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Oral narrative skills of late talkers at ages 8 and 9

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ABSTRACT
This study compared the oral narrative skills of 31 school-aged children diagnosed at 24 to 31 months with expressive language delay (late talkers) with those of 23 typically developing peers. Based upon an extensively studied picture-book task, *Frog, Where are You?*, narratives were elicited from all participants both at age 8 and age 9. At age 9, children were asked to tell the story again and to increase their references to evaluative information (characters' emotions, character speech, and causal explanations of events; "supported" telling condition). Groups were compared on Syntax, Story Grammar, Cohesion, and Evaluative Information factor scores derived from the narrative measures. Children with histories of early language delay obtained lower Syntax, Story Grammar, and Evaluative Information factor scores than typically developing peers for each of their three narrative productions. The late talkers scored in the average range at age 8 on the Clinical Evaluation of Language Fundamentals–Revised (CELF-R), but their scores were significantly lower than those of the comparison peers. When the group differences on the Story Grammar factor were reanalyzed with the CELF-R score as a covariate, the late talkers demonstrated weaknesses in story grammar skills independent of the variance accounted for by their weaker general language skills. This suggests that the use of narrative structure may be a specific area of underachievement for late talkers, in addition to their continuing weakness in syntactic and lexical abilities, relative to typically developing peers from the same SES background.

As they progress through the school-age years, children demonstrate an increasing command of three domains of narrative ability that contribute to the foundation of literacy skills: story grammar structure, linguistic complexity, and the use of evaluative information (Allen, Kertoy, Sherblom, & Pettit, 1994; Botvin & Sutton-Smith, 1977; Hicks, 1990; Hudson & Shapiro, 1991; Labov, 1972; Liles, 1993; McCabe & Peterson, 1991).

The story grammar structure of fictional narratives includes a setting, an initiating event or problem, characters' internal responses to that problem, goal-directed actions, consequences, a resolution, and an ending (Stein, 1988). Children's fictional narratives begin to correspond to a story grammar format as they reach kindergarten age (Botvin & Sutton-Smith, 1977; Stein, 1988). By ages 7 and 8, children tell stories that contain the basic components of story structure (Berman, 1988; Berman & Slobin, 1994).

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Linguistic complexity within narrative discourse entails the ability to formulate grammatically complex sentences that indicate relations between focal events and subordinate, background events. It also facilitates linking early narrative episodes to later ones. Dasinger and Toupin (1994) found that 9-year-old English-speaking children used relative clauses to reidentify previously included characters and events, whereas 5-year-olds did not. In addition, a greater percentage of 9-year-old than 5-year-old children used relative clauses to situate new referents within a context. Thus, the ability to enhance oral narrative discourse through the use of complex syntactic structures emerges just prior to school entry and increases with age.

Narrative cohesion, a second aspect of linguistic complexity, refers to explicit connections between the sentences that comprise a story (Berman & Slobin, 1994; Halliday & Hasan, 1976; Liles, 1985; Peterson & McCabe, 1991; Shapiro & Hudson, 1991). Liles (1985) found that typically developing 7- to 10-year-old children and their language-impaired peers tended to use reference ties (such as *he* and *they*) and conjunctions (such as *and* and *then*) most often within the context of oral narrative discourse, rather than using relatively subtle cohesive tie types, such as ellipsis. In addition, Liles (1985) reported that over 80% of cohesive ties in the oral narratives of typically developing children were judged complete. In contrast, children identified as having a language disorder used significantly fewer complete cohesive ties.

Evaluative information within oral narrative discourse includes comments that transcend the recounting of actions to provide an interpretive sense of the mental states of characters and of the causal links among events in a story (Bamberg & Damrad-Frye, 1991). The role of emotions, intentions, and other psychological responses within the context of children's oral narrative productions was highlighted by Labov's (1972) "evaluative" dimension of narrative and by the "landscape of consciousness" as introduced by Bruner and colleagues (Feldman, Bruner, Renderer, & Spitzer, 1990). Bamberg and Damrad-Frye (1991), who analyzed evaluative comments in oral narratives elicited with the wordless book *Frog, Where are You?*, found that adults used a significantly greater number of evaluative devices than did 9-year-olds and that 9-year-olds were more likely to include relatively sophisticated evaluative comments, such as references to story characters' emotions and thoughts, than were 5-year-olds. However, as early as age 4, children are able to include in their narratives some information concerning the mental states of characters.

Although previous studies examined story grammar structure, linguistic complexity, and evaluative information as individual dimensions, few studies have attempted to examine these dimensions simultaneously. Furthermore, no studies have examined all three aspects of narrative skills in the narratives of children with histories of language delay.

Two studies examining narrative skill in late talkers were reported by Paul and her colleagues. Paul and Smith (1993) utilized a story-retelling task to assess narrative skills in 23 4-year-olds with a history of expressive language delay (late talkers) in comparison to 22 peers with normal language histories. Using a delay criterion of the Developmental Sentence Score (DSS; Lee, 1974; <10th percentile), 13 of the late talkers still showed expressive language delay

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at age 4 (ELD group) and 10 were in the normal range (i.e., ≥10th percentile on the DSS); hence, they were called the "late bloomer" group. Four year olds with persisting expressive language delay (the ELD group) scored significantly lower than their peers with normal language histories on every measure of narrative skill (e.g., fewer units of narrative information, fewer morphemes per T-unit, less cohesive adequacy, less lexical diversity). The late bloomers included more morphemes per T-unit than did the children in the ELD group, but they did not differ significantly from those in the typically developing or the ELD groups in terms of units of information, cohesive adequacy, or lexical diversity.

In a follow-up study, Paul, Hernandez, Taylor, and Johnson (1996) examined the narrative skills of late talkers in their sample in kindergarten, as well as in grades one and two. As in the study by Paul and Smith (1993), the late talkers were dichotomized based on whether their scores were above or below the 10th percentile on the DSS (Lee, 1974). By kindergarten, approximately 63% of the late talkers were now in the history of expressive language delay (HELD) group. Despite their normal expressive language skills, however, these children continued to manifest weaknesses in lexical diversity and story grammar use in their oral narratives. The 37% of late talkers still in the ELD group at kindergarten were significantly different from typically developing peers on lexical diversity, cohesive adequacy, and story grammar use (Paul et al., 1996).

In first grade, 73% of the late talkers were in the HELD group and 27% were in the ELD group. By first grade, the only narrative measure that differentiated the late talkers (both ELD and HELD) from the typically developing children was story grammar use as assessed by "narrative stage." The ELD and HELD subgroups did not differ from each other on any narrative measure. By second grade, 86% of the late talkers were now in the HELD group (i.e., ≥10th percentile on the DSS) and 14% were in the ELD group. None of the narrative measures differentiated the typically developing children from the late talkers, nor did the ELD and HELD subgroups differ from each other. Given the fact that the ELD subgroup had DSS scores more than one standard deviation below those of the HELD and typically developing groups in both first and second grade, the lack of group differences in narrative skill reported by Paul et al. (1996) may be due to insensitivity in the narrative measures employed.

Although Paul et al. (1996) reported that late talkers were not significantly different from peers with typical language histories on their narrative measures in second grade, several questions remain with regard to the school-age narrative skills of late talkers. These questions include the following: (a) Do late talkers differ in narrative skill from peers with normal language histories in third and fourth grade, by which time typically developing children produce quite complex narratives?; (b) Do late talkers at ages 8 and 9 differ from typically developing children in certain aspects of narrative skill (e.g., syntactic maturity, story grammar complexity, provision of evaluative information) but not in other aspects? (e.g., narrative cohesion); and (c) Do late talkers look more similar to typically developing comparison children when a narrative is elicited in a "supported telling" or scaffolded condition than when the story is elicited with minimal examiner intervention?

The present study was designed to address these three questions. Linguistic

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complexity, story grammar structure, and evaluative information were examined in a longitudinal study of narrative skill at ages 8 and 9 as demonstrated in the child's response to the book *Frog, Where are You?,* by Mercer Mayer. Participants were drawn from the cohorts of late talkers and typically developing children being followed by Rescorla and her colleagues (Rescorla, Dahlsgaard, & Roberts, 2000; Rescorla, Roberts, & Dahlsgaard, 1997; Rescorla & Schwartz, 1990), who were matched on age at 24–31 months, socioeconomic status (SES), and nonverbal ability. At ages 8 and 9, the children in both groups were asked to produce oral narratives (they received minimal intervention from an examiner). At age 9, the same children were then asked to tell the story a second time in a supported condition, which was intended to elicit evaluative comments about the characters' feeling states and speech and about causal connections among events.

METHOD

Participants

The participants in this study included 31 children who were identified at 24 to 31 months as late talkers and a comparison group of 23 children who were matched to the late talkers in chronological age, nonverbal cognitive ability, and SES. All of the participants were from white middle and upper middle class families. As all but two of the children (one per group) were male, male pronouns will be used to refer to the participants. Late talkers and comparison children were recruited through newspaper advertisements, pediatric practices, and a nearby center for the study of infant development.

For the late talkers, selection criteria included a Mental Development Index score of at least 85 on the Bayley Scales of Infant Development (Bayley, 1969), a Reynell Receptive Language Scale (Reynell, 1977) score within 3 months of chronological age, and a score at least 6 months below chronological age on the Reynell Expressive Language Scale. The selection criteria for the children in the comparison group were similar except that the Reynell Expressive Language Scale score also had to be within 3 months of chronological age. All late talkers had fewer than 50 words or no word combinations on the Rescorla (1989) Language Development Survey (LDS), whereas no comparison children met this additional delay criterion.

These 31 late talkers and 23 comparison children consisted of all members of their respective cohorts who were available to participate in both the age 8 and age 9 follow-up sessions. Children were not available for participation primarily because they had moved out of the area; a few children could not be seen due to unresolvable scheduling conflicts. The parents of one late talker and two comparison children declined to continue participating in the study after their children had reached age 4. The two groups of children in the present study were comparable to the original full cohorts (containing 40 and 39 children, respectively) on all intake measures, indicating no selective attrition in either group.

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Procedure

The narrative skills of each child were assessed at ages 8 and 9 using the picture book *Frog, Where Are You?* by Mercer Mayer (1969), which has been studied extensively in numerous investigations with children and adults (Berman & Slobin, 1994). The book's illustrations depict a boy's alarm and disappointment at discovering that his pet frog has escaped, followed by a relatively complicated series of attempts to locate the frog and the boy's eventual reunion with his pet.

At age 8 and age 9, each child was asked to preview the book silently and then to "tell the story, page by page" as he or she paged through the book. At age 9, each child was then asked to narrate the story again in a supported telling condition, which was designed to elicit comments about characters' emotions, characters' speech, and causal connectors. The children were introduced to the three types of evaluative comments prior to their second telling of the story. If the child did not spontaneously mention the evaluative information targeted on a given page, the experimenter prompted him using a predetermined protocol of questions and statements (e.g., "I wonder what the boy is saying to those frogs."). There were five probes for each type of evaluative comment. The child was asked about how the boy was feeling when he looked at his frog (p. 1), when he saw the empty jar (p. 3), when he saw the dog fall out the window (p. 7), when he was carried off by the deer (p. 18), and when he found more frogs (p. 27). Causal explanations were elicited for the events of the jar breaking (p. 7), the boy covering his nose (p. 11), the dog running from the bees (p. 15), the boy and dog falling off the cliff (pp. 20–21), and the boy holding his hand to his ear (p. 23). Character speech was probed for the boy calling the frog (p. 5), calling the mole (p. 11), calling the frog in a tree (p. 13), calling the frog from a rock (p. 17), and waving to the frog family (pp. 28–29).

Transcription of oral narratives

Each child's initial and supported tellings of the *Frog* story were videotaped and then transcribed according to MacWhinney's (1991) Child Language Data Exchange System (CHILDES) format. The basic unit of transcription and analysis was the *T* unit, defined as a single main clause plus subordinate clauses or phrase structures attached to the main clause (Hunt, 1970). The transcribed narratives were coded in terms of three dimensions of narrative skill: story grammar structure, linguistic complexity, and evaluative information.

Story grammar measures

Two measures of story grammar structure were used: an adaptation of Applebee's Narrative Maturity Scale and Berman and Slobin's (1994) criteria for narration of the Discovery Scene.

The Narrative Maturity Scale was computed based on Berman and Slobin's (1994) definitions of three "core components" of the *Frog* story (i.e., the protagonist's discovery that the frog is no longer in the jar, the search for the frog, and the finding of the frog), which were applied to Klecan-Aker and Kelty's

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(1990) adaptation of Applebee's (1978) narrative maturity scale. A score from 0 to 5 was assigned to each narrative, depending upon the number of essential story components included. The five levels of the Narrative Maturity Scale were as follows: (a) Heap (events described with no central theme), (b) Sequence (events related to a single theme), (c) Primitive Narrative (events include three essential story grammar components – initiating event, goal-directed action, and consequence), (d) Focused Chain (events include four story grammar components – the three listed previously plus a setting statement, resolution, or ending device), (e) True Narrative (including five story grammar components – initiating event, goal-directed action, consequence, resolution, and formal ending statement).

Berman and Slobin's (1994) Discovery Scene measure is based upon an illustration in the *Frog, Where Are You?* story, in which the protagonist is resting on his bed with his dog. Both are looking at the empty jar that had previously held the frog. According to Berman and Slobin (1994), the most coherent accounts of this scene include five elements: (a) the boy has awakened (a change of state), (b) it is morning (temporal location), (c) the boy sees (the protagonist learns something), (d) the jar is empty, or the frog has gone away (the central problem of the scene), and (e) the boy feels surprised or concerned and/or gets up to look for the frog (the protagonist's response to the problem, which may either be an affective reaction or an action). In the present study, raters coded the presence or absence of these five elements and each narrative was assigned a score of 1 through 5, depending upon how many of the Discovery Scene elements were included.

Linguistic complexity

Linguistic complexity was evaluated in terms of number of *T* units per narrative, percentage of complex *T* units per narrative, mean subordinate clause length, use of syntactic structures to modify nouns and verbs, and cohesive adequacy.

Each utterance of the narrative was segmented into *T* units, according to Hunt's (1970) method. Each *T* unit consisted of one main clause plus all the subordinate clauses and nonclausal structures grammatically attached to it. Coordinate clauses (those introduced by *and, then, so, but,* and *or*) were counted as separate *T* units from the clauses that preceded them. A complex *T* unit was defined as any *T* unit containing at least one subordinate clause. For example, the utterance "*When the boy woke up,* he was surprised *that the frog was gone*" consists of a single *T* unit containing two (italicized) subordinate clauses. The percentage of complex *T* units per narrative was computed by dividing the number of *T* units containing at least one subordinate clause by the total number of *T* units in the narrative. Subordinate clause length was the mean number of words per subordinate clause in the narrative.

Seven specific syntactic structures, which are displayed in Table 1, were scored for each narrative, based upon definitions and examples developed by Roth and Spekman (1989). Syntactic complexity was measured in terms of the total number of relative clauses, complements, *wh* clauses, and expanded noun phrases divided by the total number of *T* units per transcript.

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Table 1. *Syntactic structures*

Type	Explanation
Relative clause	Follows and modifies noun phrase Example: "The frog *who climbed out of the jar* was green."
Noun phrase complement	Follows and modifies nouns Example: "There were ripples *spreading through the pond*."
Propositional complement	Modifies cognitive/speech verbs Example: "He thought *the frogs were sitting on the log*."
Adjectival complement	Modifies adjectives Example: "They were happy *that they had found it*."
Adverbial complement	Modifies verbs; follows "before," "after," "if," or "because" Example: "*After the boy fell asleep*, the frog escaped."
Wh- clause	Introduced by "when," "where," or "while" Example: "He saw the frog was missing *when he woke up*."
Expanded noun phrase	More than one adjective modifying a noun Example: "He was *a little green frog*."

Table 2. *Cohesive ties*

Type	Example
Reference	"The boy is in his room. *He's* about to go to bed."
Conjunction	"They looked in the hole. *But* they didn't find the frog."
Substitution	"The dog chased the bees. But he didn't catch *one*."
Lexical	"The boy fell into the water. There was a *splashing* sound."
Ellipsis	"The boy thought the frog was in the hole. But the frog *wasn't*."

Finally, narratives were also analyzed in terms of the presence of five types of cohesive ties, as defined by Halliday and Hasan (1976) and modified by Liles (1985; Liles, Duffy, Merritt, & Purcell, 1995; see Table 2 for a list of the types and illustrative examples). After each cohesive tie was identified and categorized as to type, it was rated as either complete or incomplete/erroneous. For example, an incomplete/erroneous reference tie can be seen in the sentences: "The deer's head lifted up. And *he* was on the deer's head." For each narrative, cohesive adequacy was measured in terms of the number of complete cohesive ties divided by the total number of cohesive ties (complete plus incomplete ties), per transcript.

Evaluative information

Narratives were analyzed using two measures that were developed for use with the *Frog* story task. The first measure was evaluative devices per *T* unit, which was based upon criteria developed by Bamberg and Damrad-Frye (1991). The

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second measure was based on an adaptation of the description criteria for the Deer Scene, which were formulated in Berman and Slobin (1994).

Six types of evaluative device identified by Bamberg and Damrad-Frye (1991) were adapted for use in the current study: (a) characters' emotions (happy, sad, scared, curious, amazed); (b) characters' cognitions (thinking, seeing, finding, wondering); (c) character's direct or indirect speech (e.g., "This boy told his dog to be quiet"); (d) hedges (distancing devices suggesting uncertainty on the part of the narrator, such as "seems like" or "probably"); (e) negative qualifiers (e.g., "The boy did not look under the log"); and (f) causal connectors (use of terms, such as *because, since,* and *that's why,* which explain the logical relationships between narrative events). For each narrative transcript, the sum of all spontaneously mentioned evaluative devices was obtained. This score was divided by the number of *T* units to yield the evaluative devices per *T* unit measure. In assessing the subjects' inclusion of the 15 targeted evaluative devices in the supported telling at age 9, a rater scored whether the targeted evaluative device was mentioned by the subject without a prompt, provided in response to an examiner's prompt, or omitted.

The Deer Scene depicts a relatively complex series of events within the *Frog* book, leading up to the protagonist of the story being carried away by a deer. In the two pictures that depict this scene, the boy climbs to the top of a rock to look for his frog, and he holds on to what he thinks are branches. However, on the following page it is revealed that the boy has not grabbed branches, but rather a deer's antlers. Consequently, the deer begins to carry the boy along. According to the analysis provided in Berman and Slobin (1994), in order to relate these events in the most evaluatively sophisticated manner, the narrator must explicitly state that there was a misperception on the boy's part, and that this mistake caused the boy to be carried off by the deer. Each narrative was assigned a rating of from 1 to 4, based upon Berman and Slobin's (1994) criteria, which were adapted as follows: (a) one or no event mentioned (stating that the boy grabbed branches, was carried off by the deer, or neither event); (b) unrelated sequence of events (e.g., "He went on a rock and then he went on a deer"); (c) relation of the two events implied, without mention of the boy's misperception (e.g., "And he got on a rock and called out for him, and then he got on a reindeer because a reindeer was hiding there"); (d) boy's misperception made explicit (e.g., "And while he holds on to what he thinks are branches, it turns out that they aren't really branches. They're the horns of a deer").

Reliability of narrative measures

Interrater reliability assessments were conducted for each of the following variables: (a) inclusion of story grammar elements comprising the Narrative Maturity Scale; (b) Discovery Scene score (which assessed story grammar skills in the narration of a single scene); (c) identification of complex *T* units and subordinate clauses; (d) presence and adequacy of cohesive ties; (e) unprompted inclusion of evaluative devices; and (f) Deer Scene score. After coding 15 "practice" transcripts under the supervision of the first author, a second rater coded 66 (or 40%) of the 162 narrative transcripts. An agreement was defined as an

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Table 3. *Intake variables by group*

	Late talkers ($N = 31$)		Typically developing ($N = 23$)	
Age (months)	26.7	(2.5)	25.7	(1.9)
Hollingshead score	53.6	(13.4)	56.3	(9.3)
Bayley nonverbal score	14.1	(3.2)	14.9	(2.9)
Reynell receptive *z*	0.14	(0.47)****	1.04	(0.69)****
Reynell expressive *z*	−1.8	(0.48)****	0.35	(0.50)****
LDS total	21.0	(22.9)****	230.1	(72.2)****
CELF-R (age 8)	9.0	(1.74)****	10.93	(1.32)****

LDS, Language Development Survey (Rescorla, 1989).
****$p < .000$.

instance of congruence between the second rater and the first author prior to discussion. The percentage of agreement for each variable was computed in terms of the total number of agreements divided by the number of agreements plus disagreements. These percentages ranged from 83.7% for the Deer Scene variable to 100% for cohesive tie type. For 9 of the 12 narrative variables, agreement exceeded 95%; for 2 variables, agreement exceeded 90%.

RESULTS

Intake data comparisons

Intake measures for the two groups are presented in Table 3. At the time of their intake into this longitudinal study (24–31 months), there were no significant differences between the late talker and comparison groups on age, $t(51.9) = 1.50$, $p = .13$, Hollingshead (1975) SES score, $t(51.8) = .87$, $p = .39$, or total score on Bayley Scale nonverbal items (Bayley, 1969), $t(51.9) = 1.1$, $p = .29$. Although the late talkers scored within normal limits in terms of Reynell Receptive Language score, children in the comparison group scored a full standard deviation above the mean on that measure, $t(36.7) = 5.40$, $p < .000$. Late talkers obtained significantly lower *z* scores on the Reynell Expressive Language Scale (Reynell, 1977), $t(46.7) = 15.6$, $p < .000$, scoring 9 months below their chronological age. On Rescorla's (1989) Language Development Survey, the late talkers had a mean reported expressive vocabulary of 21 words, whereas the comparison children had a mean reported expressive vocabulary of 230 words, $t(25.3) = 13.4$, $p < .000$.

Table 3 also includes the age 8 mean score for the two groups on the Clinical Evaluation of Language Fundamentals–Revised (CELF-R; Semel, Wiig, Secord, & Sabers, 1987), based on the Linguistic Concepts, Formulated Sentences, Sentence Assembly, Semantic Relationships, Word Associations, Listening to Paragraphs, and Word Classes subtests. Although the mean CELF-R score was in the average range (score of 10) for both groups, the late talkers scored significantly lower than the comparison peers, $t(51.96) = 4.42$, $p < .000$.

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Aggregation of narrative variables into factor scores

Eight basic narrative measures were obtained for each telling: (a) proportion of complex T-units; (b) mean subordinate clause length; (c) syntactic structure use; (d) proportion of complete cohesive ties; (e) Applebee Scale Score (Overall Story Grammar); (f) Discovery Scene Score (Scene Story Grammar); (g) evaluative devices per T-unit; and (h) Deer Scene Score (Evaluative Scene Narration). The mean scores, by group, for the three tellings on these eight measures appear in Table 4.

Each of these eight measures was scored using a different metric, and more than one measure was typically obtained for each major dimension of narrative skill. Therefore, a decision was made to aggregate the eight measures into major dimensions of narrative skill, using the procedure described here. By reducing the number of statistical tests performed, this aggregation of measures also reduced the chance of Type I errors.

Preliminary correlational analyses indicated that the measures of linguistic complexity (complex *T* units, subordinate clause length, and syntactic structure use) were moderately to highly correlated in all three tellings. The two measures of story grammar structure (Applebee Scale and Discovery Scene score) were strongly correlated in all three tellings. The proportion of evaluative devices per *T* unit was significantly correlated with the use of evaluation in narrating the Deer Scene at age 8, but these two measures were not significantly correlated at age 9. Thus, initial correlational analyses suggested fairly strong story grammar and syntax dimensions across the three sets of narrative data, with some support for an evaluative information dimension in the age 8 data.

Next, principal components analyses using varimax rotation were performed on the eight narrative measures, with a factor loading criterion of .50. At age 8 the rotated component matrix included four components that corresponded quite well to our theoretical conception of narrative dimensions. The proportion of complex *T* units, syntactic structure use, and mean subordinate clause length loaded on the Syntax factor. The Applebee (Overall Story Grammar) and Discovery Scene (Scene Story grammar) scores loaded on the Story Grammar factor. The proportion of complete cohesive ties loaded with mean subordinate clause length on the Cohesion factor. Finally, the Deer Scene (Scene Evaluation) score loaded with evaluative devices per *T* unit on the Evaluative Information factor. The component structure for the first telling at age 9 was similar, except that the Syntax and Cohesion factors were combined. In the second telling at age 9, only two factors emerged: the Story Grammar factor, composed of the Discovery Scene score, and another factor on which all the other measures loaded. It appeared that the supported telling condition at age 9 led subjects to use increasingly complex syntax to support their inclusion of internal state language, character speech, and causal links between events, resulting in a high degree of intercorrelation among syntactic and evaluative measures.

The factor structure of narrative variables at age 8 accounted for a greater percentage of overall variance (80.5%) than did the factor structures extracted from the age 9 first telling (70.1%) and the age 9, second telling (65.6%). Furthermore, the factor structure extracted from the age 8 narrative data corre-

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Table 4. *Narrative variables: Means (standard deviations) by group*

	Age 8		Age 9a		Age 9b	
	LT	TD	LT	TD	LT	TD
Length in *T* units	30.40 (7.90)	35.10 (9.60)	32.30 (8.90)	34.00 (8.80)	57.60 (14.30)	62.20 (19.11)
Complex *T* units	0.12 (0.06)	0.13 (0.06)	0.12 (0.06)	0.15 (0.09)	0.23 (0.13)	0.28 (0.15)
Sub. clause length	4.50 (1.77)	5.00 (1.78)	4.30 (1.78)	5.00 (1.50)	4.70 (1.19)	5.20 (0.89)
Syntax complexity	0.13 (0.08)	0.14 (0.06)	0.13 (0.06)	0.17 (0.09)	0.23 (0.15)	31.00 (0.17)
Complete ties (%)	0.66 (0.16)	0.63 (0.14)	0.70 (0.17)	0.63 (0.19)	0.63 (0.11)	0.66 (0.09)
Eval. devices/*T* unit	0.28 (0.12)	0.31 (0.09)	0.28 (0.11)	0.33 (0.10)	0.61 (0.30)	0.75 (0.33)
Applebee	2.70 (1.10)	3.30 (1.14)	3.00 (1.15)	3.70 (1.05)	3.20 (1.09)	3.80 (0.98)
Discovery Scene	3.10 (1.23)	3.70 (0.86)	3.40 (1.20)	4.10 (0.73)	3.60 (1.05)	4.10 (1.00)
Deer Scene	1.70 (0.78)	2.30 (0.92)	2.30 (0.94)	2.80 (1.00)	2.10 (1.12)	2.70 (1.15)

LT, Late talkers, $N = 31$; TD, typically developing comparison group, $N = 23$.

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sponded to our theoretical framework of syntactic, story grammar, cohesion, and evaluative dimensions of narrative skill. For these reasons, the age 8 factor structure was imposed using principal components analysis upon the narrative variables for both tellings at age 9. Standardized Syntax, Story Grammar, Cohesion, and Evaluative Information factor scores were created from the eight narrative variables for the three tellings, each with a mean of 0 and a standard deviation of 1. Group differences in these standardized factor scores constitute the equivalent of Cohen's (1988) *d* statistic for the purpose of measuring effect size. Factor scores by group at each telling appear in Figure 1.

Group differences in narrative skills

Each of the four narrative factor scores (Syntax, Story Grammar, Cohesion, and Evaluative Information) was subjected to a 2×3 repeated measures analysis of variance, with group as the between-subjects factor and time as a within-subjects factor.

Analysis of the Syntax factor revealed a significant main effect of group, $F(1, 52) = 3.91$, $p < .05$, with late talkers obtaining lower Syntax factor scores than comparison peers in each of their three narratives. This analysis revealed neither an effect of time nor an interaction of group and time. The group effect size for the Syntax factor was small at age 8 (.16), but close to one-half a standard deviation at both age 9 tellings (.47 and .51).

The analysis of the Story Grammar factor also revealed a main effect of group, $F(1, 52) = 10.8$, $p < .002$, with the late talkers obtaining lower Story Grammar factor scores than comparison peers in each of their three tellings of the *Frog* story. This analysis revealed neither an effect of time, nor an interaction of group and time. There were substantial effect sizes for group on the Story Grammar factor at all three tellings (.58, .70, .56).

The repeated measures analysis of the Cohesion factor yielded neither main effects nor an interaction of group and time. The late talker and comparison groups obtained similar Cohesion factor scores at age 8 and in the first telling of the *Frog* story at age 9 (effect sizes < .05). From the first to the second narrative condition at age 9, late talkers demonstrated a moderate decrease in Cohesion factor scores, whereas children in the comparison group demonstrated an increase in factor scores, resulting in an effect size of .44. However, none of the differences in Cohesion factor score approached statistical significance.

The repeated measures analysis of variance (ANOVA) on the Evaluative Information factor yielded a main effect of group, $F\ (1, 52) = 10.55$, $p < .002$, with neither a main effect of time nor an interaction of group and time. The effect size for group was moderately large for all three tellings (.58, .61, .63). The children provided more evaluative comments in their supported telling than in their spontaneous telling at age 9 (.67 vs. .30), but including the Deer Scene score in the Evaluative Information factor obscured this increase in children's use of evaluative devices.

Thus, repeated measures analyses of variance on narrative factor scores revealed that late talkers obtained lower narrative factor scores in syntax, story grammar, and evaluative information dimensions across all three tellings of the

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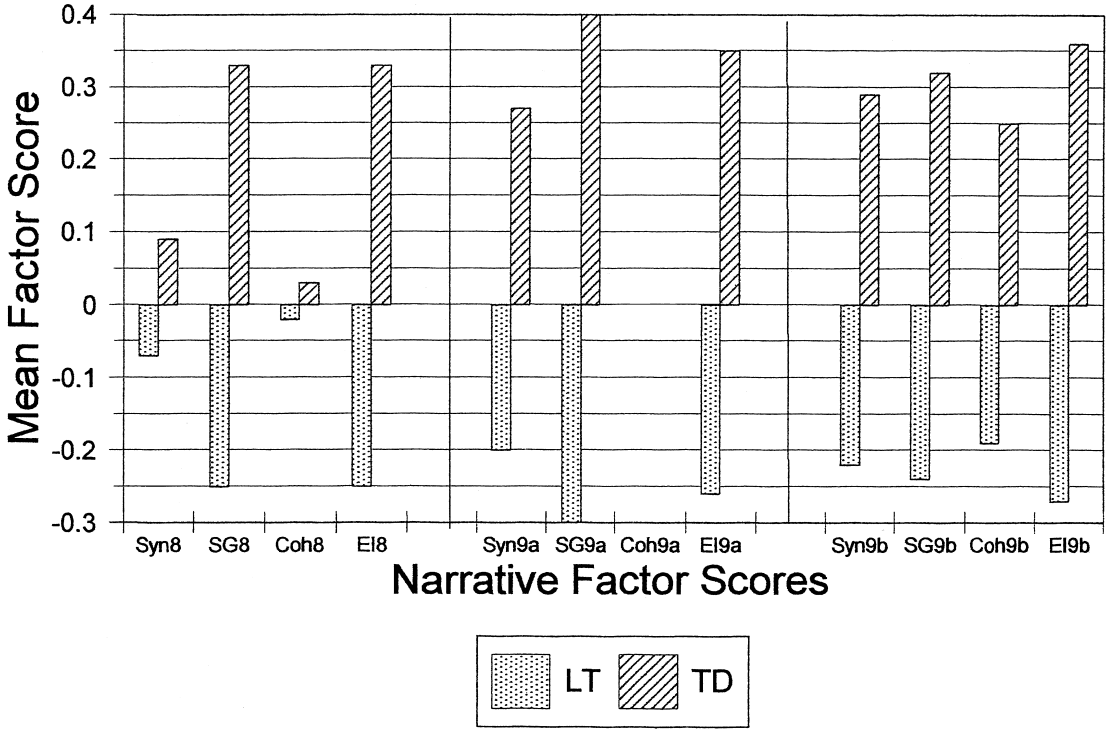

Figure 1. Narrative factor scores by group: Comparisons at ages 8 and 9.

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Frog story. There were no main effects of time nor any group by time interactions. Neither time nor the scaffolding condition enabled the late talkers to narrow the gap between their narrative skills and those of the comparison peers.

Story grammar analysis controlling for group language differences

Late talkers obtained lower scores than did comparison peers on the Story Grammar factor in each of their three tellings of the *Frog* story. Our next analysis examined the effect of group (late talker vs. comparison) on the Story Grammar factor score with the effect of general language ability partialed out of the analysis. We wanted to see if there were group differences in story grammar that were not merely a reflection of significant group differences in general language ability skills such as sentence formulation, expressive vocabulary, and word retrieval. Children's scores on the story grammar factor were analyzed using a 2 × 3, repeated measures multivariate analysis of covariance (MANCOVA), with group (late talker, comparison) as a between-subjects factor, time of measurement (age 8; age 9, first telling; age 9, second telling) as a within-subjects factor, and children's mean subtest scores on the Clinical Evaluation of Language Fundamentals–Revised (CELF-R; Semel et al., 1987) as a covariate. The MANCOVA revealed a significant effect of group, $F(1, 52) = 4.77$, $p < .034$, on the Story Grammar factor score, independent of the variance accounted for by CELF-R scores. The MANCOVA result suggests that the late talkers exhibited a weakness in use of story grammar structure that is not solely accounted for by their weaker general language skills, and is therefore reflective of a specific narrative weakness.

Analyses of targeted evaluative devices in the supported telling at age 9

Participants were asked to provide three types of targeted evaluative devices (i.e., feeling states, character speech, and causal links) throughout their second narration of the *Frog* story at age 9. Each child's inclusion of these 15 targeted evaluative devices was categorized in terms of whether the predetermined evaluative device was (a) included by the child in the absence of a prompt from the examiner, (b) included by the child after the examiner had provided a prompt, or (c) not mentioned by the child. In relation to the comparison peers, late talkers included significantly fewer of the targeted emotion state terms, character speech, and causal links prior to prompts from the examiner in the second telling of the *Frog* story at age 9, $t(50.88) = 2.73$, $p < .009$. In response to the prompts, the majority of children in both groups provided the targeted evaluative device, with no differences found between the groups.

DISCUSSION

This study compared the oral narrative skills of 31 children aged 8 and 9 who had histories of delayed expressive language to those of 23 peers with typical language histories. Although the children in the late talker group were not signif-

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icantly language delayed at ages 8 and 9, their CELF-R scores at age 8 were significantly lower than those of the comparison children. Analyses of the narrative data revealed that children in the late talker group obtained lower factor scores on syntax, story grammar, and evaluative information in relation to the comparison peers across all three tellings of a picture-elicited narrative.

When the group difference on the story grammar factor was reexamined with a standardized measure of general language ability as a covariate, the late talkers still obtained significantly lower story grammar scores than the comparison peers. This finding suggests that the story grammar weakness represents more than an additional manifestation of general language difficulties, and indeed may be considered a specific narrative deficit.

In keeping with Bruner's (1992) conception of narrative as a form of cognitive organization, the story grammar weakness in narrative productions by late talkers may reflect a difficulty in the internalization of narrative structure as a mode of thought through which events are prioritized, integrated, and understood. This might impede the efforts of late talkers as they face the task of comprehending increasingly complex texts throughout the upper elementary and middle school years.

There were no significant differences in the current study between late talkers and comparison peers in terms of linguistic cohesion. Consistent with Liles (1985), late talkers and comparison peers demonstrated a shared preference for the use of reference and conjunction ties over ellipsis, substitution, and lexical meaning ties. Unlike the language-impaired subjects in Liles' (1985) study, the late talkers in the current study did not differ from their age-mates in terms of cohesive adequacy (e.g., number of complete cohesive ties). This is consistent with the findings of Paul (Paul et al., 1996), who found that, in grade two, children with histories of expressive language delay but currently age-appropriate language did not differ from subjects with normal language histories in their use of complete cohesive ties.

The children in the late talker group included fewer complex syntactic structures in each of their narratives than did the comparison children. These structures included adverbial, adjectival, and relative clauses, as well as expanded noun phrases and propositional complements. The inclusion of subordinate clauses within complex sentences enables narrators to inform their listeners of relationships between focal and background events (Berman & Slobin, 1994), to relate events to a protagonist's perception of them, and to reintroduce characters within a story (Dasinger & Toupin, 1994).

The work of Berman and Slobin (1994) and Dasinger and Toupin (1994) suggests that the use of relatively complex subordinate clauses within an oral narrative enhances the overall quality of narrative productions from the point of view of the listener. The following excerpt, drawn from the corpus of narrative transcripts elicited from comparison children in the current study, illustrates one 9-year-old child's use of relatively complex syntax (including propositional complements and an expanded noun phrase) to enrich a narrative: "And so the boy went to sleep with the dog curled up on him. But little did they know this frog knew how to walk and wandered off. In the morning, they both woke up to discover that their tiny green friend had disappeared." In contrast, the follow-

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ing excerpt from the narrative of a 9-year-old child with a history of expressive language delay illustrates the use of relatively simple syntax in describing the same set of events: "And then he falls asleep. And the frog is gone. And then the boy is like 'uhoh!' His frog had escaped." Although each example provides the essential framework of events, the comparison child's narrative draws upon embedded syntactic structures to link a character's internal perceptions to the external happenings of the story.

The inclusion of fewer interpretive comments in their oral narratives suggests that late talkers focused upon the "landscape of action" as opposed to the "landscape of consciousness" in their stories (Bruner, 1986). It has been suggested by Astington (1990) that inferences concerning story characters' emotions and intentions become an increasingly important aspect of children's appreciation of literature as they move from the preschool to the school-age years. Astington (1990) has related the notion of "the landscape of consciousness" to that of theory of mind. In this regard, it is interesting to note that late talkers from the same cohort studied in this research differed at age 3 from their typically developing peers in the use of cognitive mental state terms (such as "think" or "believe") during mother–child free play (Lee & Rescorla, in press).

In the current study, children's inclusion of evaluative internal state information in narrating a specific scene was assessed using the Deer Scene criteria developed by Berman and Slobin (1994). Narratives received a score of 1–4, depending upon the clarity with which they specified the protagonists' misperception of a deer's antlers as tree branches and the consequences of this mistake. In their study of the Deer Scene task, Berman and Slobin (1994) reported that the majority of their 9-year-old subjects recounted the scene either as an unrelated sequence of events or with the protagonist's misperception implied, without an actual statement of the role of the misunderstanding in setting the subsequent events into motion. The findings of the current study are consistent with those of Berman and Slobin (1994), in that the majority of subjects in both the late talker and comparison groups were unable to formulate explicitly the role of the protagonist's misperception and its consequences. Berman and Slobin (1994) stated that the explicit and complete narration of the Deer Scene places a considerable burden in terms of the perceptual interpretation of the pictures, conceptualization of the link between two apparently distinct events, and linguistic formulation of the "initial event" (the boy mistaking the deer's antlers for tree branches) and "its unforeseeable consequences" (the boy being carried off by the deer). The task appeared to place just such a perceptual, cognitive, and linguistic burden on the children in the late talker and comparison groups within the current study, and it did not differentiate the late talkers from their age mates.

The results of this study also suggest that school-aged children who are engaged in a one-on-one picture-elicited narrative task benefit when the examiner uses techniques such as providing a general orienting instruction that emphasizes evaluative comments and asking close-ended, information-rich questions. Whereas McCabe and Peterson (1991) emphasized young children's inclusion of orienting information (i.e., the *who, what, where,* and *when* of narrative struc-

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tures), the intervention in the current study was designed to encourage older children's inclusion of evaluative comments concerning characters' emotions and speech and the causal links between narrative events. Children in both the late talker and comparison groups demonstrated significant increases in their spontaneous use of evaluative comments when such techniques were used in the second, "supported" telling of the *Frog* story at age 9. The two groups appeared to benefit equally from this intervention. Therefore, the intervention did not enable children in the late talker group to "catch up" to the comparison peers in terms of their inclusion of evaluative comments. This finding suggests that late talkers may possess weaknesses in their ability to process and express the interpretive elements of narrative discourse. Drawing the attention of late talkers to the importance of internal states, character speech, and causal links between events may enhance their inclusion of these inferential components to a certain extent within the course of a narrative task. However, such an intervention may not address the underlying weaknesses in inferential and narrative thinking that may serve to distinguish late talkers from their comparison peers.

In addition to their increase in evaluative comments, children in both groups increased their use of complex *T* units and mature syntactic structures in the supported telling of the *Frog* story. It appears that both late talkers and children in the comparison group used enhanced syntax in the service of describing causal relationships between events and in describing the emotions and speech of characters. Certain advanced syntactic structures, such as propositional complements ("He thought *that the frog was behind the tree*"), adjectival complements ("They were happy *that they had found it*"), and adverbial complements ("They looked *because they wanted to find it*") support the inclusion of evaluative information. This finding is consistent with Astington's (1990) discussion of the relation between children's emerging use of complex verb forms and their understanding of the landscape of consciousness within narrative discourse. According to Astington (1990), children begin to comprehend the dual landscape of narrative when they demonstrate emerging facility with verb forms such as the subjunctive, which expresses action as a possibility as opposed to a definitive fact, as in, "The frog might be behind the log." While the indicative form of a verb expresses an action as an unqualified fact (as in "The frog is behind the log,"), the subjunctive form allows for the expression of possibilities as opposed to unequivocal truths and thus forms a basis for the understanding and expression of interpretive elements in narrative.

In the present study, significant increases in evaluative comments and syntactic complexity were not accompanied by a comparable improvement in story grammar structure within the second, "supported" telling in the narratives produced by children in either group at age 9. This lack of association is consistent with Berman and Slobin's (1994) findings. These authors analyzed *Frog* stories told by 58 9-year-olds in terms of story grammar structure (i.e., organizing the story around the central theme of solving the missing frog dilemma) as well as evaluative details (such as references to characters' feelings). Berman and Slobin (1994) found that the children who organized their *Frog* stories most tightly around the central theme included fewer evaluative details than did those

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whose narratives were less mature in terms of coherence. Thus, it appears that for school-age children there may be a tension between telling a coherent story and including specific evaluative comments.

Qualitative observations of children's behavior within the current study suggested that, as the children focused on the inclusion of evaluative comments within the second telling of the story at age 9, they struggled to maintain the general flow of the narrative. Several children in both groups paused amid their telling of the story to remind themselves of the three targeted evaluative elements (characters' emotions, character speech, and causal links between the events). These pauses may have enhanced the children's inclusion of evaluative comments at the expense of their maintenance of an overall sense of the narrative.

There are several factors that limit the extent to which the findings of the current study may be generalized to other children with histories of delayed expressive language. The current study examined the oral narrative skills of children from Caucasian, middle to upper-middle class families. Thus, findings based upon this restricted sample cannot be applied across socioeconomic strata or cultural groups. In addition, several researchers (Gee, 1991; Hicks, 1991; Nicolopoulou, 1997) emphasized the sociocultural aspects of narrative discourse, which is the manner in which children's exposure to canonical discourse styles of family and culture shapes their understanding of the form and meaning of narrative. Thus, future studies of narrative skills in children with delayed expressive language should include children representing a variety of cultures, as well as the full socioeconomic spectrum. When analyzing the oral narrative productions of children from diverse communities, such studies should include not only the formalist, psycholinguistic approach to narrative assessment applied here but should also look to the participants' sociocultural tradition in developing narrative assessment tools. As research on late talkers begins to include children from a variety of communities, narrative analyses will need to take into account the role of culture in linguistic traditions.

A second limitation of the current study concerns the nature of the narrative task on which analyses were based. The *Frog* story provides an excellent basis for narrative study in that it contains a problem-resolution structure as well as several scenes that lend themselves to elaboration along the landscape of consciousness (Feldman, Bruner, Renderer, & Spitzer, 1990). In addition, productions of the Frog story have been extensively analyzed (Berman & Slobin, 1994) in terms of linguistic forms and narrative structure. Despite these advantages, the *Frog* story represents only one genre of oral narrative discourse, that of the sequential, goal-based, fictional story. Within the context of their academic experiences, children are called upon to produce several types of narrative discourse, including fictional narratives, personal accounts of events, summaries of assigned readings, and expository accounts of "how things work." Thus, future studies of oral narrative productions by children with delayed expressive language should assess the range of narrative genres that they are expected to produce within an academic context.

Finally, the assessment of the role of early, formalized speech and language

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intervention on the part of certified speech/language pathologists was beyond the scope of this study. It is known that approximately one-third of the late talkers in this sample participated in some form of speech/language therapy between the ages of 2 and 4 years. However, children's participation in early speech and language intervention was determined by their parents and was not studied in a systematic manner. Conclusions regarding the prognosis of late talkers must thus be qualified in the absence of data concerning language-based intervention.

In summary, the narrative weaknesses demonstrated by the late talkers in this study suggest that the narrative skills of children with delayed expressive language should be monitored carefully throughout their elementary school years. In the Paul et al. (1996) study, late talkers who had normal expressive language skills in second grade did not differ from typically developing peers in narrative skill. However, in the present study, late talkers assessed in third and fourth grade clearly differed from comparison children in narrative ability. Whether this is due to the older age of our children, the narrative text we used, the range of narrative skills we assessed, or the specific samples participating in our present study cannot be ascertained. Clearly, however, our results indicate that assessments of narrative skill should be broadened to include evaluative information as well as story grammar structure and linguistic complexity. In addition, the inclusion of receptive measures of story comprehension, grammatic understanding, and social cognition would enable researchers to tease apart the relative roles of comprehension and production in the narrative weaknesses of late talkers.

Given the growing consensus that narrative skills are related to academic achievement in the domains of reading and written expression, and in light of the narrative weaknesses demonstrated by late talkers in the current study, children with histories of delayed expressive language may be at risk for language-based academic difficulties as they meet increasing scholastic demands throughout the upper elementary, intermediate, and secondary school years. Ongoing studies of narrative and academic skills in children with histories of expressive language delay may contribute to the development of educational interventions aimed at enhancing such skills so that the academic achievement of late talkers may match their intellectual endowment.

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