttest	Follow-up
<b>Spatial context (where)</b>			
Control group	6.3 (2.5)	9.1 (2.5)	8.6 (10.4)
Intervention group	7.3 (2.4)	8.7 (1.5)	15.4 (8.6)*
<b>Temporal context (when)</b>			
Control group	2.8 (1.4)	4.4 (1.4)	2.6 (1.4)
Intervention group	3.7 (2.2)	3.0 (2.2)	10.4 (9.8)*
<b>Total context-setting Info.</b>			
Control group	9.1 (2.2)	13.5 (2.7)	11.3 (10.8)
Intervention group	11.0 (1.5)	11.7 (1.7)	25.8 (17.5)**
<b>Unique units of information</b>			
Control group	33.6 (3.0)	36.1 (2.9)	117.9 (80.5)
Intervention group	31.4 (3.0)	27.9 (4.0)	170.4 (102.8)***

<sup>1</sup> Note: the pretest and posttest means are from the entire sample of 20 children (10 per group) whereas the follow-up means come from only 14 children (seven per group). Significance levels for the ANOVAs are for group × time interactions.

\*  $p < 0.10$ .

\*\*  $p < 0.05$ .

\*\*\*  $p < 0.10$  for the ANOVAs with the two outliers omitted.

\*\*\*\*  $p < 0.01$  for the ANOVAs with the two outliers omitted.

Two series of ANOVAs were calculated on all of the above measures with group and test as the between-subjects and within-subjects factors, respectively. The first series compared the pretest and posttest scores of all 20 children in group (intervention versus control) × test (pretest versus posttest) ANOVAs, and none of the ANOVAs were significant. Inspection of the means of pretest and posttest scores (see Tables 2 and 3) confirm that little change occurred within this timeframe in child narrative skills. Thus, although immediate gains were made on vocabulary, as assessed by the PPVT, there were not parallel immediate gains on narrative measures.

The story is different, however, when assessing the long-term effect of the intervention programme. The means on every measure, without exception, show gains by the intervention group over the control group children. On

average, the intervention children seemed to produce more narratives, their longest three narratives were longer, and they seemed to produce more clauses during each conversational turn. They seemed to produce more context-setting references to both where and when, and they seemed to produce more informative narratives that incorporated more unique units of information.

Two examples of experimenter-elicited narration follow. The first was produced by a child in the intervention group, and she is describing an injury she sustained while she and a friend were blowing party favour/noisemakers toward each other.

- e: I was really sick and I had to go to the Janeway (a hospital).  
s: One time when I when me and Jimmy were got one of those things that you go (whoop – demonstrates blowing) like that.  
e: Uh huh, you blow into it.  
s: I stopped and Jimmy kept on going and we were the height and Jimmy made that go under there and made a cut under my tongue. So I had to go to the Janeway. Want to know why?  
e: Why?  
s: Because you know sometimes when there (...)  
e: You know sometimes when there's what?  
s: There's those things that you don't have to go to. Sometimes you have to go to a different one. I had to go there like that.  
e: That's why you went to the Janeway.  
s: And know what? My mouth had blood coming out of it.  
e: Ohh, did it, your mouth had blood coming out of it, yeah?  
s: Yeah, some came down there and some came down there, and it was bad. The cut was about that big.  
e: Uh huh, that's big, you're showing about two inches with your fingers.  
s: I know it's two inches. And know what? I eated, Mom had to put a towel in my mouth to make it stop bleeding.  
e: Oh my goodness.  
s: You know what? We had a bucket with blood in it.  
e: You had a bucket with blood in it, my goodness, yeah?  
s: Yeah, and it was a really bad accident. Jimmy didn't even say sorry.  
e: He didn't? Oh my goodness.  
s: And that was my brother Jimmy. He's the one that done it.  
e: He's the one who cut your lip.  
s: No, under my tongue.  
e: Under your tongue, cut under your tongue.  
s: My friend Mark, know what he drank this morning?  
e: What?  
s: Tea, his mother's tea.

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(Child describes his friend drinking tea, then the experimenter tries a new prompt.)

- e: Well, do you know what? Once my little sister was picking dandelions and a bumble bee stung her arm.
- s: That's a bad story. And the one about I got cut under my tongue was bad too.
- e: That's right.
- s: Because that's dangerous to those things that you go like this (demonstrates blowing) and those little curly things come out.
- e: Oh, I know what you mean, when you blow it out and the curly things blow out.
- s: Because that those are dangerous, because my mom told me all about them.
- e: Uh huh, dangerous, aren't they?
- s: Yes, they're really dangerous, because of that accident, and Jimmy never even once said sorry because he knew that was a bad thing.
- e: My goodness.
- s: And he only said it in this voice (whispers very low), 'Sorry', and I couldn't even hear him so that means he didn't even do it.
- e: Because he said it really softly.
- s: And no one could hear him.

This child is determined to tell about her injury with elaborated detail, although at times she is confusing and difficult to understand. In contrast, the child below (who was in the control group) tells relatively short narratives.

- e: One time, I was really sick, I was really sick a while ago, and I went to the hospital and got some medicine. Have you ever been sick before?
- s: Yeah, went to the Janeway (a hospital), even I got stitches.
- e: Uh-huh? Yeah?
- s: Yeah, thought I (...), and now I'm in grade one.
- e: Uh-huh? Yeah? Wow. What else happened when you got stitches?
- s: Now I'm in karate, too.
- .....

- e: I have a friend whose name is Susan, and one time we were playing, and she said I was cheating and she threw a rock at me. Have you and your friends ever fought?
- s: I don't know. Well, one day... Somebody said, my friend, Sandra, was trying to blame on me by saying I bugged her to steal a piece of garden, and I never! He said, 'Was that true?'
- e: Uh-huh?... Yeah?... Uh-huh. Yeah?
- s: Now let's sit.

- .....
- e: Have you ever been in the woods before?
- s: Yeah, when I go rabbit hunting with my dad, who still goes rabbit hunting.
- e: Tell me about that, about once when you went rabbit hunting with your dad.
- s: He brings, he got two dogs, Chili-Dog and Martha, Martha's only a little pup, it's a girl, and Chili-Dog is a boy. But Chili-Dog's bigger than Martha. Martha's only about this size, and Chili-Dog's about this size.
- e: Uh-huh. Yeah?
- s: I don't remember anything else. That's it.

Recall that there were only seven children in each group in the follow-up assessment, so scores of the other six children were dropped from the analyses. (When the pretest and posttest scores of the 14 children who were located for follow-up assessment were compared by means of t-tests with the pretest and posttest scores of the six children who could not be located, no significant differences were found.) Univariate analyses of all the measures were calculated for the three tests in a series of group (2 levels)  $\times$  test (3 levels) ANOVAs, and there was a significant interaction between group and test for total context-setting information (combining both where and when) and for temporal (when) context-setting information,  $F(2, 24) = 3.69, p = 0.04$  and  $F(1, 12) = 3.64, p < 0.10$ , respectively. Thus, the intervention children produced more context-setting information (especially about when events took place) in the follow-up than did the control children.

Decontextualization of language has been identified as a critical link to successful school achievement and in particular to literacy acquisition (Olson, 1977; Feagans, 1982; Snow, 1983; Bruner, 1986; Watson, 1989; Miller, 1990; Snow & Dickinson, 1990; Dickinson, 1991; Graesser, Golding & Long, 1991; Wood, 1992; Paul & Smith, 1993; Crais & Lorch, 1994; Reese, 1995). In the intervention programme, mothers were encouraged (among other things) to ask their children questions about the context of the events being narrated, and such questions seemed to affect the children's likelihood of providing such contextual embedding in their self-structured narratives told to the experimenter a year later. This is consistent with work by Peterson & McCabe (1994, 1996), who assessed context-eliciting questions by well-educated, middle-class parents in their narrative interactions with their children over a period of a year and a half. During that same period, an experimenter elicited narratives in ways parallel to those used in this study. In the earlier investigation with middle-class parents, those parents whose naturalistic style of interacting with their children included more context-eliciting questions had children who in turn spontaneously provided more

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context-setting information in their narratives to the experimenter. Of most interest, the parents' use of context-eliciting questions when their children were younger was correlated with their children's spontaneous provision of context both 6 months and 1 year later. That is, the parents' encouragement of lots of context specification by their children was not reflected in their children's immediate gains in the amount of context-setting in their narratives, but rather by long-term gains over the subsequent year. This is exactly what we found here. In this study, the mothers' increases in asking context-eliciting questions did not result in gains in the children's scores during the posttest assessment, but rather only during the follow-up assessment a year later. Such sleeper effects where behavioural treatment can have long-term effects without having earlier ones have been found elsewhere (e.g. Seitz, 1981). Even when child narrative skills are related to concurrent maternal strategies, additional facilitative effects of earlier parental narrative devices (specifically evaluations) on later child narrative measures have been found (Haden, Haine & Fivush, 1997).

Did the children make gains in other narrative skills? Although the ANOVAs did not show significant interactions between group and time for the other measures, note that the standard deviations are extremely high. Thus, high variability and low subject numbers make any conclusions difficult. However, inspection of the raw data shows that there are two outliers in the data set that substantially skew the results (and lead to the extremely high standard deviations). Among the seven intervention children was one child who was very shy of the experimenter and who consequently produced almost no narrative language. Only three very minimal narratives were produced. In order to ensure that the experimenter eliciting the narratives was blind to the group membership of the children, the interviewers were strangers to the children. In this one case only, successful rapport was not established. This was not true for any other child in either group or at any other testing session. Thus, the minimal data from this one child substantially skews the data when only seven children are in the intervention group sample. The other outlier was in the control group, but in the other direction. She was much more narratively competent than the other six children in the control group, and her scores on the measures were typically at least twice as high as those of the next-closest child in her group. For example, she produced 276 unique units of information whereas only two other control children produced even 100 of such units and the majority in this group produced well under 100. In contrast, every intervention child (with the one exception described above) produced over 100 unique units of information and five of them produced between 160 and 360 unique units of information. When the ANOVAs were repeated with those two outliers omitted, all group  $\times$  test interactions were significant with the exception of the number of clauses per conversational turn. That is, despite even lower

numbers of subjects and thus an even less powerful design, intervention children produced significantly more narratives, and these narratives were significantly longer and significantly more informative, as well as contained significantly more context-setting information.

Previous naturalistic studies that investigated how parents verbally interact with their children at home when engaged in narrative talk have found that parental styles predate children's narrative skills (Fivush & Fromhoff, 1988; Hudson, 1990; Fivush, 1991; McCabe & Peterson, 1991; Peterson & McCabe, 1992; Reese *et al.*, 1993; Peterson & McCabe, 1994, 1996; Haden *et al.*, 1997). In terms of the specific variables we were assessing and the sorts of behaviours we were encouraging in the intervention group mothers, research has found that parents who regularly ask a lot of wh-context questions and prompt for contextualizing language (such as when and where the described event took place) have children who in turn produce similar information in their stand-alone narratives (Peterson & McCabe, 1992, 1994, 1996). Parents who ask more questions, and in particular more open-ended questions, have children who produce more complex narratives (Fivush & Fromhoff, 1988; Fivush, 1991; McCabe & Peterson, 1991; Reese *et al.*, 1993). And empirical tests of Vygotskian theory have shown that a multitude of complex behaviours can be fostered in children by more expert or skilful partners.

In keeping with this body of research, the current study suggests that changes in how parents encourage narration from their children has an impact on how the children's narrative skills develop. However, the facilitative effects of the intervention did not show up in the posttest assessment immediately following the termination of intervention, probably for a number of reasons. Skilful narration is the result of an extraordinary amount of interaction, and maternal narrative strategies take a long time to have an effect, especially with children this young. Even with linguistically competent children of well-educated mothers, the effects of early maternal strategies that fostered narrative orientative information took considerable time (Peterson & McCabe, 1994). Of more importance, the mothers had to systematically change their behaviour over the course of the intervention. Other research has found that mothers tend to be consistent in their strategies of narrative elicitation over the preschool years (Reese *et al.*, 1993). However, the intervention mothers had to considerably alter their previous styles of narrative elicitation, which undoubtedly was not done instantly. Rather, the changing narrative styles probably evolved slowly over the year-long intervention, through repeated reminders and discussions. This would certainly contribute to the effects of intervention not being detected immediately.

Because we randomly assigned parents and took great care to use interviewers who were blind to the experimental condition of the children,

and because in all other ways we followed careful experimental procedure, we are now in a position to say that the parents' interviewing style causes children's narrative prowess. The fact that we got significant effects with so few subjects suggests that this is a powerful effect. Overall, this study is an extension of earlier observational work, both cross-sectional and longitudinal, all of which converges in showing that parental styles of talking with their children about past experiences substantially influence their children's narrative skill development.

In terms of educational implications, the most significant findings of this intervention study are that general verbal skills of the children can be improved, but more importantly, long-term improvements in children's use of decontextualizing language can be made. The children whose mothers experienced our intervention programme provided more contextual embedding for their narratives, or in other words, they embedded their narratives within more decontextualized frameworks of where and when the described events took place. They also provided longer and more informative narratives.

An important feature of this intervention programme is that it involved parents. Prior to the present intervention study, two of us (CP and AM) have conducted other intervention programmes that were carried out in the children's preschools.<sup>1</sup> None of them had any effect. Facilitating children's narrative skills appears to take much more sustained interaction (focused around narration) than is realistic for teachers or speech and language pathologists to give. Such professionals cannot do as much as we did in our school-based interventions, and even that was not enough. Narrative skills develop over the course of considerable interaction during which adults prompt, encourage, and scaffold children's talk about the past again and again. Such talk must be frequent, over a long period of time.

Our lack of success in school-based interventions suggests that it is very difficult to change narrative skills in school-based programmes. In contrast, parents can be more effective because they spend so much time with their children and because personal narrative exchanges form an important part of the relationship between parents and children. If educators who stress the importance of decontextualized language skills for literacy and school achievement are correct, the intervention programme described here may

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[1] Prior to conducting an intervention study in which the children's own parents did the intervention at home, we did a number of other intervention studies that were conducted by researchers within the children's preschools. The following preschool-based interventions were tried: (a) asking children direct wh- questions as well as modelling well-structured narratives, (b) asking children direct wh- questions without modelling narratives, (c) modelling narratives with no direct wh- questions, (d) neither modelling narratives nor asking direct wh- questions, and (e) reading stories to children in small groups and having them dramatize the stories. These interventions were conducted for 20 minutes, five times every two weeks, for 7-9 months.

well be a relatively easy way to help preschoolers who are at risk educationally become better prepared for the educational system they are about to enter.

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