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Narrative comprehension in simultaneously bilingual Finnish-Swedish and monolingual Finnish children

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Abstract

We analysed narrative comprehension in 5-to-6-year-old simultaneously bilingual Finnish-Swedish ($n = 16$) and monolingual Finnish children ($n = 16$) by using the Multilingual Assessment Instrument for Narratives (MAIN). We assessed mean total narrative comprehension scores for bilingual children in both of their languages and for monolingual children in Finnish, in both telling and retelling conditions. We compared bilingual and monolingual children's narrative comprehension in Finnish and analysed the association between comprehension and production. We also analysed the children's ability to answer different types of comprehension questions (i.e., questions probing goals, internal state terms, and questions requiring both the ability to draw inferences and to explain answers). We found no difference in total narrative comprehension scores for bilingual children between their two languages or between monolingual and bilingual children. This suggests language-independent narrative comprehension. We found no difference in narrative comprehension between telling and retelling and no correlation between narrative comprehension and production. However, we found a clear question type effect. Children performed better on questions probing goals or internal state terms, but questions that required both inferencing and ability to explain answers were very demanding. In conclusion, detailed analysis of narrative

comprehension provides knowledge on how children create a coherent understanding of a story and utilise information in the comprehension process.

Keywords: bilingualism, narrative comprehension, preschool children, MAIN

Introduction

The basis of narration is established from an early age when children grow up with narratives presented in various situations (e.g. joint conversations, play situations, shared book readings and television watching, Lynch et al., 2008; Paris & Paris, 2003). Narrative comprehension involves a group of interrelated cognitive skills that allow a child to build a coherent representation of a story (Johnston, 2008; Lynch et al., 2008; Oakhill & Cain, 2007). Thus, the ability to comprehend narratives requires processes such as understanding and encoding the events, conceptually connecting different parts of narrative using prior knowledge and making inferences. All these skills are also essential to children's later social and academic achievements, especially for reading achievements (Lynch et al., 2008; Paris & Paris, 2003). Thus, in order to prevent the possible long-term effects of poor narrative comprehension, its assessment is crucial. It provides multifaceted information about the child's linguistics and cognitive abilities. There is a scarcity of knowledge regarding bilingual children's narrative comprehension skills, since a majority of the studies have focused on production rather than comprehension (Gagarina et al., 2012). In addition, research on bilingual children's narrative comprehension has provided inconsistent results. Some studies have shown clear differences in bilingual children's narrative comprehension between the languages they are acquiring (Gutiérrez-Clellen, 2002; Roch, Florit & Levorato, 2016), whereas some studies indicate that acquiring several languages has no effect on the ability to comprehend narratives (Bohnacker, 2016; Kapalkova, Polišenská, Marková & Fenton, 2016; Lindgren, 2018). Thus, the

present study contributes to the previous literature by focusing on narrative comprehension in simultaneously bilingual Finnish-Swedish children and monolingual Finnish children between 5 and 6 years of age.

The base for narrative comprehension is the ability to connect mentally the different events of a story into a coherent whole. One crucial component in narrative comprehension is the role of causal connections among story events (e.g. physical and motivational causal connections; Kendeou et al., 2005; Lorch, Milich & Sanchez, 1998; Trabasso & van den Broek, 1985; Trabasso, Secco & van den Broek, 1984). That is, children have to determine the causes of a certain event and the effects of that event on the subsequent events in order to achieve a coherent understanding of a story. When children create these causal connections and make inferences between the events, they form mental network representations, which in turn direct children's comprehension of stories. When children are asked, for example, why-questions (e.g. why a certain event happened), they base their answers on these causal connections between events. Another important component in narrative comprehension is the organizational structure of the story, i.e. a hierarchically and causally organized structure of episodes. An episode consists of an entire behavioural sequence where units such as initiating events, goals, attempts, outcomes and a character's inner feelings are indicated (Stein & Glenn, 1979; Trabasso et al., 1984). The character's goal arises from story events and refers to states within the character, i.e. the desires and intentions of the character. A given goal may in turn motivate other action sequences and outcomes.

Narrative comprehension can be assessed through picture comprehension, listening comprehension or reading comprehension (Paris & Paris, 2003). According to a number of studies, similar processes seem to contribute to narrative comprehension across different domains (e.g. Kendeou et

al., 2005; Lynch et al., 2008; van den Broek, 2005) suggesting that narrative comprehension is not domain specific. There might be differences, however, in what children comprehend through different domains. Through picture comprehension and listening comprehension it is possible to assess narrative comprehension skills independent of decoding skills as opposed to reading comprehension (Paris & Paris, 2003). The advantage of using pictorial stories in the assessment of the narrative comprehension of young children lies in the fact that children are often used to looking at pictures/pictorial stories, they are fun to look at, but still require a similar kind of cognitive skills as text-based stories. Assessment of narrative comprehension with pictorial stories minimizes the confounding factor of decoding skills and provides an opportunity to assess cognitive processes and linguistic abilities that are important for children's early reading development. Such assessment methods are highly needed to complement traditional assessment based on reading skills. In the present study, narrative comprehension of 5- to 6-year-old children was assessed with pictorial stimuli.

There has been a considerable amount of research on narrative comprehension in adults and older school-aged children, but research on preschool-aged children and early grades of elementary school-aged children is relatively rare. Previous research has shown that children's performance in narrative comprehension improves with age (e.g. Curenton, 2011; Hayward, Schneider & Gillam, 2009; Lynch et al., 2008; Paris & Paris, 2003), and there seem to be no gender differences in the ability to answer the comprehension questions (e.g. Lynch et al., 2008). In an itemized analysis of children's ability to answer different questions probing narrative comprehension, Curenton (2011) found that children performed better on questions addressing story characters' actions rather than their motives or intentions. Furthermore, van den Broek et al. (2005) noted that very young children are already able to identify connections between concrete and external events, whereas older children can increasingly identify connections among abstract and internal events (e.g. goals and

feelings of characters). In addition, young children's inference making may be limited to identifying connections between individual events, whereas older children can connect groups of events such as episodes.

As regards the associations among early narrative comprehension skills, basic language and literacy skills and later reading comprehension skills, results are somewhat conflicting. In many studies, vocabulary has been related to narrative comprehension (Kendeou et al., 2005; Lepola, Lynch, Laakkonen, Silvén & Niemi, 2012; Potocki, Ecalle & Magnan, 2013). However, van den Broek et al. (2005) found that early narrative comprehension skills are to a large extent independent from vocabulary. In addition, morphological and syntactic knowledge and sentence comprehension skills (Potocki et al. 2013) as well as sentence memory (Lepola et al. 2012) may predict narrative comprehension. Narrative comprehension may also be associated with some prereading skills such as phoneme segmentation (Paris & Paris, 2003). Some studies, however, have shown that comprehension of narratives develops independently from basic literacy skills such as phonemic awareness and letter and word identification (Kendeou et al., 2005; Lynch et al., 2008; van den Broek et al., 2005). Early narrative comprehension skills have also predicted later reading comprehension skills (e.g. Kendeou et al., 2005; van den Broek et al., 2005). Thus, assessment of narrative comprehension during preschool age gives important knowledge on children's competence to be shared, e.g. with parents and school personnel, and to be considered during school-start/schooling.

Research on narrative comprehension in bilingual children is scarce. Gutiérrez-Clellen (2002) has found that Spanish-English bilingual children (L1 Spanish and L2 English; age from 7 to 8 years; coming mainly from Mexican American background) exhibit greater comprehension of English

than of Spanish stories and greater variability in the Spanish stories compared to the English stories. During the last few years, some studies using the recently developed Multilingual Assessment Instrument for Narratives (MAIN; Gagarina et al., 2012, 2015) have also addressed narrative comprehension of bilingual children. Studies on groups of mainly simultaneously Swedish-English, Swedish-German, or Swedish-Turkish and Turkish-German bilingual children have shown a clear age effect (Bohnacker, 2016; Lindgren, 2018; Maviş, Tuncer & Gagarina, 2016), but no effect of language for narrative comprehension (Bohnacker, 2016; Lindgren, 2018). In addition, Maviş et al. (2016) found a task effect (i.e. children performed better in the “tell-after model” than in the “tell-no model” condition), but no gender effect. A study by Otwinowska, Mieszkowska, Białecka-Pikul, Opacki and Haman (2018) on Polish-English bilingual children (exposed to English before the age of four; $M = 12$ months, range 0–48 months) showed a clear task effect (i.e. better comprehension in retelling than in telling conditions). They also showed a clear language effect with children performing better in English (i.e. the language of schooling and peer-to-peer interaction). The study by Roch et al. (2016) on sequentially bilingual Italian-English children showed a significant age and task effect (i.e. children scored higher in the story retelling task than in the telling task), but also a language effect (i.e. comprehension of L1 was better than L2). The study by Kapalková et al. (2016) on sequentially bilingual Slovak-English children, however, did not find any significant effect of language for narrative comprehension. Furthermore, deeper analysis regarding children’s ability to comprehend specific macrostructural components (e.g. goals or internal states as initiating events) has shown that simultaneously bilingual children understand goals and internal states as initiating events well, regardless of language (Bohnacker, 2016). In contrast, a study on sequentially bilingual children showed that goals were the least well-comprehended components, while initiating events and reactions were clearly easier components for the children to comprehend (Kapalková et al., 2016).

Relatively little is known about young bilingual and monolingual children's comprehension of narratives. Studying narrative comprehension provides a unique opportunity to assess children's understanding of complex events. Analysis of narrative comprehension may also serve as a valuable contribution in the identification of developmental language delay or disorder and even early reading difficulties (cf. Boerma, Leseman, Timmermeister, Wijnen & Blom, 2016). In the assessment of bilingual children, uniform and parallel assessment materials in both their languages are important in order to avoid biased results due to learning effect.

Thus, the purpose of the present study was to analyse narrative comprehension in Finnish-Swedish bilingual and Finnish monolingual children. The specific research questions were as follows: 1) Are there differences in total scores in narrative comprehension in Finnish–Swedish bilingual children in both their languages and in two elicitation tasks (telling and retelling)? 2) Are there differences in total scores in narrative comprehension between Finnish-Swedish bilingual and Finnish monolingual children? 3) Is there an association between narrative comprehension and production? 4) Are there differences in children's abilities to answer narrative comprehension questions probing different macrostructure components? In the present study, the Multilingual Assessment Instrument for Narratives (MAIN; Gagarina et al., 2012, 2015; Kunnari & Välimaa, 2012) was applied, since it has been proven to be cross-culturally robust and it contains parallel elicitation tasks for use in several languages.

Method

Participants

A total of 32 children in an age range from 5;0 to 6;7 years [years; months] participated in this study: 16 simultaneously bilingual Finnish-Swedish children (bilingual group) and 16 monolingual Finnish children (monolingual group). The two groups were matched on age and gender. The parents completed a background questionnaire on demographic factors, on the patterns of language use in their family and the child's perceived comprehension and production skills in everyday situations for both languages (Gagarina et al., 2012). According to the parental questionnaires, the children were typically developing and had no history of speech or language disorders or use of speech therapy services. The children came from comparable socioeconomic backgrounds (i.e. about 90% of the parents of the children had higher education). The age range from 5;0 to 6;7 years was chosen, because according to the existing literature, narrative abilities are expected to develop clearly during this age (e.g. Muñoz, Gillam, Peña, & Gulley-Faehnle, 2003; Price, Roberts, & Jackson, 2006; Schneider, Hayward, & Dubé, 2006). From the sociocultural perspective, it is highly relevant to investigate children's narrative abilities at this age, that is, before they begin their formal education. Compulsory education (grade 1) starts at the age of 7 in Finland.

The bilingual group consisted of 16 simultaneously bilingual children (8 boys, 8 girls, mean age 5;8 years, $SD = 0.5$, min. 5;0, max. 6;6) recruited from bilingual Finnish-Swedish kindergartens. The bilingual children came from families where both languages had been spoken to them from birth. The input of Finnish and Swedish was approximately equal at the time of the study as assessed by the parents. The bilingual children were received a 46% ($SD = 17.7$) language input in Finnish and a 54% ($SD = 17.7$) input in Swedish. For 62% of the bilingual children, the overall daily exposure of both languages was equal and balanced. For the present study, Finnish and Swedish were chosen because they are the official national languages in Finland. Speakers of Swedish comprise only approximately 5.2% of the total population (Statistics Finland, 2018).

The monolingual group consisted of 16 monolingual Finnish-speaking children (8 boys, 8 girls, mean age 5;9 years, $SD = 0.6$, min. 5;1, max. 6;7) recruited from monolingual Finnish-speaking kindergartens. They came from homes where only Finnish was spoken. The monolingual group was matched with the bilinguals on the age of the child (independent samples t test, $t = -0.115$, $p = .91$) and gender (equal number of boys and girls in both groups). Monolingual Swedish-speaking children were not included in this study, because they would have been difficult to recruit due to the low ratio of Swedish-speaking population (Statistics Finland, 2018).

Procedure and design

Narrative comprehension and associations between narrative comprehension and production were assessed using the Finnish and the Swedish versions of MAIN (Bohnacker, 2012; Gagarina et al. 2012, 2015; Kunnari & Välimaa, 2012). The MAIN includes narrative production and comprehension tasks. Narrative production is assessed with six-picture sequences matched in the overall story and episode structure in telling and retelling situations. Each story consists of a setting and three short episodes made up of a goal-attempt-outcome (GAO) sequence with comparable complexity, and internal state terms (ISTs) as initiating events or protagonists' reactions. Following the telling and retelling situations, the experimenter asks ten comprehension questions, while the whole story is visible to the child. The questions target the children's overall story comprehension and their inferencing ability concerning the thoughts, feelings, and intentions (goals) of the protagonists. Three questions probe the character's goals (e.g. *Why does the fox leap forward?*), three questions probe internal state terms as initiating events and reactions of the protagonists (e.g. *How does the fox feel?*), and four questions probe the ability to draw inferences and explain the answers (e.g. *Why do you think the fox is feeling bad/scared/hungry/disappointed etc.?*). Thus, the comprehension questions do not measure the children's ability to recall the story, but their ability to create causal connections and make inferences.

In the present study, each child was individually assessed in a quiet room at their kindergarten and the sessions were audio-recorded using an Olympus LS-11 recorder. At the beginning of the assessment session, the child was instructed to choose a story from one of three envelopes and not to let the examiner see the selected story. This controlled for effects of shared knowledge and joint attention. All of the stories were presented in a foldout fashion, initially showing the child the whole story with all six pictures. The examiner sat opposite to the child folding out the pictures so that only the child was able to see them. After this, the child was instructed to tell/retell the story, during which the pictures were unfolded in sets of two. The assessment procedure followed the same principles for telling and retelling, except for retelling condition, where the examiner first told the story to the child and then asked the child to retell it. After the child had told or retold the story, the child was asked comprehension questions. The examiner initiated narrative comprehension assessment by saying “Now I will ask you some questions about the story”. The first question was always a warm-up question “Did you like the story?” and it was not scored. Thereafter, the examiner proceeded according to the MAIN protocol.

For the bilingual group, narrative comprehension was assessed with two tasks (telling and retelling) in each language. The order of presentation was counterbalanced with regard to language (Finnish and Swedish) and the story (i.e., Baby Birds and Baby Goats for the telling task; Cat and Dog for the retelling task). For the monolingual group, narrative comprehension was assessed with two tasks (telling and retelling). For them, the order of presentation was counterbalanced with regard to the story. Both groups always began the assessment session with one of the telling tasks. The bilingual group was assessed by one (native/near native) bilingual examiner and the monolingual group by one native monolingual examiner. Both examiners spoke only in the

language of the assessment during assessment session. The testing interval between the two assessment sessions of the bilingual children (Finnish/Swedish) was approximately 1 week.

The children's answers to comprehension questions were transcribed and scored using the MAIN protocol (Bohnacker, 2012; Gagarina et al., 2012, 2015; Kunnari & Välimaa, 2012). The Swedish narratives were scored by the Swedish-speaking examiner and the Finnish narratives by the Finnish-speaking examiner. Children were given 1 point for each correct answer (maximum score = 10 per story). The decision on children's correct/incorrect responses was made based on more than 500 children's responses acquired during the developmental process of the MAIN (Gagarina et al., 2012, 2015). For each story, examples of correct/incorrect responses were given in the questions and scoring sheet of narrative comprehension (see Gagarina et al., 2012, 2015). Ten per cent of the randomly selected comprehension question responses were scored by a second independent rater. Reliability was calculated by two different raters, with respect to children's answers to every question probing narrative comprehension. The point-to-point agreement for the rating was 96.7%. Narrative production, i.e. the story structure scores of the children, was drawn from previous narrative production analysis (cf. Kunnari et al., 2016). The production of story structure was analysed using the guidelines described in Gagarina et al. 2012 and 2015. The number of story structure elements was calculated: setting and an episode consisting of an internal state term (IST) as an initiating event, goal (G), attempt (A), outcome (O), and an IST as a reaction. In each story, children were awarded points for the setting statement and for each statement referring to any part of the episode. All of the stories included three episodes, so the children were awarded a maximum of 17 points for the production of story structure.

Statistical analysis

Mean total scores and standard deviations of narrative comprehension were first analysed for the bilingual group in Finnish and in Swedish and for the monolingual group in Finnish for telling and retelling conditions. Because narrative comprehension scores did not show normal distribution, nonparametric statistical tests were used systematically in the analysis.

To answer our first research question on narrative comprehension of the bilingual group in both their languages, total scores in narrative comprehension in Finnish and in Swedish were compared in each of the conditions by using the Wilcoxon Signed Ranks Test.

To answer our second research question on narrative comprehension of the bilingual and the monolingual groups in Finnish, the total narrative comprehension scores were compared using the Mann-Whitney U-test. The Wilcoxon Signed Ranks Test was conducted to analyse the differences between telling and retelling conditions.

To answer our third research question on associations between narrative comprehension and production, Spearman's rank order correlation coefficients were used to explore the associations between narrative comprehension and production in Finnish and in Swedish for the bilingual group and in Finnish for the monolingual group. Before statistical analysis, the raw scores for narrative comprehension (max. 10 points) and production (max. 17 points) were transformed into percentage scale (i.e., maximum score gave the percentage of 100 %). This made the different scales comparable.

To answer our fourth research question on children's ability to answer questions probing comprehension of goals (maximum score = 3), internal state terms as initiating events and reactions of the protagonists (maximum score = 3), and to draw inferences and explain their answers (maximum score = 4), the total number of correct answers to these three types of narrative comprehension questions was analysed separately for both bilingual and monolingual groups. To analyse the ability of the bilingual children to answer the three types of narrative comprehension questions in both their languages, the Related-samples Friedman's two-way analysis of variance by ranks with the question as the within-subjects variable (i.e. goal; IST as initiating event or reaction; inferences and explanations) was conducted. Before statistical analysis, the raw scores were transformed into ratios (i.e. child's raw score divided by the maximum score for each question type) to make the scoring equal for the different question types. In order to control Type 1 error, adjustments for multiple comparisons were made using a Bonferroni method with $0.05/n$ as the threshold for significance. In the present study, n is the number of comparisons between the different question types. Similar analysis was conducted for the monolingual children in Finnish narratives. Differences between the bilingual and the monolingual groups in their ability to answer the three narrative comprehension question types in Finnish narratives were analysed using the Kruskal-Wallis Test with the question as a within-subjects variable (goal; IST as initiating event or reaction; inferences and explanations, INF&E) and the language group as a between-subjects variable (bilingual vs. monolingual).

Results

Narrative comprehension: total score on comprehension questions

Table 1 illustrates mean comprehension scores for story telling and retelling tasks for the bilingual group in Finnish and in Swedish and for the monolingual group in Finnish. When narrative comprehension of the bilingual group was compared in both their languages, Wilcoxon Signed Ranks Test showed no differences between the total comprehension scores in Finnish and in Swedish either in telling ($Z = 34.5, p = .147$) or in retelling conditions ($Z = 26.5, p = .562$). Next, the two task types telling and retelling were compared for the bilingual group in both their languages. The results showed that there were no differences in the comprehension of Finnish ($Z = 50.5, p = .118$) or Swedish ($Z = 43.5, p = .572$) narratives between telling and retelling conditions.

When narrative comprehension in Finnish was compared between the bilingual and the monolingual groups, Mann-Whitney U-test showed no differences between the two groups in telling ($U = 159.0, p = .233$) or in retelling conditions ($U = 114.5, p = .582$) (Table 1). When narrative comprehension of the monolingual group was compared between telling and retelling conditions, Wilcoxon Signed Ranks Test showed no differences between the two conditions ($Z = 44.0, p = .590$).

Table 1. Means and standard deviations (SD, in brackets) for comprehension scores (max. 10) of the bilingual children in Finnish and in Swedish and for the monolingual children in Finnish.

	Telling		Retelling	
	Finnish	Swedish	Finnish	Swedish
Bilingual group	6.3 (1.7)	5.2 (2.5)	5.8 (1.3)	5.6 (1.4)
Monolingual group	5.5 (2.1)		5.9 (1.6)	

Associations between narrative comprehension and production

To analyse associations between narrative comprehension and narrative production for the bilingual group in both their languages, and for the monolingual group in Finnish, Spearman rank order correlation coefficients were calculated. To enable the analysis of the associations between narrative comprehension and production, narrative production results were reproduced from previous analyses (see Kunnari et al., 2016). The results showed a mean score for the bilingual group of 4.6 (SD = 1.9) in the story telling task in Finnish and 5.4 (SD = 2.3) in the story telling task in Swedish. They scored on average 6.6 (SD 1.8.) in the retelling task in Finnish and 6.4 (SD = 2.3) in the retelling task in Swedish. The monolingual group scored on average 6.9 (SD = 1.7) in the telling task in Finnish and 7.6 (SD = 2.1) in the retelling task in Finnish. As demonstrated in Table 2, no significant correlations existed for the bilingual group in Swedish or in Finnish narrative comprehension (total score) and production (story structure, i.e. number of macrostructure elements) in either story telling or retelling conditions. The same holds true for the monolingual group in Finnish narrative comprehension and production and in both task types (telling and retelling).

Table 2. Associations (Spearman's rank order correlation coefficients; *p*-values in brackets) between narrative comprehension and narrative production for the bilingual children in Finnish and Swedish, and for the monolingual children in Finnish in telling and in retelling conditions.

				Swedish		Finnish	
				Telling	Retelling	Telling	Retelling
				Production	Production	Production	Production
Bilinguals	Swedish	Telling	Comp	.49 (.052)			
		Retelling	Comp	.09 (.721)			
	Finnish	Telling	Comp	.48 (.063)			
		Retelling	Comp	.35 (.191)			

Monolinguals	Finnish	Telling	Comp	.18 (.517)
		Retelling	Comp	.05 (.868)

Note. Comp = Comprehension score.

Children's performance on the different comprehension questions

To gain knowledge on narrative comprehension of the bilingual children, their ability to answer the different types of narrative comprehension questions in both their languages was analysed using the Related-Samples Friedman's two-way analysis of variance by ranks (Table 3 provides descriptive statistics). Results revealed a significant question type effect for the bilingual group in both their languages. Namely, bilingual children's performance on questions probing goals (Mean rank = 2.56) in Finnish narratives in telling conditions exceeded their performance on questions requiring both inferencing and the ability to explain the answers (Mean rank = 1.13) $F_R = 20.13$, $df = 2$, $p < .001$. In addition, their performance on questions probing ISTs (Mean rank = 2.31) exceeded their performance on questions requiring both inferencing and the ability to explain the answers. This question type effect was also statistically significant after adjustment for multiple comparisons using a Bonferroni adjustment of $0.05/3 = 0.017$ as the threshold for significance ($p = .018$). However, there was no significant difference in children's performance between questions probing ISTs and goals. In retelling condition, the results showed quite a similar pattern. Bilingual children's performance on questions probing goals (Mean rank = 2.81) and on questions probing ISTs (Mean rank = 2.13) exceeded the performance on questions requiring both inferencing and the ability to explain the answers (Mean rank = 1.06) $F_R = 25.67$, $df = 2$, $p < .001$. These differences were also statistically significant after adjustment for multiple comparisons ($p = .001$). However, there was no difference in children's performance between questions probing goals and ISTs.

Table 3. Means and standard deviations (SD, in brackets) for children's ability to answer questions probing comprehension of goals (maximum score = 3), internal state terms as initiating events and reactions of the protagonists (ISTs) (maximum score = 3) and to draw inferences and explain their answers (Inf&E) (maximum score = 4).

	Telling		Retelling	
	Finnish	Swedish	Finnish	Swedish
Bilinguals				
Goal	2.5 (0.7)	2.2 (1.0)	2.6 (0.6)	2.2 (0.8)
ISTs	2.1 (0.7)	1.7 (0.9)	1.8 (0.4)	1.9 (0.5)
Inf&E	1.7 (0.8)	1.3 (1.1)	1.4 (0.8)	1.6 (0.7)
Monolinguals				
Goal	2.0 (0.7)		2.9 (0.3)	
ISTs	2.1 (1.0)		1.6 (0.7)	
Inf&E	1.4 (1.0)		1.4 (0.8)	

In Swedish narrative comprehension, the question type effect was also clear. In the telling task, bilingual children performed better on questions probing goals (Mean rank = 2.56) and on questions probing ISTs (Mean rank = 2.31) than on questions requiring both inferencing and the ability to explain the answers (Mean rank = 1.13) $F_R = 21.19$, $df = 2$, $p < .001$. The question type effect was statistically significant even after adjustment for multiple comparisons ($p < .001$). No differences were found between questions probing goals and ISTs. Again, similar question type effect was evident in the Swedish retelling task. Children performed better on questions probing goals (Mean rank = 2.47) and on questions probing ISTs (Mean rank = 2.34) than on questions requiring both

inferencing and the ability to explain the answers (Mean rank = 1.19) $F_R = 17.32$, $df = 2$, $p < .001$).

There were no differences between questions probing goals and ISTs.

Monolingual children's ability to answer the different narrative comprehension questions was analysed in Finnish narratives in telling and retelling conditions. The results showed a question type effect, but the patterns were somewhat different from bilingual children. In telling condition, monolingual children performed better on questions probing goals (Mean rank = 2.28) and ISTs as initiating events or reactions of the protagonists (Mean rank = 2.53) than on questions requiring both inferencing and the ability to explain the answers (Mean rank = 1.19) $F_R = 18.35$, $df = 2$, $p < .001$. After adjustment for multiple comparisons, the difference was also statistically significant. Quite in line with the bilingual children, there were no statistically significant differences in monolingual children's abilities to answer questions probing goals or ISTs. However, the retelling task showed somewhat different results. After adjustment for multiple correlations, there were no differences in children's performance on questions probing goals (Mean rank = 2.97) and ISTs (Mean rank = 2.00), or between questions probing ISTs and questions requiring both inferencing and the ability to explain the answers. The only difference remained between goals and those that required the ability to explain the answers. Monolingual children's performance on questions probing goals (Mean rank = 2.97) exceeded the performance on questions requiring both inferencing and the ability to explain the answers (Mean rank = 1.03), $F_R = 31.0$, $df = 2$, $p < .001$. This difference was significant also after adjustment for multiple comparisons.

The possible differences in the ability of the bilingual group and the monolingual group to answer the three types of narrative comprehension questions in Finnish narratives were also analysed in order to consider the effect of language group on children's performance. Results revealed that

language group (bilingual vs. monolingual) had mainly no effect for children's performance on questions probing ISTs as initiating events or reactions of the protagonists ($X^2(1) = .17, p = .685$) or questions requiring both inferencing and explaining the answers ($X^2(1) = .77, p = .379$) in telling conditions. The only difference was their performance on questions probing goals: the bilingual children performed better than the monolingual children did ($X^2(1) = 4.28, p = .039$). In retelling condition, there were no differences between bilingual and monolingual children in their performance on questions probing goals ($X^2(1) = 3.26, p = .071$), ISTs as initiating events or reactions of the protagonists ($X^2(1) = .29, p = .588$) or inferencing and explaining the answers ($X^2(1) = .08, p = .781$). This indicates that children's performance differences in the three types of comprehension questions were not due to bilingual condition.

Discussion

This study examined narrative comprehension of simultaneously bilingual Finnish-Swedish and monolingual Finnish 5- to 6-year-old children. Children's narrative comprehension was compared for language (Finnish vs. Swedish), group (monolinguals vs. bilinguals), and task (telling vs. retelling) and associations between narrative comprehension and production were analysed. In addition, the study analysed children's ability to answer the three types of narrative comprehension questions (i.e. questions probing goals, internal state terms as initiating events and reactions, and questions requiring the ability to draw inferences and explain the answers). The study showed no differences in narrative comprehension of simultaneously bilingual Finnish-Swedish children between their two languages for either telling or retelling conditions. This study showed no differences between monolingual and bilingual children in Finnish narrative comprehension and no differences between the two tasks. Narrative comprehension seemed not to be associated with

narrative production. Instead, this study showed significant differences in the children's ability to answer different narrative comprehension questions. Questions probing comprehension of goals and ISTs were easiest for both groups of children. Conversely, questions that required both inferencing and the ability to explain the answers were the most difficult for both groups of children.

Language comparison. The finding that there were no statistically significant differences in narrative comprehension in simultaneously bilingual Finnish-Swedish children between their two languages for either telling or retelling conditions suggests a fairly balanced competence in both languages. As such, our results imply that at the age of 5 to 6 years, these bilingual children had already established and were using an underlying mental schema for narrative comprehension, and were able to convey this in their answers quite in line with monolingual children (cf., Shapiro & Hudson, 1991; Stein & Albro, 1997; Trabasso & Rodkin, 1994; Trabasso & Stein, 1994). Our results accord with those by Bohnacker (2016) and Lindgren (2018), who found no language effect for narrative comprehension in mainly simultaneously bilingual Swedish-English, Swedish-German and Swedish-Turkish children. In addition, Kapalková et al. (2016) reported no language effect for narrative comprehension in sequentially bilingual Slovak-English children. The results of the current study are somewhat in contrast with the findings of Gutiérrez-Clellen (2002) and Roch et al. (2016) who reported a clear language effect. Gutiérrez-Clellen (2002) showed that sequentially bilingual children exhibited better narrative comprehension in L2 and Roch et al. (2016) reported better comprehension in L1. These differences in results suggest different balance between the two languages of the bilingual children. Indeed, in Roch et al. (2016), the children were sequentially bilingual Italian-English children. Since the same methodology was used in Roch et al. and in the present study, the contrasting results most likely arise from the different balance between the two languages (i.e. simultaneous vs. sequential bilingualism). The results of this study confirm the recent findings that narrative macrostructure is a relatively unbiased measure to assess language

abilities of bilingual children (e.g. Boerma et al., 2016; Hipfner-Boucher et al., 2015). However, since some studies have shown a language effect for narrative macrostructure (e.g. Gutiérrez-Clellen, 2002; Roch et al., 2016), it is reasonable to pose a question about the level of language proficiency needed for conveying the elements of narrative macrostructure with the languages the child is using.

Group comparison. In our study, no group effect (bilingual vs. monolingual) was found for narrative comprehension among 5- to 6-year-old bilingual and monolingual children. In many of the previous studies bilingual children's narrative comprehension has been analysed in both of the languages the children were acquiring (Bohnacker, 2016; Gutiérrez-Clellen, 2002; Lindgren, 2018; Roch et. al., 2016). Only the study by Lindgren (2018) provides a comparison between monolingual and bilingual children. In her study, no differences were found between Swedish monolingual and Swedish-German and Swedish-Turkish bilingual children in three out of four narrative tasks. In one of the tasks (Baby Goats), a significant difference was evident between the three language groups. The Swedish-Turkish bilinguals performed lower than the two other language groups. As such, our findings are somewhat in contrast with the one by Lindgren (2018).

One possible explanation for the lack of a difference in narrative comprehension between the bilingual and the monolingual children of the present study may stem from the fact that the simultaneously bilingual children could transfer their knowledge on narrative macrostructure between both their languages (Finnish and Swedish), because the macrostructure is similar across the languages (cf., Squires et al, 2014). In narratives, the bilinguals may share a conceptual base across both languages. Bearing in mind that the bilingual children of this study were all simultaneously bilingual, one could hypothesise that such transfer occurs relatively early in

development diminishing the possible differences between bilingual and monolingual children. Another possible explanation may lie in the cultural similarities between Finnish-Swedish bilinguals and Finnish monolinguals. They reside in relatively similar cultural backgrounds, day care and preschool systems, where the story telling traditions are quite parallel providing the children with comparable model of narration and enabling them to comprehend the narrative macrostructure in a comparable manner in both of the languages (cf., Mäkinen, Gabbatore, Loukusa, Kunnari & Schneider, 2019). Thus, the bilingual children's competence to utilise the mental schema of narratives in Finnish seems to be as proficient as the ability of the monolingual children (cf. Shapiro & Hudson, 1991; Stein & Albro, 1997; Trabasso & Rodkin, 1994; Trabasso & Stein, 1994). Detailed knowledge on the possible differences between bilingual and monolingual children's narrative comprehension abilities in the language used in education (e.g. English vs. Spanish; Finnish vs. Swedish; Swedish vs. Turkish) may provide essential implications for children's later social and academic achievements, especially for reading achievements (Lynch et al., 2008; Paris & Paris, 2003). However, if such a difference is discovered early enough, support may be given to ease children's school achievement and literacy.

Associations between narrative comprehension and production. No significant correlations existed between comprehension and production for the bilingual and monolingual children in either story telling or retelling conditions. This finding is in contrast with Roch et al. (2016) who found some correlation between narrative comprehension and production of Italian-English sequentially bilingual children, especially in English narratives. In addition, some earlier studies on monolingual and bilingual children have shown at least some association (e.g. Cain, 2003; Roch et al., 2016). However, in our study, for bilingual children in the telling condition in Swedish and in Finnish (see Table 2), the values of correlation coefficient were close to the critical values of moderate and statistically significant association for a sample size of 16 participants (r -values close to 0.5; p -

values close to 0.05; e.g. Nummenmaa, 2009). The analysis nevertheless failed to reach statistical significance. One can ask whether the statistical analysis would have shown slightly different results with a larger sample size. In addition, it is important to note that the values of correlation coefficient were close to critical values of statistical significance in telling condition, but not in retelling condition. In a retelling task, the ability to answer narrative comprehension questions may pose demands also on children's memory, because they have heard the model story before answering the comprehension questions. Indeed, association between children's working memory and narrative comprehension has been shown in some previous studies (e.g. Dodwell & Bavin, 2008). Thus, more research is warranted in order to analyse the associations between narrative comprehension and production with slightly larger sample sizes, and in both the task types telling and retelling.

Task comparison. In our study, narrative comprehension was analysed separately in telling and retelling conditions. Such task comparison was enabled by the developmental work of MAIN (Gagarina et al., 2012; 2015), which includes parallel stories to be used in these two task types and in both of the languages the child is acquiring. Our results showed that there were no differences in the comprehension of narratives in telling or retelling conditions, for bilingual or monolingual children. There is scarcity in the current literature on the comparison of narrative comprehension between the two task types (Maviş et al., 2016; Roch et al., 2016). Our results are in concord with those of Maviş et al., (2016) who also found no difference in narrative comprehension between these two task types in simultaneously bilingual Turkish-German children. In contrast, Roch et al. (2016) showed that the sequentially bilingual children of their study performed better in the story retelling than in the telling task. This difference was evident in narrative comprehension as well as in production. One possible explanation for the differences may lie in the bilingual status of the children. In the present study and the one by Maviş et al., (2016), children were simultaneously

bilingual. Thus, the results indicate that bilingual children's narrative comprehension in both languages may develop equally well, especially when children are acquiring both languages simultaneously. Indeed, in the study by Roch et al. (2016), children were sequentially bilingual and they scored lower especially in L2 (English) narrative comprehension in the telling condition. In narrative comprehension in telling condition, children do not receive a model story narrated by the experimenter as in the retelling condition, before the narrative comprehension questions are asked. It may well be that story telling and retelling tasks require different processing load, and in a retelling task children may take advantage of the previously heard model story. Thus, the contradictory results of possible differences in narrative comprehension between the two task types (telling and retelling) highlight the need to assess narrative comprehension in both conditions and the role of working memory in narrative comprehension.

Comprehension of different macrostructural components. To gain knowledge of children's ability to answer questions probing the different macrostructural components, children's answers to the questions were analysed in more detail. Results revealed a significant question effect for the bilingual group in Finnish and Swedish, and for the monolingual children in Finnish. Questions probing comprehension of goals (e.g. *Why does the fox leap forward?*) proved to be the easiest comprehension questions for both groups of children. Moreover, questions probing ISTs were also relatively easy for the children, even though they proved to be somewhat more difficult than questions probing goals. Our results accord with the ones by Bohnacker (2016) who also found that simultaneously bilingual children understood goals and internal states as initiating events well, regardless of language. Our results also partly accord with those by Curenton (2011) who found that the monolingual children in her study performed better on questions addressing the character's actions versus his motives/intentions.

One very interesting finding of the present study was that questions in which children were required both to draw inferences and to explain their own answers (e.g. *Why do you think the fox is feeling bad?*) were the most demanding comprehension questions for both groups of children. The 5-6-year old children of this study could be able to answer the questions probing ISTs as reaction correctly (e.g. *How does the fox feel?*) but could fail to explain his/her answer (e.g. *Why do you think the fox is feeling bad?*). These questions require both the ability to understand causal relations between events and the ability to explain them. It has previously been shown that consciousness questions (i.e. questions addressing a character's beliefs) may be demanding (e.g. Curenton, 2011). It has also been shown that giving explanations about inferences made during interpretation is a very demanding task for children (Letts & Leinonen, 2001). Explaining one's own answers requires many cognitive skills, such as an ability to e.g., distinguish between cause and result, and between pieces of evidence and conclusion. Thus, explanations can reveal children's awareness of the information that they have utilised in the comprehension process. According to recent findings, the ability to explain one's answers develops clearly during preschool and elementary school. For example, 5-6-year-old children have been able to explain approximately 70% of their answers correctly, and 8-year-old children already 80% (Loukusa, Mäkinen, Gabbatore, Laukkanen-Nevala & Leinonen, 2017). In future, detailed analysis of children's incorrect answers to comprehension questions could provide additional data about the development of narrative comprehension and shed light on the children's awareness of the information used in comprehension.

Conclusions

The present study highlights that MAIN (Bohnacker, 2016; Gagarina et al., 2012, 2015; Kunnari & Välimaa, 2012) is a functional, easy and convenient tool in the assessment of narrative comprehension both in monolingual and bilingual children. It provides multifaceted information on narrative comprehension. Thus, it may serve as a complementary assessment tool in the

identification of language competence, language delay or even language disorder (cf., Boerma et al., 2016). The present study provides some evidence that narrative comprehension is largely language-independent in cases where children are acquiring both languages simultaneously from birth and show equal narrative comprehension competence in both of their languages. This may also indicate fairly balanced bilingualism. However, further studies with larger sample sizes are warranted to confirm this finding. Because comprehension skills are essential to children's later social and academic achievements, especially for reading achievements (Johnston, 2008; Lynch et al., 2008; Oakhill & Cain, 2007), information on narrative comprehension abilities of bilingual children in both their languages during preschool years is essential even in the case of simultaneous bilingualism. Only through assessment, can we be sure of the level of narrative comprehension competence and offer support if needed.

In addition, the present study implies that questions probing different elements of episodes (e.g. goals) and questions that require inferencing, or require both the ability to draw inferences and to explain one's answers, pose different requirements for the narrative comprehension competence and inferencing skills. Furthermore, questions that require the ability to explain one's own answers can also reveal children's awareness of the information that they have utilised in the comprehension process. Thus, detailed analysis of children's narrative comprehension competence gives in depth knowledge of how children create causal connections, make inferences between events, create a coherent understanding of a story, and utilise information in the comprehension process.

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