Complimentary Author PDF: Not for Broad Dissemination

Macrostructure in the Narratives of Estonian Children With Typical Development and Language Impairment

Piret Soodla
Eve Kikas
University of Tallinn, Estonia,
and University of Tartu, Estonia

Purpose: This study examined the macrostructure in Estonian children's narratives according to the story grammar (SG) model. The study's aims were to determine whether differences exist in narrative macrostructure between Estonian- and English-speaking children, among typically developed (TD) children, and between children with and without language impairment (LI).
Method: A clinical group of 18 children with LI (ages 6–8) and a control group of 216 TD children (ages 6–7), divided into 3 language competence subgroups, participated in the study. Narratives were analyzed for the presence of SG components and quantity of story information units.
Results: Estonian children's narratives reflected age-expected SG structures similar to those of children in English-speaking countries. The analyses revealed significant group influences for the setting category, demonstrating the superior skills of TD children with high language competence in starting stories, compared with their peers. The quantity of story information units differed significantly between the high and low language competence TD subgroups, likewise between the control and the clinical groups.
Conclusions: The contrasts between stories of TD children and between TD and LI children are discussed. The findings support the suitability of the SG model in terms of quantity of story information units for language assessment.

KEY WORDS: narratives, stories, narrative assessment, macrostructure, story grammar, typical development, language impairment

Over the past 2 decades, there has been a growing interest in the study of narrative abilities of children in several disciplines, including psychology, linguistics, and speech-language pathology. Stories have been found to be a good indicator of language development, distinguishing children by age (John, Lui, & Tannock, 2003; Ukrainetz et al., 2005) and children with typical development from their peers with language disorders or learning disabilities or both (Botting, 2002; Cain, 2003; Liles, 1987; Merritt & Liles, 1987; Wagner, Nettelbladt, Sahlén, & Nilholm, 2000; Scott & Windsor, 2000). Although numerous studies exist focusing on group differences between typically developing (TD) children and children with disabilities, only a small amount of research has been carried out to assess similarities and differences in narrative production within these groups. In addition, the majority of studies about narrative abilities have been carried out in English-speaking communities of American and European countries (Cain, 2003; Fazio & Naremore,

Complimentary Author PDF: Not for Broad Dissemination

1996; Griffin, Hemphill, Camp, & Wolf, 2004; John et al., 2003; Liles, 1987; Merritt & Liles, 1987, 1989; Norbury & Bishop, 2003). Although there are studies focusing on the narrative skills of children in minority culture groups (Goldstein, Harris, & Klein, 1993; Lofranco, Peña, & Bedore, 2006; Muñoz, Gillam, Peña, & Gulley-Faehnle, 2003; Westby, Moore, & Roman, 2002), only a few have been carried out in non-Western countries and in languages other than English types (Chang, 2006; Minami, 1996; Southwood & Russell, 2004; C. L. Stein, 2004; Tsai & Chang, 2008). This research had several aims. The first aim was to examine the macrostructure of 6–8-year-old Estonian-speaking children's narratives according to the story grammar (SG) model (N. L. Stein & Glenn, 1979). The second was to compare the stories of TD children with different language competences. The third was to compare the stories of children with TD with stories of children with language impairment (LI). In addition, the study aimed to develop test material for the assessment of story-telling skills of Estonian-speaking children in the observed age range.

Macrostructure of Narratives: The SG Model

The SG model (N. L. Stein & Glenn, 1979) is one of the most commonly used approaches to analyze the macrostructure of narratives (Hughes, McGillivray, & Schmidek, 1997). The term *story grammar* is used to describe a structure-based model of story knowledge. SG components are the categories of information typically provided in a certain order within episodes of folktales and fables. According to this model, a story consists of a setting category plus an episode system. The setting statement includes an introduction of the main character(s) and describes the story's social, physical, or temporal context. A simple story contains one episode, but most stories are more complex, including two or more episodes that can be related to each other in several ways. An episode includes six sequential stages: (a) an initiating event that influences a character, (b) the character's internal response to this event, (c) the character's internal plan to solve the problem or change the situation, (d) the character's attempt to solve the problem, (e) a consequence that is caused by the attempt, and (f) the character's reaction to the consequence. Adults' and children's narratives do not always include episodes that consist of all of these components, for different reasons: They can be omitted because of the narrator's lack of storytelling skills, or they must be inferred through statements that are in the story or through the listener's world knowledge (Hughes et al., 1997).

Researchers have determined that some SG categories are structurally more important than others. Definitions of a good, coherent story are related to explicit reference to the goal-directed action of a protagonist. Liles, Duffy, Merritt, and Purcell (1995) defined a goal-based episode as some reference to three components: (a) an initiating event or an internal response, (b) an attempt, and (c) a direct consequence. The episode is not complete if one or more of these essential elements are missing. The setting information and reactions provide additional information in stories but are not crucial to the complete episode structure (Merritt & Liles, 1987).

Development of Narrative Macrostructure in Children

As children grow and develop their narrative skills, they move from simple nongoal-based sequences toward coherent episode structures. By the age of 5, children are able to tell stories organized in terms of goals and plans (Nelson, 1996). Research has found that complete episode level is attainable for 7- to 8-year-old children (Hughes et al., 1997). Although assessing a narrative's episodic structure levels has been a common approach differentiating children's storytelling abilities (e.g., Merritt & Liles, 1987; Muñoz et al., 2003; C. L. Stein, 2004), the clinical utility of SG analysis in terms of structural levels has been questioned. Namely, Liles et al. (1995) and Norbury and Bishop (2003) found that macrolevel measurement of narratives in terms of episodic structure levels (complete vs. incomplete) did not lead to clear differentiation of children's language abilities because this model does not take into account all SG components (i.e., the setting component and the protagonists' thoughts and feelings).

The second approach to analyzing macrostructure of narratives is to examine it for the inclusion (presence or frequency) of all SG components (i.e., not only the structurally most important units). Several studies demonstrate that frequency of use of all SG components in stories increases as children mature (Muñoz et al., 2003; Schneider, Dubé, & Hayward, 2005; N. L. Stein & Glenn, 1979). Research results on the inclusion of SG components in children's narratives are quite concordant, although there are also some contradictions. For example, N. L. Stein and Glenn (1979) explained that SG components such as the settings, initiating events, and consequences occur most frequently in retold narratives at the first and fifth grades. Other studies indicate that the components that elementary school children mention most frequently in their stories are the initiating events, actions, and consequences, in both generated narratives (Merritt & Liles, 1987) and retold stories (John et al., 2003). Their arguments are that these categories represent concrete events that may be easier for children to understand and thus include in their stories. The character's internal responses and reactions are the least

Complimentary Author PDF: Not for Broad Dissemination

likely to be produced in children's stories, but the frequency of these components increases significantly as they grow older (John et al., 2003; N. L. Stein & Glenn, 1979). The inclusion of SG components has also been an essential characteristic of the SG model in making a distinction between stories by children with TD and those by their peers with disabilities. For example, Merritt and Liles (1987) found that the frequency of all SG components, with one exception, was higher in self-generated stories, as well as in retold narratives, among 9- to 11-year-old TD children than in LI groups. The sole exception was the reaction category for which Merritt and Liles did not find any significant differences. By contrast, Copmann and Griffith (1994) found that the frequency of the reaction category, as well as the setting component, was lower in retold stories of LI children (8- to 13-year-olds) than in narratives of their peers, who had either TD or learning disabilities. Ripich and Griffith (1988) demonstrated that students with learning disabilities, 7–12 years of age, mentioned significantly fewer internal responses in their retold stories than their peers. Thus, a lack of consensus exists in findings concerning developmental differences in children's stories in the context of the inclusion of SG components, which may be caused by differences in story elicitation methods as well as elicitation materials.

Recent studies have proposed a third approach to analyzing narratives' macrostructure. These studies all score the relevant information according to the SG model, but instead of assessing the inclusion of SG components, this approach assesses the amount of information included in narratives (e.g., Hayward & Schneider, 2000; Peterson, 1994; Price, Roberts, & Jackson, 2006; Schneider et al., 2005; Schneider, Hayward, & Dubé, 2006; Wagner, Sahlén, & Nettelbladt, 1999). There are, however, only a few studies available that have used the scoring methods of SG components, which compare stories of children with TD to those of children with LI. For instance, Wagner et al. and Schneider et al. (2005, 2006) found that the mean amount of relevant information, based on the SG model, was significantly smaller in narratives of LI children than in those of their TD peers. In addition, Schneider et al. (2006) showed significant developmental trends in the quantity of relevant information included in stories, when analyzing narratives of children ages 4–8 years.

Although researchers have demonstrated significant group differences in narrative macrostructure between children with and without LI (e.g., Copmann & Griffith, 1994; Merritt & Liles, 1987; Schneider et al., 2005, 2006; Wagner et al., 1999), considerable heterogeneity of storytelling skills in both of these groups has been identified. Several studies have found, in particular, that a broad heterogeneity exists in narratives' macrostructure of LI children, meaning that not all of these children would necessarily have difficulties with storytelling skills (Bishop & Donlan, 2005; Boudreau, 2008; Hayward & Schneider, 2000; Pearce, McCormack, & James, 2003; Schneider et al., 2006). However, studies focusing on differences between the narrative skills of TD children in the same age range are rare. Still, some researchers have emphasized that TD children may also differ in language abilities, including narrative skills. Research has found that storytelling differences correlate with children's background, including responsiveness and stimulation of the home environment (Peterson, 1994; Price et al., 2006), the types of parent–child conversations (Nelson & Fivush, 2006; Peterson, Jesso, & McCabe, 1999), and socioeconomic status (Fazio & Naremore, 1996; Fiorentino & Howe, 2004; Peterson, 1994). There is also some evidence that narrative abilities of elementary school children within the normal range of expressive language but with a history of early expressive language delay are worse that those of their peers with typical language histories (Manhardt & Rescorla, 2002; Miniscalco, Hagberg, Kadesjö, Westerlund, & Gillberg, 2007; Paul, Hernandez, Taylor, & Johnson, 1996). Consequently, not all LI children would necessarily have difficulties with storytelling skills at the macrostructural level and vice versa: Children with no known language difficulties may also perform relatively badly on storytelling tasks. For that reason, although narrative tasks have been widely suggested as an assessment tool in clinical practice, researchers emphasize that the storytelling task, taken on its own, is not a sufficient method for use in discriminating children with LI and children with TD, and storytelling tasks should be followed up with other measures of language (Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004; Gillam & Pearson, 2004; Pankratz, Plante, Vance, & Insalaco, 2007; Schneider et al., 2006).

Cross-Cultural and Cross-Linguistic Differences in Narratives

Storytelling as a fundamental process of the human mind is characteristic of all human communities (Johnson, 1995). However, numerous studies have shown that the ways of storytelling may vary across cultures and languages. First, storytelling traditions may be distinct according to culture. In Western (i.e., European-based) cultures, children are encouraged to listen to and tell different types of stories: recounts, imaginative stories, descriptions, and accounts (Westby et al., 2002). Conversely, in some non-Western cultures (C. L. Stein, 2004; Westby et al., 2002), children are rarely the center of attention for storytelling and have neither been taught nor encouraged to express themselves. In addition, narratives in diverse cultural groups have been found to be distinctly organized. Traditional stories in Western cultures reflect the structure represented by N. L. Stein and Glenn (1979),

Complimentary Author PDF: Not for Broad Dissemination

including a setting category plus an episode system. Also, an important feature of a good narrative is explicit reference to the goal-directed action of a protagonist. As previously mentioned, children from English-speaking countries (i.e., European-based) are able to tell stories organized in terms of goals and plans by age 5 years; complete episode level is attainable by age 7 to 8 years. Japanese and African American children, compared with European North American children, tend to combine similar events that have happened at different times and places into the same story (McCabe, 1997; Rollins, McCabe, & Bliss, 2000). Latino children seem to have their own narrative style: While European North American, Japanese, and African American children often narrate sequences of actions, Latino children tend to focus on descriptive, orienting information in their stories (McCabe, 1997; Rollins et al., 2000). Westby et al. (2002) described the different ways Native American children tell how the stories' protagonists achieve their goals, when compared with their peers from mainstream American culture: Although characters in the students' stories occasionally had desires and intentions, the characters seldom produced individual plans to achieve those goals and rarely achieved their goals through their own actions. The goals, instead, were actually achieved by an outside force or event.

Narrative differences may also be due in part to linguistic factors. Several researchers have documented both similarities and differences in linguistic devices of different languages in stories of monolingual or bilingual children, but most of them have focused on microstructural variables—for example, verb tense, aspect, locative movement, connectivity, and rhetorical style (Berman & Slobin, 1994); linguistic encoding of mental states (Silliman, Huntley Bahr, Brea, Hnath-Chisolm, & Mahecha, 2002); or grammaticality (Fiestas & Peña, 2004; Gutiérrez-Clellen, 2002). Only a few studies are available that are concerned with the influence of language on narratives' macrostructure; Fiestas and Peña (2004) is an example. They compared bilingual—Spanish English—children's stories and found that children told equally complex stories in both languages. However, there were contrasts between English and Spanish narratives in the context of the children's inclusion of SG components: Children were more likely to include an initiating event and attempt to solve the problem in Spanish, while they were more likely to include a consequence in English. However, Fiestas and Peña suggested that these structural differences may also reflect cultural differences in narrative style, as well as differences in exposure to stories and the vocabulary of storytelling in school (in English) as compared with at home (in Spanish). Chang (2006) is another example. Chang analyzed the stories of Mandarin-speaking children and found that the skill children require to produce a coherent, cohesive narrative is not limited to linguistic devices.

In summary, the differences documented in narratives across communities may be due to both cultural and linguistic variations, but assessing which of these background variables has a more significant effect on storytelling is a complicated process. However, while aspects of culture play a large role in stories' macrostructural features, linguistic factors have greater influence on the microstructure of produced narratives.

The Present Study

The suitability of narrative assessment as a method of evaluating language abilities in children is widely accepted. Several assessment instruments have been developed in English-speaking countries (e.g., Gillam & Pearson, 2004; Renfrew, 1995; Schneider et al., 2005; Strong, 1998). Because narrative abilities depend on both language and cultural peculiarities, caution should be exercised when generalizing the results of reported studies, carried out in different countries and culture groups. In Estonia, there is a lack of reliable knowledge about Estonian-speaking children's narrative abilities, as well as standardized instruments for measuring storytelling skills of children. Information about these skills should be useful for clinical assessment and intervention.

The aims of this study were (a) to examine the macrostructure in oral self-generated narratives, elicited by a picture series, of Estonian children ages 6–8 years, according to the SG model; (b) to compare stories of TD children (the control group) with different language competences (as reported by their teachers), and stories of children with TD with those of children with LI; and (c) to develop test material for assessment of storytelling skills of Estonian-speaking children in the observed age range.

There were four research questions and hypotheses in this study. They are detailed in the subsections that follow.

Research Question 1

Is the SG structure in the narratives of Estonian children similar to that of English-speaking children from mainstream Western culture, reported in the reviewed studies? Earlier research has shown that narratives from different cultural groups are distinctly organized (e.g., Fiestas & Peña, 2004; McCabe, 1997; Rollins et al., 2000; Westby et al., 2002). We supposed that the cultural background in terms of storytelling in Estonia is similar to those of the reviewed studies of Western culture groups because Estonia belongs to the Western culture by virtue of its values, traditions, and forms of storytelling.

Complimentary Author PDF: Not for Broad Dissemination

European children's literature has had a substantial influence on Estonian children's books (Krusten, 1995), and numerous foreign children's books have been translated into Estonian. In addition, skills of narrative comprehension and production are aims stated in the National Curriculum for Preschool Education (Alushariduse Raamõppekava, 1999, updated in 2006). The Estonian language belongs to the Finnic group of Finno-Ugric languages and differs from English in syntactic structure and morphology (see Erelt, 2007). Because there is no evidence concerning the influence of a narrator's language on his or her story's macrostructure, we did not expect macrostructural differences due to linguistic devices. Thus, our hypothesis was that the SG structure in Estonian children's narratives would be similar to those of their English-speaking peers from Western culture. We expected that the majority of 6- to 8-year-old children would include initiating events, attempts, and consequences as structurally the most important SG components in their narratives and that explicit statements of characters' internal states would be a rare occurrence in their stories.

Research Question 2

We had two questions concerning SG components. Do significant differences occur for certain SG components when the stories of TD children are compared with the stories of children with high-, average-, and low-level competence? Do significant differences occur for certain SG components when the stories of children in the control group are compared with the stories of children with LI? Relationships between the inclusion of different SG components in their narratives and the level of language skills have been found in several earlier studies (e.g., Copmann & Griffith, 1994; John et al., 2003; Merritt & Liles, 1987; Ripich & Griffith, 1988; N. L. Stein & Glenn, 1979), although the results have been mixed. We expected that children with higher language competence would include more SG components in their stories than their peers with lower language skills. Particularly, we expected that significant differences might occur for the setting, internal response, and reaction because usage of these components should increase as children mature (John et al., 2003; N. L. Stein & Glenn, 1979), and these components have been found less frequently in stories of children with disabilities than in those of children with TD (Copmann & Griffith, 1994; Ripich & Griffith, 1988).

Research Question 3

Is there a significant difference in the quantity of story information units in the narratives of the TD group when compared against the story information units in the narratives of children with high, average, and low level of language competence? Is there also a significant difference in the quantity of story information units in the narratives of the control group when compared against the story information units in the narratives of children in the LI group? Taking into account the previous studies (Merritt & Liles, 1987; Schneider et al., 2005, 2006; Wagner et al., 1999), we expected that the quantity of story information units would be significantly different in the TD group children with different language competences, being highest in stories of children with high level of language skills and lowest in stories of their peers with low language competences. In addition, we supposed that the quantity of story information units would be lower in stories of children with LI, compared with those of the control group.

Research Question 4

Is the SG structure in narratives different in 6-year-old and 7-year-old children? On the basis of previous studies (e.g., John et al., 2003; Muñoz et al., 2003; Schneider et al., 2005, 2006; N. L. Stein & Glenn, 1979), we expected that 7-year-old children would outperform 6-year-olds in their narrative development in terms of SG structure.

Method

Participants

A total of 234 children, ranging from 6–8 years old, participated in this study. The sample consisted of two groups. The control group consisted of 216 children from 21 kindergartens in six counties in Estonia. The second clinical group consisted of 18 children with LI from the beginning of the first grade of school. Information about the language abilities of the control group came from kindergarten teachers who were asked to complete a questionnaire about various aspects of the children's competencies, including language skills (reading and storytelling). Teachers were asked to evaluate each child's skills on a 3-point scale range of low, average, and high. According to these evaluations, the control group children were divided into three language competence groups: high (HLC; 81 children), average (ALC; 106 children), and low (LLC; 29 children). Additional information about the control group's language development or disabilities was not available to the study. All children in the clinical group had been diagnosed by a speech-language pathologist as demonstrating language impairment. Children had also been diagnosed according to the *ICD-10 Classification of Mental and Behavioral Disorders* (World Health Organization, 1992) by psychiatrists in a children's clinic. Six children met the criteria for expressive language disorder (F80.1), 5 children had receptive language disorder (F80.2), and 7 children met the criteria for mixed specific developmental disorders (F83).

Complimentary Author PDF: Not for Broad Dissemination

The diagnoses are in accordance with the criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1994); that is, an expressive language disorder (315.31), mixed receptive–expressive language disorder (315.32), and learning disorder not otherwise specified (315.9). All children in the clinical group went to a school for students with LI in South Estonia.

The control group was made up of 102 (47.2%) boys and 114 (52.8%) girls. The clinical group comprised 10 (55.6%) boys and 8 (44.4%) girls. Information about children's ages in years was available for 197 of the control group children. This group comprised 111 (56.3%) 6-year-old and 86 (43.7%) 7-year-old children. The clinical group consisted of 1 (5.6%) 6-year-old child, 12 (66.7%) 7-year-old children, and 5 (27.8%) 8-year-old children. All of the children were monolingual Estonian speakers.

Materials and Procedure

Permission for the children's participation in the research was asked of their parents, and only those children whose parents gave their permission took part in the study. Assessment of storytelling skills, described next, was a major part of the research.

Stimulus Materials

To elicit children's stories, one set of a five-picture picture sequence was created (see Appendix A). The reason for the decision to choose a picture sequence as stimuli was because a series provides plot content, structure, and sequence for the storyteller. Hughes et al. (1997) suggested a picture sequence for narrative assessment of younger children. The pictures were drawn and colored by a professional artist. The surroundings, objects, and activities depicted in the pictures were supposedly familiar to children. To enable reliable and valid scoring of the stories told from the pictures, the material was designed according to the SG model. The picture sequence was designed to elicit single-episode stories. The sequence consisted of five pictures that depicted the following events that were related to SG components (shown in parentheses):

1. A boy and a girl are standing on a snowy hill with their sled (setting).
2. The girl is sledding down the hill and hits a tree. The boy is looking at the girl and his face shows he is frightened (initiating event, internal response).
3. The girl is crying in the snow on her knees and her cap is in the snow. The boy is sledding down to her (internal plan, attempt).
4. The boy is consoling the girl and gives the cap to her (attempt).
5. The boy and the girl are going back up to the hill with their sled. Their facial expressions are happy (consequence, reaction).

Procedure

The authors of this study and nine other trained examiners tested the children individually. Testing sessions took place in an isolated room in a children's kindergarten or school in the following format. The examiner and the child sat face to face across a table. The examiner told the child that he or she had several pictures, which the child could use to make a story. The examiner placed the first picture of the series on the table and said that this was the first picture of the story. The examiner then placed the other four, in an incorrect order, on the table. The examiner asked the child to set the rest of the pictures in the right order. If the child ordered the pictures differently from the expected order, the examiner reset the sequence correctly. This procedure ensured that children had carefully examined all of the pictures and tried to create the schema before telling the story. The child could look at the whole set as long as he or she wished. When the child was ready, the examiner asked him or her to tell a good, understandable story because the examiner could not see the pictures well. The purpose of this remark was to set up the situation in which the context is not shared between the child and the examiner. After these instructions, the child told the story while looking at the pictures. The story was audiotaped.

Transcription and Coding of Narrative Samples

Four examiners—the first author, two master's graduates of special education, and an experienced speech therapist—transcribed the children's narratives word for word. Comments to the examiner that did not develop the story (e.g., "Now I start" or "What's his name?") and mazes (e.g., nonlinguistic vocalizations, repetitions, false starts, and abandoned utterances) were marked in italics and were excluded from the word count and analysis.

The first author and a master's student of special education analyzed the narrative samples according to the SG model (N. L. Stein & Glenn, 1979) in a manner consistent with criteria summarized in previously reviewed studies of story production in preschool and school-aged children (setting, initiating event, internal response, internal plan, attempt, consequence, reaction). The coding of the stories' macrostructure was calculated in two ways (which are discussed in the subsections that follow).

The presence of SG components. This coding method showed whether each SG component (i.e., setting, initiating event, internal response, internal plan, attempt,

Complimentary Author PDF: Not for Broad Dissemination

consequence, reaction) was mentioned in the story. Evaluating the presence of SG components enables the pattern of stories' macrostructure to be determined.

Quantity of story information units. In addition to the analysis of the presence of SG components, stories were coded for story information units, defined as central story information (see Hayward & Schneider, 2000). The coding method was based on the SG model (N. L. Stein & Glenn, 1979), which ascertained whether the children's story information was central. Instead of assessing the structural pattern of narratives, the method enables the assessment of the amount of relevant information included in stories. For example, for the setting category, the child received 1 point for mentioning both protagonists (mentioned by nouns, not pronouns), 1 point for mentioning the time, 1 point for mentioning the place, and 1 point for mentioning the activity (sledding). Similarly, if the child mentioned that the boy was cheering up the girl, they received 1 point for the attempt category; if this unit included more statements about the boy's actions (e.g., the boy is cheering up the girl; gives the cap to her), the score for the attempt category was higher (1 point per statement). Statements made repetitively (e.g., if the child said, on two occasions, that the girl hits the tree) received just 1 point. Finally, all of the points calculated for each SG component were added up for the quantity of story information units (SG score), indicating the amount of relevant information in the story. Two examples of coding for story information units are included in Appendix B.

Coding Reliability

Thirty-two narratives were used to calculate interrater reliability for SG ratings. For the presence of SG components, the agreement rate was .92, using Cohen's kappa. For the quantity of story information units, the point-by-point agreement was 86.5%.

Results

Presence of SG Components in Children's Stories

To compose a description of the structural pattern of Estonian children's narratives, stories of the control group were analyzed in terms of the presence of SG components. Table 1 shows the inclusion of SG components in the children's stories.

The majority of the control group stories involved initiating events, attempts, and consequences. The setting component was present in half of the narratives, and categories depicting characters' emotional states (internal responses and reactions) were rarer. The analyses showed that the control group children did not usually mention characters' plans to reach the goal; only 1 child mentioned that aspect explicitly. Because of the absence of explicitly stated internal plans in the stories, this category was excluded from further analysis.

Table 1. The number and percentages of control group children and children with LI by story grammar components in narratives.

	Control group (*N* = 216)		LI group (*N* = 18)		
SG component	***n***	**%**	***n***	**%**	***p* value**
Setting	110	50.9	7	38.9	.463
Initiating event	215	99.5	18	100.0	1.000
Internal response	47	21.8	1	5.6	.132
Internal plan	1	0.5	0	0.0	1.000
Attempt	214	99.1	17	94.4	.214
Consequence	193	89.4	18	100.0	.229
Reaction	36	16.7	0	0.0	.084

Note. LI = language impairment; SG = story grammar. The *p* value is calculated using two-tailed Fisher's exact test.

The results of the TD group children in different language competence groups were compared for the presence of SG components, using two-tailed Fisher's exact probability test. We used an alpha level of .05 and confidence intervals at the level of 95% for all statistical tests. The odds ratio (OR) was the measure of effect size. Table 2 shows the results for the presence of SG components. The analysis revealed a main group effect for the setting category, indicating a significant difference between stories of HLC and ALC children ($p = .005$), as well as HLC and LLC children ($p = .048$). ORs also highlight the effect of the setting category (HLC–ALC: OR = 2.34, CI [1.29, 4.24]; HLC–LLC: OR = 2.54, CI [1.07, 6.05]), meaning that children in the HLC group were more than two times as likely to

Table 2. The number and percentages of control group children with low, average, and high levels of language competence by story grammar components in narratives.

	LLC (*N* = 29)		ALC (*N* = 106)		HLC (*N* = 81)	
SG component	***n***	**%**	***n***	**%**	***n***	**%**
Setting	12	41.4	46	43.4	52	64.2
Initiating event	28	96.6	106	100.0	81	100.0
Internal response	5	17.2	22	20.8	20	24.7
Attempt	29	100.0	104	98.1	81	100.0
Consequence	26	89.7	96	90.6	71	87.7
Reaction	3	10.3	21	19.8	12	14.8

Note. LLC = low language competence; ALC = average language competence; HLC = high language competence.

Complimentary Author PDF: Not for Broad Dissemination

be classified as such by the presence of the setting component. LLC and ALC groups did not differ for setting component, $p = 1.0$, OR = 1.09, CI [0.47, 2.50]. Usage of other SG components did not differ significantly between the groups, $p > .10$ in all comparisons.

An age comparison was made for the control group children ($N = 197$), using Pearson's chi-square test. Fifty-two (46.9%) 6-year-old children and 52 (60.5%) 7-year-old children included the setting in their stories. Although the stories of the older children included the settings more frequently, the difference between the groups was not significant, $\chi^2(2, N = 197) = 3.61, p = .058$, OR = 1.74, CI [0.98, 3.07]. For other SG components, frequency of use did not differ significantly by age ($p > .10$).

The group comparison was also carried out for the control group and children with LI. Table 1 indicates tendencies for some SG units; however, these differences did not reach significance.

Quantity of Story Information Units in Children's Stories

Results were calculated as the mean quantity of story information units included in the narratives. For the TD group, differences among LLC, ALC, and HLC groups were compared using a one-way analysis of variance (ANOVA). For post hoc tests, the Bonferroni correction was applied. We used independent sample t tests to compare the results of the age groups and the control group with the LI children. We used an alpha level of .05 and CIs at the level of 95% for all statistical tests. Effect sizes were calculated, using eta squared (η^2; for ANOVA) and Cohen's d (for the Bonferroni correction and t tests). According to Cohen (as cited in Vacha-Haase & Thompson, 2004), effect sizes were interpreted as follows: small ($\eta^2 = .01, d = 0.20$), medium ($\eta^2 = .1, d = 0.50$), and large ($\eta^2 = .25, d = 0.80$).

Stories of TD group children with LLC, ALC, and HLC included different quantities of central information; the higher the language competence was, the more central information the story included (LLC: $M = 5.86$, $SD = 1.30$, CI [5.37, 6.36]; ALC: $M = 6.69$, $SD = 1.81$, CI [6.34, 7.04]; HLC: $M = 7.32$, $SD = 1.88$, CI [6.91, 7.74]). The ANOVA showed that the effect of language competence was significant, $F(2, 213) = 7.71, p < .001, \eta^2 = .07$. Post hoc analyses indicated that the narratives of children with HLC consisted of significantly more story information units than stories of LLC children ($p < .001$, $d = 0.90$). The differences between the HLC and ALC groups, likewise the ALC and LLC groups, just missed significance (HLC–ALC: $p = .051$, $d = 0.34$; ALC–LLC: $p = .083$, $d = 0.52$).

An age comparison was carried out for the control group children. The quantity of story information units was lower in the group of 6-year-olds ($M = 6.64$, $SD = 1.85$, CI [6.29, 6.99]) than in the group of 7-year-olds ($M = 7.09$, $SD = 1.77$, CI [6.71, 7.47]). However, the analysis did not reveal statistical significance between these age groups, $t(195) = 1.74, p = .084, d = 0.25$.

A comparison of the results of the control group with the group of LI children showed that stories in the control group included significantly more central information ($M = 6.82$, $SD = 1.83$, CI [6.57, 7.06]) than those of children with LI ($M = 5.39$, $SD = 0.98$, CI [4.90, 5.88]), $t(232) = 3.26, p = .001, d = 0.97$.

Discussion

This study explored the macrostructure in narratives of 6- to 8-year-old Estonian children in terms of the SG model (Stein & Glenn, 1979). The stories were analyzed in two ways: for the presence of SG components and for the quantity of story information units. Analyses were carried out for three comparisons: First, we compared the stories of the TD group (the control group) children with different language skills, judged by their teachers (low, average, and high); second, the control group's narratives were analyzed for age-based differences; and, third, comparisons were carried out between the control group and the children diagnosed with LI. Results demonstrated that children with a high level of language skills included a setting component in their story significantly more frequently than their peers with average and low language competencies. The quantity of story information units differed significantly between the subgroups of levels of language skills in the TD group and between the control group and children with LI.

The results pertaining to Estonian children were consistent with those of earlier studies that examined the macrostructure in stories of English-speaking children (e.g., John et al., 2003; Merritt & Liles, 1987). As in the previous research, the studied children mentioned the initiating events, actions, and consequences most frequently in their stories. The presence of these SG elements was high in the stories of all groups: children with high, average, and low language skills in the TD group, and children with LI. The results demonstrated Estonian children's capability to produce structurally complete stories by the age of 6–8 years as we expected, based on similarities of cultural background between Estonian and European children's literature and storytelling traditions.

Furthermore, previous research by Copmann and Griffith (1994) has demonstrated relations between the presence of the setting and the reaction components and the language abilities of 8- to 13-year-old children. Ripich and Griffith (1988) discovered connections between internal responses and children's learning abilities by the age of 7–12 years. In our study, only the presence of the

Complimentary Author PDF: Not for Broad Dissemination

setting component was a significant category for differentiating between the stories of the language level groups. However, the presence of the setting component occurred more frequently only in stories of the control group children with high language competence. Their presence did not differentiate between the children with average and low language competences or between the control group and group of children with LI. This finding indicates that many children with TD do not include setting information in their self-generated stories, and that only children with high language competence are more skilled in beginning self-generated stories with sufficient introductive information. This may be related to the fact that children are not explicitly taught about story components in kindergartens. Although kindergarten teachers and parents read and tell stories that contain these components, only children with high language skills are able to learn from these implicit models. In addition, children this age, including those with high language competencies, rarely mention characters' internal states when telling stories, as elicited by picture sequence. Although our results showed that mentioning of the character's internal responses and reactions was practically missing in the group with LI, the presence of these components was rare in the TD group also, and analyses did not reveal statistically significant group differences. Discrepancies between the results of earlier studies and ours may be due to the differences in the age groups that were studied, the small sample size of LI children, and differences between story elicitation methods. In summary, this study indicated that although differences exist in usage of SG components between children with different language skills, these are not meaningful for differentiating children with TD from those with LI.

To evaluate the quantity of central information included in the narratives, we analyzed each SG component in terms of story information units and calculated the total SG score. The findings demonstrated that children with HLC included more information in their stories than children with LLC. The other comparisons in the TD group (HLC–ALC and ALC–LLC) showed also a trend to include more information in a story if language competence is higher, although these results were not significant. However, the SG score distinguished children with LI from those in the control group. The result is similar to the findings of previous studies (Schneider et al., 2005, 2006; Wagner et al., 1999) that children with LI produce stories that are less informative than those of their TD peers. Thus, this finding is consistent with Schneider et al. (2005, 2006), indicating the necessity to take all SG components into consideration while assessing children's storytelling skills in clinical practice.

Numerous studies (e.g., John et al., 2003; Muñoz et al., 2003; Ukrainetz et al., 2005; Schneider et al., 2005, 2006; N. L. Stein & Glenn, 1979) have indicated that stories become structurally more complex as children mature. A similar tendency was shown in our study, but the age difference was not statistically significant. The reason for the lack of significance is probably due to the age groups being given in complete years as opposed to months, which meant that the real differences between age clusters were most likely too small to make a measurable difference.

Conclusions and Limitations

This study provides a general picture of storytelling skills of 6- to 8-year-old Estonian children in a single picture-elicited narrative task, demonstrating that Estonian-speaking children produce narratives with a macrostructure comparable to English-speaking children of similar ages. In addition, this investigation indicates that the setting component is more common in self-generated stories of children at a high level of language competence. However, the presence of the setting component does not enable the differentiation of children with TD from those with LI, using this method for language assessment at the observed age range. At the same time, the results support the suitability of the story grammar model in terms of quantity of story information units for language assessment.

In addition to studying differences between children with and without LI (i.e., clinical and control groups), we analyzed differences in storytelling skills among TD children with different language competences. Our findings show that narrative performance in the context of SG structure may differ significantly among children within the normal range of language development. Moreover, children with no diagnosed LI but whose language competence was considered low, by their teachers, told stories that were structurally quite similar to those of children with LI. These findings show that although differences may exist in narrative macrostructure between children with TD and children with LI, these differences are not categorical. Furthermore, narrative abilities of LI children may overlap with their peers whose language development has been considered typical but is still relatively low. Consequently, although narrative performance is informative in evaluation and intervention of storytelling skills, clinicians should be cautious when interpreting results of children's narratives in clinical assessment. Our findings support the conclusions of earlier studies (e.g., Fey et al., 2004; Gillam & Pearson, 2004; Pankratz et al., 2007; Schneider et al., 2006) that storytelling tasks should be followed up with other measures of language skills.

Some limitations of the study also need mentioning. First, only teachers' evaluations of the control group's children's language skills were used. Teachers' ratings may

Complimentary Author PDF: Not for Broad Dissemination

be highly subjective, and different teachers may base their evaluations on different behaviors. However, several researchers (e.g., Llosa, 2007; Meisels, Bickel, Nicholson, Xue, & Atkins-Burnett, 2001; Newman & McGregor, 2006) have found that teacher judgments of children's skills could be trusted because these correlated well with external measures and discriminated accurately between students who have disabilities and those who do not. Nevertheless, further research is needed not only on the formulation of teachers' rating but also on factors influencing language skills and development. Another limitation was the relatively small sample size of the LI group that enabled the study to show trends in language development as opposed to valid generalizations. In further studies, the sample size of children with LI should be increased. Finally, the children's storytelling was elicited as self-generated narratives without any previous model story. In future research, the influences of different task conditions (i.e., story retelling and generation with a previous model story) on the children's narrative production should be examined.

The present study focused on storytelling skills of Estonian children in the context of SG structure. In the future, other aspects of narrative macrostructure should also be tested; for example, knowledge of dialogue, narrator evaluations, and formulaic markers as suggested by Petersen, Gillam, and Gillam (2008). Furthermore, the narrative microstructure in the context of cohesion and grammar should also be analyzed.

Acknowledgments

This study was supported by Estonian Science Foundation Grant 7388 (awarded to both authors) and Grant 7492 (awarded to the first author) and by Estonian Ministry of Education and Research Grant SF0180025s08. We thank Janne Jehe, Inna Marats, Mairi Männamaa, Airi Niilo, Helve Saat, Tiina Saat, Evelin Saat, Krista Metsjärv, and Ly Kala for helping with data collection; Maret Pajuste and Triin Saar for helping with transcription of stories; and Marcus Denton at OÜ Derettens for language editing.

References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Berman, R. A., & Slobin, D. I. (1994). *Relating events in narrative: A crosslinguistic developmental study*. Hillsdale, NJ: Erlbaum.

Bishop, D. V. M., & Donlan, C. (2005). The role of syntax in encoding and recall of pictorial narratives: Evidence from specific language impairment. *British Journal of Developmental Psychology, 23,* 25–46.

Botting, N. (2002). Narrative as a tool for the assessment of linguistic and pragmatic impairments. *Child Language Teaching and Therapy, 18,* 1–21.

Boudreau, D. (2008). Narrative abilities: Advances in research and implications for clinical practice. *Topics in Language Disorders, 28,* 99–114.

Cain, K. (2003). Text comprehension and its relation to coherence and cohesion in children's fictional narratives. *British Journal of Developmental Psychology, 21,* 335–351.

Chang, C. (2006). Linking early narrative skill to later language and reading ability in Mandarin-speaking children: A longitudinal study over eight years. *Narrative Inquiry, 16,* 275–293.

Copmann, K. S. P., & Griffith, P. L. (1994). Event and story structure recall by children with specific learning disabilities, language impairments, and normally achieving children. *Journal of Psycholinguistic Research, 23,* 231–248.

Eesti Vabariigi Valitsus [The Government of the Republic of Estonia]. (1999/2006). Alushariduse raamõppekava [National curriculum for preschool education]. *Riigi Teataja I, 46,* 338. Retrieved from https://www.riigiteataja.ee/ert/act.jsp?id=12745713.

Erelt, M. (Ed.). (2007). *Estonian language: Linguistica uralica.* (Supplemental Series, 1). Tallinn, Estonia: Estonian Academy Publishers.

Fazio, B. B., & Naremore, R. C. (1996). Tracking children from poverty at risk for specific language impairment: A 3-year longitudinal study. *Journal of Speech and Hearing Research, 39,* 611–624.

Fey, M. E., Catts, H. W., Proctor-Williams, K., Tomblin, J. B., & Zhang, X. (2004). Oral and written story composition skills of children with language impairment. *Journal of Speech, Language, and Hearing Research, 47,* 1301–1318.

Fiestas, C. E., & Peña, E. D. (2004). Narrative discourse in bilingual children: Language and task effects. *Language, Speech, and Hearing Services in Schools, 35,* 155–168.

Fiorentino, L., & Howe, N. (2004). Language competence, narrative ability, and school readiness in low-income preschool children. *Canadian Journal of Behavioural Science, 36,* 280–294.

Gillam, R. B., & Pearson, N. A. (2004). *The Test of Narrative Language*. Austin, TX: Pro-Ed.

Goldstein, B. C., Harris, K. C., & Klein, M. D. (1993). Assessment of oral storytelling abilities of Latino junior high school students with learning handicaps. *Journal of Learning Disabilities, 26,* 138–143.

Griffin, T. M., Hemphill, L., Camp, L., & Wolf, D. P. (2004). Oral discourse in the preschool years and later literacy skills. *First Language, 24,* 123–147.

Gutiérrez-Clellen, V. F. (2002). Narratives in two languages: Assessing performance of bilingual children. *Linguistics and Education, 13,* 175–197.

Hayward, D., & Schneider, P. (2000). Effectiveness of teaching story grammar knowledge to pre-school children with language impairment: An exploratory study. *Child Language Teaching & Therapy, 16,* 255–284.

Hughes, D., McGillivray, L., & Schmidek, M. (1997). *Guide to narrative language: Procedures for assessment*. Eau Claire, WI: Thinking Publications.

John, S. F., Lui, M., & Tannock, R. (2003). Children's story retelling and comprehension using a new narrative resource. *Canadian Journal of School Psychology, 18,* 91–113.

Complimentary Author PDF: Not for Broad Dissemination

Johnson, C. J. (1995). Expanding norms for narration. *Language, Speech, and Hearing Services in Schools, 26,* 326–341.

Krusten, R. (1995). *Eesti lastekirjandus* [*Estonian children's literature*]. Tartu, Estonia: Elmatar.

Liles, B. Z. (1987). Episode organization and cohesive conjunctives in narratives of children with and without language disorder. *Journal of Speech and Hearing Research, 30,* 185–196.

Liles, B. Z., Duffy, R. J., Merritt, D. D., & Purcell, L. (1995). Measurement of narrative discourse ability in children with language disorders. *Journal of Speech and Hearing Research, 38,* 415–425.

Llosa, L. (2007). Validating a standards-based classroom assessment of English proficiency: A multitrait–multimethod approach. *Language Testing, 24,* 489–515.

Lofranco, L. A. L., Peña, E. D., & Bedore, L. M. (2006). English language narratives of Filipino children. *Language, Speech, and Hearing Services in Schools, 37,* 28–38.

Manhardt, J., & Rescorla, L. (2002). Oral narrative skills of late talkers at ages 8 and 9. *Applied Psycholinguistics, 23,* 1–21.

McCabe, A. (1997). Developmental and cross-cultural aspects of children's narration. In M. Bamberg (Ed.), *Narrative development: Six approaches* (pp. 137–174). Mahwah, NJ: Erlbaum.

Meisels, S. J., Bickel, D. D., Nicholson, J., Xue, Y., & Atkins-Burnett, S. (2001). Trusting teacher judgments: A validity study of a curriculum-embedded performance assessment in kindergarten to grade 3. *American Educational Research Journal, 38,* 73–95.

Merritt, D. D., & Liles, B. Z. (1987). Story grammar ability in children with and without language disorder: Story generation, story retelling, and story comprehension. *Journal of Speech and Hearing Research, 30,* 539–552.

Merritt, D. D., & Liles, B. Z. (1989). Narrative analysis: Clinical applications of story generation and story retelling. *Journal of Speech and Hearing Disorders, 54,* 429–438.

Minami, M. (1996). Japanese preschool children's narrative development. *First Language, 16,* 339–363.

Miniscalco, C., Hagberg, B., Kadesjö, B., Westerlund, M., & Gillberg, C. (2007). Narrative skills, cognitive profiles and neuropsychiatric disorders in 7–8-year-olds children with late developing language. *International Journal of Language and Communication Disorders, 42,* 665–681.

Muñoz, M. L., Gillam, R. B., Peña, E. D., & Gulley-Faehnle, A. (2003). Measures of language development in fictional narratives of Latino children. *Language, Speech, and Hearing Services in Schools, 34,* 332–342.

Nelson, K. (1996). *Language in cognitive development: Emergence of the mediated mind*. New York, NY: Cambridge University Press.

Nelson, K., & Fivush, R. (2006). Parent–child reminiscing locates the self in the past. *British Journal of Developmental Psychology, 24,* 235–251.

Newman, R. M., & McGregor, K. K. (2006). Teachers and laypersons discern quality differences in narratives produced by children with or without SLI. *Journal of Speech, Language, and Hearing Research, 49,* 1022–1036.

Norbury, C. F., & Bishop, D. V. M. (2003). Narrative skills of children with communication impairments. *International Journal of Language & Communication Disorders, 38,* 287–313.

Pankratz, M. E., Plante, E., Vance, R., & Insalaco, D. M. (2007). The diagnostic and predictive validity of *The Renfrew Bus Story*. *Language, Speech, and Hearing Services in Schools, 38,* 390–399.

Paul, R., Hernandez, R., Taylor, L., & Johnson, K. (1996). Narrative development in late talkers: Early school age. *Journal of Speech and Hearing Research, 39,* 1295–1303.

Pearce, W. M., McCormack, P. F., & James, D. G. H. (2003). Exploring the boundaries of SLI: Findings from morphosyntactic and story grammar analyses. *Clinical Linguistics & Phonetics, 17,* 325–334.

Petersen, D. B., Gillam, S. L., & Gillam, R. B. (2008). Emerging procedures in narrative assessment: The Index of Narrative Complexity. *Topics in Language Disorders, 28,* 115–130.

Peterson, C. (1994). Narrative skills and social class. *Canadian Journal of Education, 19,* 251–269.

Peterson, C., Jesso, B., & McCabe, A. (1999). Encouraging narratives in preschoolers: An intervention study. *Journal of Child Language, 26,* 49–67.

Price, J. R., Roberts, J. E., & Jackson, S. C. (2006). Structural development of the fictional narratives of African American preschoolers. *Language, Speech, and Hearing Services in Schools, 37,* 178–190.

Renfrew, C. (1995). *Renfrew Bus Story manual: A test of narrative speech*. Oxford, England: Winslow.

Ripich, D. N., & Griffith, P. L. (1988). Narrative abilities of children with learning disabilities and nondisabled children: Story structure, cohesion, and propositions. *Journal of Learning Disabilities, 21,* 165–173.

Rollins, P. R., McCabe, A., & Bliss, L. (2000). Culturally sensitive assessment of narrative skills in children. *Seminars in Speech and Language, 21,* 223–234.

Schneider, P., Dubé, R. V., & Hayward, D. (2005). *The Edmonton Narrative Norms Instrument*. Retrieved from http://www.rehabmed.ualberta.ca/spa/enni.

Schneider, P., Hayward, D., & Dubé, R. V. (2006). Storytelling from pictures using the Edmonton Narrative Norms Instrument. *Journal of Speech-Language Pathology and Audiology, 30,* 224–238.

Scott, C. M., & Windsor, J. (2000). General language performance measures in spoken and written narrative and expository discourse of school-age children with language learning disabilities. *Journal of Speech, Language, and Hearing Research, 43,* 324–339.

Silliman, E. R., Huntley Bahr, R., Brea, M. R., Hnath-Chisolm, T., & Mahecha, N. R. (2002). Spanish and English proficiency in the linguistic encoding of mental states in narrative retellings. *Linguistics and Education, 13,* 199–234.

Southwood, F., & Russell, A. F. (2004). Comparison of conversation, freeplay, and story generation as methods of language sample elicitation. *Journal of Speech, Language, and Hearing Research, 47,* 366–376.

Stein, C. L. (2004). Analysis of narratives of Bhutanese and rural American 7-year-old children: Issues of story grammar and culture. *Narrative Inquiry, 14,* 369–394.

Stein, N. L., & Glenn, C. (1979). An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.),

Complimentary Author PDF: Not for Broad Dissemination

New directions in discourse processing (Vol. 2, pp. 53–120). Norwood, NJ: Ablex.

Strong, C. J. (1998). *The Strong Narrative Assessment Procedure*. Eau Claire, WI: Thinking Publications.

Tsai, W., & Chang, C. (2008). "But I first … and then he kept picking": Narrative skill in Mandarin-speaking children with language impairment. *Narrative Inquiry, 18,* 349–377.

Ukrainetz, T. A., Justice, L. M., Kaderavek, J. N., Eisenberg, S. L., Gillam, R. B., & Harm, H. M. (2005). The development of expressive elaboration in fictional narratives. *Journal of Speech, Language, and Hearing Research, 48,* 1363–1377.

Vacha-Haase, T., & Thompson, B. (2004). How to estimate and interpret various effect sizes. *Journal of Counseling Psychology, 51,* 473–481.

Wagner, R. C., Nettelbladt, U., Sahlén, B., & Nilholm, C. (2000). Conversation versus narration in pre-school children with language impairment. *International Journal of Language & Communication Disorders, 35,* 83–93.

Wagner, R. C., Sahlén, B., & Nettelbladt, U. (1999). What's story? Narration and comprehension in Swedish preschool children with language impairment. *Child Language Teaching and Therapy, 15,* 113–137.

Westby, C., Moore, C., & Roman, R. (2002). Reinventing the enemy's language: Developing narratives in native American children. *Linguistics and Education, 13,* 235–269.

World Health Organization. (1992). *The ICD-10 classification of mental and behavioral disorders: Clinical descriptions and diagnostic guidelines*. Geneva, Switzerland: Author.

Received June 3, 2008

Revision received November 19, 2008

Accepted January 23, 2010

DOI: 10.1044/1092-4388(2010/08-0113)

Contact author: Piret Soodla, Faculty of Education, University of Tartu, 1a Salme Street, Tartu 50103, Estonia. E-mail: piret.soodla@ut.ee.

Complimentary Author PDF: Not for Broad Dissemination

Appendix A. Stimulus material for the study.

Appendix B. Sample narratives in Estonian with translation into English and scoring for story information units.

	Narrative A: Control group	
		Setting: 2 points
Poiss ja tüdruk läksid kelgutama.	A boy and a girl (S) went sledding. (S)	
Tüdruk ütles ma lähen esimesena alla.	The girl said I am going down first.	
Poiss ütles mine siis.	The boy said go.	
Tüdruk lasigi alla.	The girl was sledding down. (IE)	
Tüdruk sõitis vasta puud.	The girl hit a tree. (IE)	Initiating event: 2 points
(Poiss) poiss ütles oh õudust ja sõitis ka alla.	(The boy) the boy said oh dear (IR) and was sledding down too. (A)	Internal response: 1 point
Siis ta lohutas tüdrukut.	Then he comforted the girl. (A)	
(Siis läksid) siis kuivatas pisarad ära pani mütsi pähe.	(Then they went) then he wiped away the tears (A) and put the cap on. (A)	Attempt: 4 points
Ja nad läksid koos jälle ülesse.	And they went up together again. (C)	Consequence: 1 point
Total score: 10 points		
	Narrative B: Clinical group	
(Tüdruk) tüdruk sõidab kelguga alla mäest.	(A girl) a girl is sledding down the hill. (IE)	
Tüdruk sai haiget.	The girl got hurt. (IE)	
Tüdruk nutab.	The girl is crying. (IE)	Initiating event: 3 points
Ja siis poiss võttis mütsi peast ära.	And then the boy took the cap off. (A)	Attempt: 1 point
Läksid ülesse.	They went up. (C)	Consequence: 1 point
Total score: 5 points		

Note. The underlined parts of sentences are scored as story information units. S = setting; IE = initiating event; IR = internal response; C = consequence.