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Retelling a model story improves the narratives of Polish-English bilingual children

Agnieszka Otwinowska [a*], Karolina Mieszkowska [b*], Marta Białecka-Pikul [c], Marcin Opacki [a] and Ewa Haman [b]

aInstitute of English Studies, University of Warsaw, Warszawa, Poland; bFaculty of Psychology, University of Warsaw, Warszawa, Poland; cInstitute of Psychology, Jagiellonian University, Kraków, Poland

ABSTRACT

Reading and telling stories to children improves their narrative skills, which is well-documented for monolinguals, but not for bilinguals. We investigated whether bilingual narratives improve when the child is provided with a model story. We studied the narratives of Polish-English bilingual children ($n = 75$, mean age 5;7 years; months) raised in the UK. We elicited narratives through picture stories in two modes: told spontaneously and retold after a model provided by an adult experimenter. The bilinguals told and retold stories in Polish and English. The study combined a within-subject design, comparing the bilinguals' two languages, and a between-subject design, comparing the stories told and retold in Polish by the bilinguals and by Polish age-matched monolinguals ($n = 75$). We investigated whether retelling might improve bilingual and monolingual storytelling to the same extent. In the stories, we assessed both the macrostructure (e.g. story structure and answered comprehension questions) and microstructure (e.g. type-token ratio). We found a positive effect of retelling for the macrostructure in both monolinguals and bilinguals (regardless of the language). As for the microstructure, when retelling, children told longer stories, regardless of the language (Polish, English) and group (bilingual, monolingual). We argue that retelling stories improves the narrative skills of bilinguals.

Introduction

Children's narrative abilities, understood as the capacity to tell and understand a coherent story, develop through interaction with others: children and adults alike. Narrative skills grow during spontaneous storytelling and story-acting with siblings and peers (Nicolopoulou 2002; Nicolopoulou et al. 2014), and importantly, are fostered through interactions with parents and care-givers who provide the child with adequate narrative models (Clarke-Stewart and Beck 1999). By the same token, narrative skills can be trained when children are asked to retell stories after models provided by adults (Morrow 1985). This strategy for enhancing storytelling has been used with typically developing children (Adlof, McLeod, and Leftwich 2014), and also with children with language difficulties (Hayward and Schneider 2000; Spencer and Slocum 2010; Westerveld, Gillon, and Miller 2004).

Improvements in storytelling after a model have been reported for monolinguals (Beck and Clarke-Stewart 1998; Isbell et al. 2004; Wenner et al. 2008; Adlof, McLeod, and Leftwich 2014; Peterson and

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CONTACT Agnieszka Otwinowska ✉ a.otwinowska@uw.edu.pl
*Agnieszka Otwinowska and Karolina Mieszkowska are both the first authors of this paper.

McCabe 1992; Morrow 1985; Morrow, Sisco, and Smith 1992; Klein, Moses, and Jean-Baptiste 2010; Dunst, Simkus, and Hamby 2012), but to our best knowledge, studies have only seldom focused on bilingual children's storytelling after a model (Gutiérrez-Clellen 2002; Isbell et al. 2004; Kunnari, Välimaa, and Laukkanen-Nevala 2016; Licandro 2016; Maviş, Tunçer, and Gagarina 2016). Given that an increasing number of children grow up in bilingual or multilingual settings (Grosjean 1984, 2010) and that bilingual language development poses various challenges, especially in educational and diagnostic contexts (Armon-Lotem, de Jong, and Meir 2015), it is compelling to find out whether strategic adult modelling can enhance bilingual storytelling similarly to monolingual storytelling. To this end, we examine narratives produced by bilinguals in their two languages in two modes: telling without a model and retelling following an adult model. Moreover, we compare the retelling effect in Polish-English bilinguals from migrant settings to that of their Polish monolingual peers, matched for age, gender, and intelligence, and equal in terms of socio-economic status (SES). The bilinguals and monolinguals in the study are matched in such a way so as to ensure that any differences between the groups can be attributed to the language status (bilingual or monolingual), and not to other factors known to affect narrative performance, such as intelligence or environmental differences related to SES (for further discussion see Hoff 2006). In a large-scale study carried out with the use of the LITMUS-MAIN (Language Impairment Testing in Multilingual Settings – Multilingual Assessment Instrument for Narratives Gagarina et al. 2012, henceforth MAIN) we test whether the narrative macrostructure (e.g. story structure, story comprehension) and narrative microstructure (e.g. type-token ratio, mean length of utterance, etc.) improve once the child retells a story having been provided with an adult model. To sum up, we aim to examine whether the impact of the retelling mode is visible in children's stories regardless of the language used for storytelling by bilinguals (Polish or English), and regardless of the child's language status (bilingual or monolingual).

Monolingual and bilingual children's narrative skills

Children's narratives can be analysed in terms of their macrostructure and microstructure. Macrostructure is the global hierarchical organisation of a text and the overall coherence of the story, while microstructure pertains to the specific types of words and syntactic structures that make up the story (Berman and Slobin 1994). The two levels of narrative analysis will be subsequently discussed for monolinguals and bilinguals.

The macrostructure analysis focuses on the concept of story structure, which involves the presence of the setting (time and place) and the episode structure (Stein and Glenn 1975), with its core components of the goal of the protagonist, the attempt to reach the goal, and the outcome of the actions (Gagarina 2016). The complexity of children's narratives clearly grows with their age. Monolingual 4-year olds begin to express the temporal relation of events (Stein 1988). Around the age of 5-6, monolingual children typically start to include at least several of the basic story structure elements, such as the setting, an initiating event (or internal mental state of the protagonist), a goal developed in reaction to the initiating event, an attempt at the action, and the consequence of the action (Stein 1988; Stein and Glenn 1975). Between the ages of 6 and 10 monolinguals begin to produce narratives with a hierarchical organisation around a general goal (Berman and Slobin 1994). Similarly, the complexity of bilingual narrative macrostructure also increases with the child's age, although research here is scarce. For example, in a study of children speaking English and Swedish, Bohnacker (2016) found that 5-year olds usually did not express the setting in their stories, which was explicitly mentioned in the majority of narratives produced by 6- and 7-year olds. Overall, narrative macrostructure develops towards creating a coherent story with adequate evaluative content, background information, mental states, the integration of individual events and top-down narrative structures (Berman 2009).

Story macrostructure, which is less dependent on language abilities as compared to microstructure, follows a similar developmental trajectory across languages. The similarity of narratives produced by monolinguals in different languages may be attributable to the fact that telling a

coherent story requires a cognitive component (Berman and Slobin 1994). This has a clear bearing on bilinguals, since bilingual children's narrative abilities might extend beyond their language-specific skills (Gagarina et al. 2016; Genesee, Paradis, and Crago 2004). It is proposed that there might be a carry-over of the particular macrostructure elements across the bilingual's two languages, even if the child's linguistic abilities in one of them are weaker (Gagarina 2016). Although a bilingual may lack some language-specific skills, his or her general narrative abilities reflected in macrostructure categories will grow in both languages interdependently (Rodina 2016) and might enhance each other's growth. Such a carry-over effect is possible due to knowledge transfer between the two languages. According to the Linguistic Interdependence Hypothesis (Cummins 1979) and the Unified Model of Language Acquisition (MacWhinney 2005), bilingual children's skills, metalinguistic, and pragmatic knowledge gained in the L1 can be transferred into their L2. Thus, L1 linguistic knowledge can be instrumental in developing corresponding abilities in the L2, provided that L1 has been sufficiently developed prior to the extensive exposure to the L2 (e.g. at school). The development of the discursive competence in the bilingual child's L2 partially depends on the competence already developed in L1. Thus, although the bilingual child may lack some language-specific skills, his/her general discursive capacities will grow in both languages interdependently (Rodina 2016). The existing studies hint that the macrostructure measures in a bilingual's two languages are highly correlated and relatively stable across the first (L1) and the second language (L2) of the child (Gagarina 2016). For instance, Pearson (2002), who studied English-Spanish school children, found that scores for macrostructure (e.g. sequencing, story structure and mental state terms) were similar for both languages. The findings by Gagarina (2016) on Russian-German bilinguals, Bohnacker (2016) on Swedish-English bilinguals, Kunnari, Välimaa, and Laukkanen-Nevala (2016) on Finnish-Swedish children, Iluz-Cohen and Walters (2012) on English-Hebrew children, and Rodina (2016) on Russian-Norwegian bilinguals show that narrative macrostructure is relatively invariant across languages and is less reliant on language proficiency than narrative microstructure.

Story microstructure is much more language-specific than macrostructure because it essentially relies on the child's language proficiency, i.e. lexical and syntactic knowledge in a given language (Berman and Slobin 1994). Within narrative microstructure, researchers typically assess the use of lexis (types, tokens, type-token ratio – TTR, lexical diversity), morphology, and syntax (mean length of utterance – MLU, number of communication units – CU), as well as potential errors or atypical language forms (Gagarina 2016; Gagarina et al. 2015; Iluz-Cohen and Walters 2012). Microstructure elements depend on the child's age. Berman (1988), who studied narratives produced by monolingual Hebrew children across the 3–11 age range, found that school-age children produced on average twice longer narratives than pre-school children. Also, the syntactic accuracy and lexical richness of stories increased as children grew older. While more than half of the 3- and 4- year olds were still in the process of acquiring grammatical structures and lexical forms serving discourse functions, children at the age of 7 already started to produce largely grammatical utterances. Through ages 9 and 10, children began to include discourse markers, indicating sequence (e.g. and then, later), temporal relations (e.g. while, until) and logic (because, since).

In turn, the microstructure measures of bilingual narratives do not only reflect the child's age, but also the actual lexical and morpho-syntactic development of each of their languages. At a given moment, microstructure measures may remain language-specific and showcase differences in the narrative abilities between the bilingual's languages (Altman et al. 2016; Bohnacker 2016; Gagarina 2016; Iluz-Cohen and Walters 2012; Kapalková et al. 2016; Rodina 2016). For instance, Altman et al. (2016) compared typically developing (TD) 5-year-old English-Hebrew bilinguals to language impaired (SLI) bilinguals. They found that the MLU, lexical diversity, and error rates not only distinguished TD and SLI bilinguals, but also revealed microstructural differences between the two languages of TD bilinguals. Similarly, Rodina (2016) compared the microstructure of Russian-Norwegian bilingual 4 and 5-year olds with that of Russian and Norwegian monolinguals using six microstructure measures (including TTR, MLU, CU). She found that the bilinguals performed worse than the monolinguals in L1 Russian, but not in L2 Norwegian. Also, the bilinguals' L1 performance was

worse than their L2 performance across all microstructure measures. On the other hand, in the study of Finnish-Swedish bilingual 5-year olds by Kunnari, Välimaa, and Laukkanen-Nevala (2016) story length measured using word counts and CUs did not differ between the bilinguals' two languages, although it did differ significantly from that of Finnish monolinguals. Summing up, microstructure measures differentiate bilingual and monolingual children in terms of the child's lexical and morpho-syntactic abilities in a given language. Microstructure may also differ across a bilingual's two languages, reflecting the complexity in the development of each language.

Narrative retelling – evidence from monolingual children

Narrative skills, both production and comprehension, are acquired through interaction, including reading and telling stories. Interactions with siblings or peers improve children's narrative skills by engaging them in spontaneous storytelling and story-acting (for a discussion see Nicolopoulou 2002; Nicolopoulou et al. 2014). Sharing knowledge and experiences with adults enhances understanding and improves the macrostructure of children's narratives (Nelson 2010). This is because the child is not a 'solitary experimenter', but a social being whose experience is fostered by social and cultural interactions, during which he or she obtains linguistic models and is exposed to adult scaffolding behaviour (Nelson 2010; Vygotsky 1962). Adults create situations in which the child needs to pragmatically adjust to the listener's knowledge and support the child's storytelling efforts by asking scaffolding questions (Bokus 1991).

Provided with adequate models and scaffolding, children's story comprehension is improved (Morrow 1985), they develop a better understanding of plot structure and they can eventually produce far more complex stories than they would be able to without adult support. For instance, Clarke-Stewart and Beck (1999) investigated how English-speaking 5-year olds retold filmed stories that they watched with their mothers. They found that these children's understanding of the stories increased when they were scaffolded by questions from their mothers. If they engaged in direct interaction with their mothers while retelling, the children told significantly better stories in terms of event recall and verbal complexity (Bokus 2000; Clarke-Stewart and Beck 1999). Parental questions and encouragements were also positively related with the number of children's contributions to co-constructed narratives in a study on American monolingual pre-schoolers (Zevenbergen et al. 2016).

Of equal importance are the conditions of story production, which can be categorised into two modes: the mode of spontaneous telling, or the mode of story retelling. When retelling stories after a given model, children tend to address more goals of story characters in addition to using more elaborate vocabulary (Isbell et al. 2004; Peterson and McCabe 1992). In their experimental study, Isbell et al. (2004) found clear gains in 3- and 4-year olds' oral language productions that were induced by both adult storytelling and story reading. However, the children who were told stories and asked to retell them demonstrated improved story comprehension in their retellings, relative to the children who only listened to stories read to them. Retelling stories after a model has also been used as a strategy to train children's narrative abilities. In a study on enhancing early literacy in American English-speaking pre-schoolers (Morrow 1985), children encouraged to retell stories improved their understanding of the main elements of the story. Similarly, in a study on the understanding of false beliefs in American 3-year olds, retelling the story to an adult improved the children's understanding of the mental states of the story protagonists (Lewis et al. 1994). Thus, it seems that the retelling condition stimulates the creation of a richer macrostructure in children's stories.

As for the influence of retelling on the microstructure of child narratives, research renders mixed results. Since a model story told by an adult introduces complex grammatical and morphological structures not typically found in children's speech, the syntactic and morphological complexity of children's stories may grow. One case in point, for instance, is a study of English-speaking 5-year olds by Adlof, McLeod, and Leftwich (2014), in which the number of types, tokens, and the MLU in the narratives increased after children practised retelling and were provided with explanations of

advanced vocabulary. Thus, it has been proposed that having children retell stories may be particularly useful for improving their oral comprehension and expressive vocabulary (e.g. Isbell 2002; Morrow, Sisco, and Smith 1992). This claim is supported by a meta-analysis of 11 longitudinal studies involving American monolingual toddlers and preschoolers ($n = 687$). As demonstrated in the meta-analysis, using story retellings as a pedagogical strategy for enhancing children's oral skills indeed produced best results for text comprehension and developing expressive vocabulary (Dunst, Simkus, and Hamby 2012).

However, there is also some evidence that exposure to adult storytelling might not enhance story microstructure. In a study by Sénéchal et al. (2008) on 4-year olds, over 100 children were asked to produce narratives based on picture stories. Prior to the study, their storybook exposure at home was checked via parental questionnaires. Although the frequency and variety of shared reading was positively related to the children's expressive vocabulary, it had no relation to type-token ratios and mean length of utterance in the children's stories. Overall, it seems that while retelling stories after a model is effective in improving the quality of story macrostructure, there is no clear evidence of improvements in microstructure measures.

Narrative retelling – evidence from bilingual children

Little is known about whether bilingual narratives improve thanks to retelling after a model just as monolingual narratives do. Three small-scale studies shed some light on the issue. Licandro (2016) investigated the development of narrative abilities in Turkish-German pre-schoolers (mean age 4;11) with a peer-assisted intervention approach that lasted 10 weeks. The children were assigned to a control group, a 'peer-tutoring' group, or a 'peer-play' group, the last two scaffolded by an adult. In the 'peer-tutoring' pairs ($n = 10$), German-speaking bilinguals with higher narrative skills told stories to bilinguals of lower skills. In the 'peer-play' pairs ($n = 9$) the more and less competent children played together. In the control group ($n = 10$) they did not engage in any particular peer interaction. The children from the 'peer-tutoring' group improved in both the macrostructure and microstructure of their stories significantly more than the children form the remaining groups. The experiment supports the claim that language models (here: peer models) provided by interlocutors with better narrative skills are a valid means of developing these skills in children.

Two studies with the use of MAIN (Gagarina et al. 2012), a picture based narrative task comprising four stories of similar structure and complexity (see below), hint that there might be some positive modelling effects when bilingual children are asked to retell stories after an adult. In a study on Turkish-German bilingual children (aged 2;11-7;11) Maviş, Tunçer, and Gagarina (2016) examined the impact of task types (telling vs. retelling) on the quality of narrative macrostructure. The children were assigned to two conditions: (1) 'tell-after model' ($n = 13$), where they first listened to a model, answered comprehension questions, and then told another story similar in structure to the model one; (2) 'tell-no model, then retell after model' ($n = 13$), where they first told a story, then listened to another model story and retold it. The results point to significant gains in terms of comprehension in the 'tell-after model' condition, relative to the 'tell-no model' condition and gains at a trend level for story structure in children's own narrative productions in Turkish (the children's home language). In another study using MAIN, Kunnari, Välimaa, and Laukkanen-Nevala (2016) examined Finnish-Swedish bilinguals ($n = 16$) and Finnish monolinguals ($n = 16$), mean age 5;8. The children first told a story based on pictures, and then listened to another model story provided by an adult and retold the story based on pictures. In the retelling condition, the macrostructure of the stories was significantly better than in the telling condition, for monolinguals and for bilinguals in their two languages.

A fourth study, by Gutiérrez-Clellen (2002), provides some counter evidence to the above. In the study, 8-year old bilingual children (L1 Spanish, L2 English, $n = 33$) were asked tell a story in their two languages based on a wordless picture book, and to retell a story after the experimenter. Overall, the bilinguals retold stories better in their L2 than their L1. However, some children with limited L2

proficiency struggled on the English retell tasks, although they produced coherent stories in the telling mode. Their retold narratives were structured as a collection of actions without clear inter-relationships, and some of their statements suggested problems with processing the English word order in the model story. Gutiérrez-Clellen suggested that for those children an increased attention to the linguistic form when listening to the L2 model narratives may have negatively affected their reconstruction of the story.

Concluding, there are some positive effects of retelling on the macrostructure of bilingual story-telling in the retelling mode, but so far they were only observed in three small-scale studies, on two language pairs (Turkish-German and Finnish-Swedish). Thus, there is little evidence whether and how bilingual narrative macrostructure and microstructure change when children are presented with model stories told by an adult before they are asked to narrate, relative to the condition where they obtain no model. Although several studies on bilingual narratives used story retelling as the eli-citation method (e.g. Altman et al. 2016; Bohnacker 2016; Rodina 2016), they did not compare narra-tives elicited with and without a prior model, especially with regard to both the macrostructure and microstructure of narratives. Our large-scale study aims to fill this gap by investigating the effects for story retellings in the two languages of bilinguals in the previously unstudied language combination of Polish and English.

The current study

Although narrative production in Polish monolinguals is well-researched (Bokus 1991, 2004; Shugar, Bokus, and Smogorzewska 2013), so far, there have been no studies examining the development of narrative abilities involving Polish-speaking bilingual children. This is due to the fact that widespread child bilingualism with Polish is a relatively new phenomenon connected with migration events that took place after Poland joined the European Union in 2004 (Haman et al. 2014). The Polish community in the UK has now reached one million, and each year c.a. 25,000 children are born to UK resident Polish families (ONS, Office for National Statistics 2014). The research on various aspects of language development of Polish-speaking bilingual children is relatively new (e.g. Tamburelli et al. 2015; Marecka et al. 2015; Miękisz et al. 2016; Mieszkowska et al. 2017; Haman et al. 2017), and none of the studies so far have focused specifically on the retelling effects in child narrative production.

To this end, we aimed to compare Polish-English bilingual children's narrative production in two modes. First, when the narrative is told by the child semi-spontaneously, i.e. only with the aid of pic-tures (the telling mode), second, when it is also aided by pictures, but told after a model story pro-vided by an adult (the retelling mode).[1] In particular, we aimed to test for the possible effects of the retelling mode on the macrostructure and the microstructure measures when the child is provided with an adequate model story. With regards to the bilingual narratives, our research questions were as follows:

> RQ1: Do the stories retold by the bilinguals after an adult model show an improvement in the macrostructure measures in Polish and in English, relative to the stories told without a model?

> RQ2: Do the stories retold by the bilinguals differ in the microstructure measures in Polish and in English, relative to the told stories?

Overall, we expected similar results for the macrostructure in English and Polish based on the claims that bilingual children may transfer the common conceptual base between their languages (e.g. Lin-guistic Interdependence Hypothesis by Cummins 1979; Unified Model of Language Acquisition by MacWhinney 2005), which leads to macrostructural invariance across the child's languages (Gagarina et al. 2016; Gagarina 2016; Rodina 2016). We also expected that providing a bilingual with a model story would bring positive effects for the narrative macrostructure in both of the child's languages, as evidenced by the studies reviewed above (Kunnari, Välimaa, and Laukkanen-Nevala 2016; Licandro 2016; Maviş, Tunçer, and Gagarina 2016). However, with reference to microstructure, we assumed

that the retelling effects would be difficult to predict. On the one hand, presenting the model story could improve the child's linguistic performance by giving him or her a model to emulate (Maviş, Tunçer, and Gagarina 2016; Kunnari, Välimaa, and Laukkanen-Nevala 2016). On the other hand, if the model story presented the child with vocabulary and constructions too demanding for his/her proficiency, the model could have detrimental effects on the microstructure (Gutiérrez-Clellen 2002; Sénéchal et al. 2008).

Additionally, we aimed to compare the effects of retelling in the Polish narratives of bilinguals with the benchmark performance of their Polish monolingual peers raised in Poland. With regards to the bilingual-monolingual comparison, our research questions were as follows:

> RQ3: Do the Polish stories retold by the bilinguals and monolinguals show an improvement in the macrostructure measures, relative to the told stories?

> RQ4: Do the Polish stories retold by the bilinguals and monolinguals differ in the microstructure measures, relative to the told stories?

We expected to observe the effects of retelling in the narratives of Polish monolinguals which would be similar to those obtained for English monolinguals (e.g. Morrow 1985), and we were interested whether the effects might be comparable in the case of bilinguals and monolinguals in Polish. As for story microstructure, we expected that the results were difficult to predict. Based on the research reviewed above, we expected that providing monolinguals with a model story might bring about positive effects for the lexical measures (e.g. Adlof, McLeod, and Leftwich 2014), but it might also have null effects (e.g. Sénéchal et al. 2008) on the monolinguals' retold stories. In the case of bilinguals, we might expect an improvement (e.g. Kunnari, Välimaa, and Laukkanen-Nevala 2016), but equally well a decrease in the use of lexis or morphosyntax (Gutiérrez-Clellen 2002; Sénéchal et al. 2008).

Participants

The study examines a dataset of 150 children tested within a large-scale project (Haman et al. 2014, Otwinowska et al. 2012) involving nearly 500 participants (monolingual and bilingual). The bilingual group ($n = 75$, 44 girls) chosen for the study consisted of children speaking Polish and English and raised in the United Kingdom (London and Cambridge areas). The monolingual group ($n = 75$, 45 girls) consisted of children born and raised in Poland who communicated exclusively in Polish, both at home and within their communities (Warsaw and Kraków). We chose all children who had completed all narrative tasks, whose recordings were of satisfying sound quality that enabled transcription, and for whom background data were available. The bilinguals and monolinguals were matched (in a one-to-one pairwise fashion) for age, gender, and for cognitive abilities, as measured by a non-verbal intelligence test (Raven 2003). There were no differences in the socioeconomic status (SES) of the groups, as indicated by maternal education measured in years of formal schooling. The characteristics of the two groups are presented in Table 1. All the children in the sample were typically developing (none experienced any developmental disorders as attested by the parental report).

Table 1. Demographic information and descriptive statistics for background measures in the bilingual and monolingual groups.

	PL-EN bilinguals ($n = 75$)	PL monolinguals ($n = 75$)	Between-groups comparisons:
Gender (m: male; f: female)	31 m + 44 f	30 m + 45 f	$\chi^2(2) = 0.03$, ns
Age (months) M ± SD [range]	67 ± 10 [37–86]	68 ± 8 [42–87]	$t(148) = -0.8$, ns
Raven (raw score) M ± SD	23 ± 4	23 ± 5	$t(148) = 0.8$, ns
Maternal education (years of schooling) M ± SD	16 ± 2.8	17 ± 3.1	$t(111) = -0.9$, ns

Detailed information was collected about the children's language background through the Polish version of The Questionnaire for Parents of Bilingual Children (PABIQ, English version: COST IS0804, 2011; Polish version: Kuś et al. 2012; see also: Tuller 2015). All bilinguals had been exposed to English before the age of four (*M* = 12 months, *SD* = 15 months, range: 0–48 months), and all had at least one Polish parent. During their everyday activities, the children communicated both in Polish, their home language, and the community language (i.e. the language of schooling and peer-to-peer interaction). The bilinguals' language skills in Polish evaluated by parents received an average of 19 points (out of 27; *SD* = 5), while the mean score for their English skills as evaluated by parents equalled 18 (out of 27; *SD* = 3). The difference between the indices in the two languages was not significant $t(144) = 1.1$, $p = .27$.

Materials and instruments

Narratives

Elicitation was based on the MAIN, in its English version (Gagarina et al. 2012) and its Polish version (Kiebzak-Mandera, Otwinowska, and Białecka-Pikul 2012). The MAIN is designed in multiple languages for assessing various aspects of language development in bi- and multilingual populations (Armon-Lotem, de Jong, and Meir 2015). It provides detailed procedures and guidelines for evaluating the production and comprehension of narratives with the use of four compatible picture stories (*Baby Birds, Baby Goats, Cat, Dog),* each consisting of three episodes. Thanks to the unique design of the MAIN, the stories are controlled for cognitive and linguistic complexity, parallelism in macrostructure, and for cultural appropriateness and robustness. The macrostructure of the stories is claimed to be fully comparable across the language versions, and the language specific differences in the microstructure complexity are kept minimal (|Gagarina et al. 2012, 2015). For each picture story, model stories are provided, parallel across the language versions. There are 9 comprehension questions for each story, i.e. 3 questions for each episode.[2]

Test of non-verbal intelligence

Raven's Coloured Progressive Matrices (Raven 2003; Raven, Szustrowa, and Jaworska 2003), a normed psychometric test was used as a measure of children's cognitive abilities (non-verbal intelligence). Either the Polish or English version of the test was used, depending on the child's language dominance (as reported by parents).

Background questionnaire

The Polish version of The Questionnaire for Parents of Bilingual Children (PABIQ, English version: COST IS0804, 2011; Polish version: Kuś et al. 2012; see also: Tuller 2015) provided information about the family's socioeconomic status (i.e. the mother's education), the child's language development, length of exposure to English, and the child's language skills in both languages (as evaluated by parents in a set of detailed questions regarding various aspects of language comprehension and use; please note that the child's language dominance was reported by parents twice: first prior to the study as a preliminary assessment of language dominance, and, for the second time, during the study, when parents gave detailed information on their evaluation of children's skills in both languages by filling in the PABIQ).

Procedure

All children were tested individually by a proficient speaker of the respective language in a quiet room: the Polish monolingual children in their preschools or in their homes in Poland, the bilingual children in their schools or their homes in the UK. The narrative elicitation was part of a large battery of tests. Apart from the instruments described above, each monolingual child was tested with a set of linguistic and cognitive tasks in Polish, and each bilingual child was tested with a set of linguistic and

cognitive tasks in Polish and English. To reduce the effects of fatigue, each monolingual child was tested throughout 3–4 sessions, and each bilingual child – throughout 5–7 sessions. The testing in Polish and in English was carried out by different experimenters and on different days. Each session lasted approximately 45–90 min, including breaks, depending on the child's pace. The order of the tasks in the testing sessions was counterbalanced (for details see Haman et al. 2017). Here, we only provide a detailed report of the procedure and data from the narrative tasks, the focus of the current analysis. Narrative elicitation was counterbalanced for the use of the four stories across modes (telling vs. retelling) and languages (Polish vs. English) in the bilingual group. Effectively each bilingual child was tested with four stories (two in the telling mode in Polish and in English, and two in the retelling mode in Polish and in English), and each monolingual child was tested with two stories (one in the telling mode and one in the retelling mode).

The testing procedure for narrative elicitation consisted of three stages, the same in each language: (1) Warm-up, (2) Narrative Telling (MAIN: *Baby Birds/ Baby Goats*, counterbalanced) and comprehension questions, (3) Narrative Retelling (MAIN: *Dog/ Cat,* counterbalanced) and comprehension questions. The procedure was as follows. The experimenter and the child were seated next to each other during the telling and retelling modes. First, the child was asked several warm up questions, e.g. '*Do you like listening to stories and fairy tales? Do you know what a story or a fairy tale always begins with/ends with?*' If the child did not know the answer, the experimenter explained how stories could begin and end. The child was also prompted to tell any story he or she wanted. Then the experimenter presented the child with three envelopes and informed the child that each contained a different story. In fact, all envelopes contained the same picture story, in accordance to the testing scheme, but this was done in order to strengthen the child's belief that the experimenter was not familiar with the stories. The child was asked to choose one envelope.

In the telling mode that followed, the child was asked to take the picture story from the envelope, look at the pictures, and tell a story without showing the pictures to the experimenter (the child was explicitly asked not to do that). This was done to ensure the 'non-shared attention' condition, as the experimenter was only the listener and the child had to narrate alone. The experimenter prompted the child gently only if he or she could not begin, or if there was a long pause. The experimenter looked at the child, and did not interrupt or otherwise intervene in the narrative, even if the child had problems naming the characters. Then the experimenter asked the child follow-up comprehension questions to assess the child's understanding of the story.

In the retelling mode, when the child had chosen the envelope, the experimenter and the child viewed the pictures together. First, the experimenter told the model story to the child in a friendly manner, following the script and pointing to the pictures (for story scripts see Gagarina et al. 2012). Subsequently, she asked the child to retell the story while viewing the pictures together with her in the 'shared attention' manner. After the retelling, the child was also asked a set of comprehension questions.

Overall, in our study there were two manipulations: 1. the child viewed the pictures individually vs. the experimenter viewed the pictures together with the child; 2. the child was not provided with a model story or was provided with a model before he/she was asked to tell the story. The manipulations used in the retelling mode (viewing the pictures with the child and providing a coherent and linguistically rich model story) were supposed to enhance the child's storytelling at the macro- and microstructure level.

Analysis and scoring

The task was audio and video recorded. The narratives were transcribed in the CHAT format (MacWhinney 2000) by proficient speakers of Polish and English, and the transcripts were cross-checked by another transcriber. The transcripts were analysed by three raters, proficient speakers of Polish and English, different from the transcribers. One rater analysed the microstructure. Two raters analysed the macrostructure, the coding and scoring procedures followed those provided in

the MAIN manual (Gagarina et al. 2012). The story macrostructure for 10% of the children was double coded in order to check the inter-rater agreement. A high degree of reliability was found between the two raters, the average ICC = 0.89 with 95% CI (0.683, 0.955).

Macrostructure measures

Three MAIN macrostructure measures were used: story structure, mental state terms for production, and questions for story comprehension.

Story structure. A maximum of 17 points could be given for story structure[3] in both the Telling and the Retelling mode: 2 points for expressing a setting, and a total of 15 for the three episodes of each story: within each of three episodes 1 point was given for an Initiating event (max. 3 episodes * 1 = 3 points); 3 points for each element of the Goal-Attempt-Outcome (GAO) sequence (max. 3 episodes * 3 = 9 points); 1 point for the Reaction/Response (max. 3 episodes * 1 = 3 points); additionally, 1 point could be obtained for a full GAO sequence in each of the three episodes (max. 3 episodes * 1 full GAO sequence = 3 points). So the total for the story was 20 points (17 + 3).

Mental state terms. Words describing the internal states of the protagonists were counted. These included perceptual and physiological state terms (e.g. *see, feel, hungry,* etc.), emotional state terms (e.g. *sad, happy, angry,* etc.), mental verbs (e.g. *think, know, want,* etc.), and linguistic verbs (e.g. *say, shout, warn, ask,* etc.). For each such term used (token) the child could score 1 point. Between 0 and 10 points was the score range in the telling mode, and 0–12 points was the range in the retelling mode.

Comprehension questions. A maximum of 9 points could be obtained, 1 for each question answered. All the questions were cued recall questions (cf. Maviş, Tunçer, and Gagarina 2016). Three of the questions targeted the three goals (e.g. '*Why is the goat in the water?*'), two questions elicited internal state terms connected either to the initiating event or reaction elements (e.g. '*How does the baby goat feel?*'), and were followed by three clarification questions ('*Why so?*'), and one question eliciting a theory of mind response (e.g. '*Imagine that the bird sees the goats. How does the bird feel?*'), followed by a clarification question ('*Why so?*'). We used an older version of the MAIN, where the last (10th) question eliciting theory of mind was absent (e.g. '*Who does the mother goat like best, the fox or the bird? Why?*'). This question was not asked in the study.

Microstructure measures. The microstructure analysis included basic lexical measures (Type-Token Ratio, TTR), and two basic syntactic measures (the number of Communication Units, CU, understood as predicates and their arguments and modifiers; Mean Length of Utterance, MLU). Furthermore, any morphological and syntactic patterns atypical in comparison to adult standards (for Polish and English) were coded. These could have been overt violations of syntax or morphology in English or in Polish (e.g. *He **want** to eat it*; *And the mommy bird **come***; *I zobaczył **pieska goniący** kogoś*/ And he saw a **dog**[**acc**] **chasing**[**nom**] someone) and instances of transfer from English to Polish, such as the overuse an misuse of pronouns (e.g. *Chce odzyskać **jego balonik**/ He wants to get **his** [**non-refl.**] balloon), the misuse of prepositions (*The birds were **on** the tree*), and finally the non-use of the pro-drop-factor (e.g. *I **on** złapał ją za tylną nogę./ And **he** grasped her hind leg*), which is not an error, but is atypical for standard Polish. For a detailed taxonomy of atypical patterns see Opacki (2016).

Statistical analyses. A series of 2 × 2 ANOVAs was carried out to compare the macrostructure and microstructure measures in the stories (1) told and retold by the bilinguals in the two languages and (2) told and retold in Polish by the bilinguals and monolinguals. We looked for the main effects of mode (two levels: telling, retelling), and main effects of language (two levels: Polish vs

English) or group (two levels: monolingual, bilingual), and the interaction effects of mode and language or mode and group.

Results

Macrostructure in bilingual stories across languages

First, we aimed to find out whether there was an improvement in the macrostructure measures in the retelling mode, relative to the telling mode in bilingual stories in Polish and in English (RQ1). The descriptive results for the macrostructure measures are given in Table 2 and presented in Figure 1 (a–c).

Story structure

A 2×2 ANOVA yielded a significant main effect of mode $F(1,296) = 6.9$, $p < .001$, such that the retold stories showed higher story structure scores ($M = 9.23$, $SD = 3.01$) than the told stories ($M = 7.58$, $SD = 2.5$).[4] The effect of language was non-significant, $F(1,296) = 2.52$, $p = .113$, and neither was the effect of interaction between language and mode, $F(1,296) = 1.09$, $p = .297$.

Mental terms

A 2×2 ANOVA revealed a significant main effect of mode, $F(1,292) = 129.09$, $p < .001$, with the retold stories containing more references to internal states ($M = 5.45$, $SD = 2.83$) than the told stories ($M = 2.3$, $SD = 1.82$). The main effect of language was non-significant, $F(1,292) = 0.34$, $p = .559$, and so was the effect of interaction between language and mode, $F(1,292) = 0.001$, $p = 1$.

Comprehension questions

A 2×2 ANOVA yielded a main effect of mode, $F(1,293) = 41.9$, $p < .001$, as the children showed a better comprehension of the retold stories ($M = 7.92$, $SD = 1.56$), relative to the told stories ($M = 6.73$, $SD = 1.62$). There was also a main effect of language, $F(1,293) = 6.5$, $p < .05$, as children showed a better comprehension of the English stories ($M = 8.26$, $SD = 1.46$) than the Polish stories ($M = 7.58$, $SD = 1.6$). The effect of interaction between language and mode remained non-significant, $F(1,293) = 1.26$, $p = .261$.

The above results show that the macrostructure measures significantly increased in retelling, relative to telling regardless of the language used, which corroborates our hypothesis that positive effects may occur when stories are retold following a model story presented by an adult. Also, two macrostructure measures, story structures and mental state terms, did not significantly differ between the children's Polish and English in either of the modes.

Microstructure in bilingual stories across languages

Next, we compared the microstructure measures of the stories told and retold by bilinguals in the two languages: Polish and English (RQ2). The descriptive statistics are presented in Table 3 and the results in Figure 2(a–d).

Table 2. Descriptive statistics for the macrostructure measures in bilingual narratives.

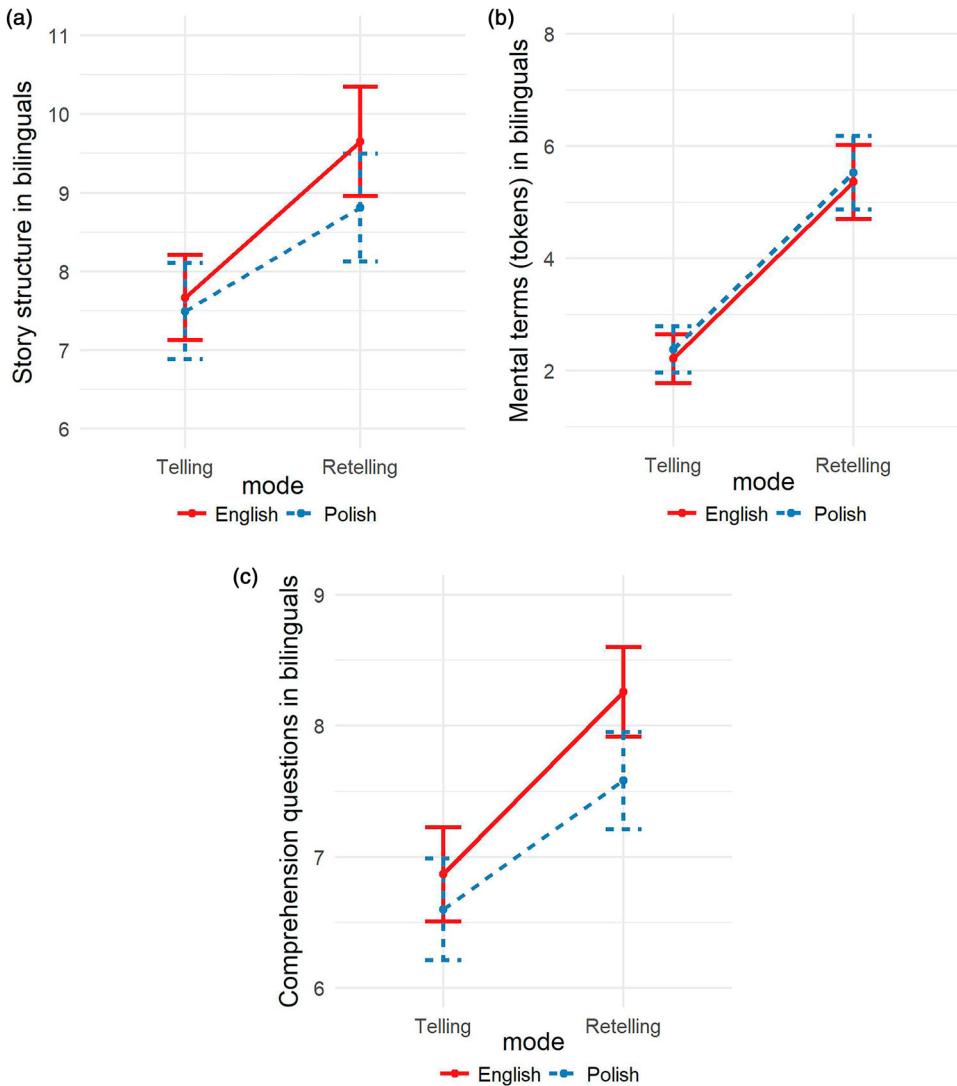| | Polish (L1) | | | | English (L2) | | | |
| | Telling | | Retelling | | Telling | | Retelling | |
Macrostructure	M	SD	M	SD	M	SD	M	SD
Story Coherence	7.49	2.65	8.81	2.98	7.67	2.36	9.65	3
Mental Terms	2.38	1.77	5.53	2.82	2.22	1.87	5.36	2.85
Story Comprehension	6.6	1.68	7.58	1.6	6.87	1.6	8.26	1.46

Figure 1. Macrostructure measures in the bilinguals' narratives in Polish and English across the Telling and Retelling modes a) Story Structure, b) Mental Terms, c) Story Comprehension.

Type-token ratio

The results of a 2 × 2 ANOVA showed that the main effect of mode was non-significant, $F(1,296) = 2.57$, $p = .11$. There was a main effect of language, $F(1,296) = 13.71$, $p < .001$, such that regardless of

Table 3. Descriptive statistics for the microstructure measures in bilingual narratives.

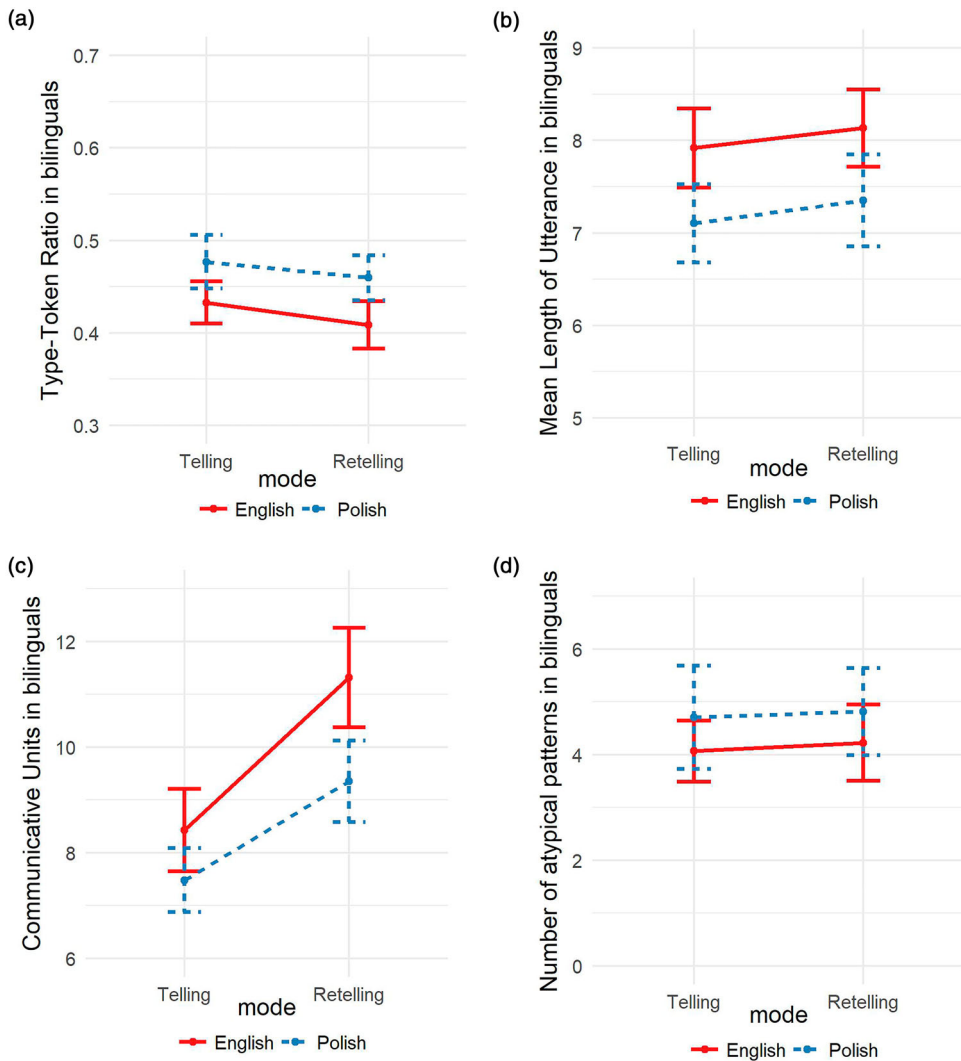| | Polish (L1) | | | | English (L2) | | | |
| | Telling | | Retelling | | Telling | | Retelling | |
Microstructure	M	SD	M	SD	M	SD	M	SD
TTR (Type-Token Ratio)	0.48	0.13	0.46	0.11	0.41	0.11	0.43	0.1
MLU (Mean Length of Utterance)	7.1	1.84	7.35	2.17	7.92	1.86	8.13	1.81
CU (Communication Units)	7.48	2.64	9.35	3.33	8.43	3.4	11.32	4.09
Atypical patterns	4.7	4.23	4.81	3.6	4.1	2.53	4.23	3.13

Figure 2. Microstructure measures in the bilinguals' narratives in Polish and English across the Telling and Retelling modes a) Type-Token Ratio, b) MLU, c) CU, d) Atypical patterns.

the mode, the type-token ratio in the Polish stories ($M = 0.47$, $SD = 0.11$) was significantly higher than in the English stories ($M = 0.41$, $SD = 0.11$). The effect of interaction between language and mode was non-significant, $F(1,296) = .07$, $p = .79$.

Mean length of utterance
A 2×2 ANOVA did not reveal a significant main effect of mode, $F(1,296) = 1.09$, $p = .298$. There was a main effect of language, $F(1,296) = 12.88$, $p < .001$, with the English stories in both modes showing longer utterances ($M = 8.03$, $SD = 1.83$) relative to the Polish stories ($M = 7.23$, $SD = 2$). The effect of interaction between language and mode remained non-significant, $F(1,296) = 0.01$, $p = 0.941$.

Communication units
A 2×2 ANOVA revealed a main effect of mode, $F(1,295) = 36.71$, $p < .001$, with the retold stories containing more CUs ($M = 10.34$, $SD = 3.85$) than the told stories ($M = 7.95$, $SD = 3.06$). There was also a

significant main effect of language, $F(1,295) = 13.84$, $p < .001$, such that the English stories contained more CUs ($M = 9.87$, $SD = 4.02$) than the Polish stories ($M = 8.41$, $SD = 3.13$). However, the effect of interaction between language and mode was non-significant, $F(1,295) = 1.69$, $p = .195$.

Atypical patterns

A 2 × 2 ANOVA revealed a non-significant main effect of mode, $F(1,296) = 0.04$, $p = .94$, and language, $F(1,296) = 2.39$, $p = .122$. The effect of interaction between language and mode was also non-significant, $F(1,296) = 0.01$, $p = .946$.

Overall, we found a main effect of mode (retelling > telling) only for one microstructure measure, the CU. Children told longer stories having heard the model story. The results for the TTR and MLU revealed no significant effect of mode, but they showed a main effect of language (Polish vs. English). Thus, the linguistic performance of children did not improve across the modes, but differed across the children's languages. Interestingly, the TTR was higher in Polish than in English, but for the MLU the reverse was true. Moreover, the number of atypical patterns did not change depending on the mode or language.

Macrostructure in Polish narratives of bilinguals and monolinguals

Next we examined whether the Polish stories retold by the bilinguals and monolinguals would show an improvement in the macrostructure measures, relative to the told stories (RQ3). The descriptive statistics are presented in Table 4, and the results in Figure 3(a–c).

Story structure

A 2 × 2 ANOVA revealed a significant main effect of mode, $F(1,296) = 13.96$, $p < .001$, with the retold stories showing a better story structure ($M = 8.75$, $SD = 2.75$) than the told stories ($M = 7.57$, $SD = 2.7$). There was no significant effect of group, $F(1,296) = 0.001$, $p = .983$ and no significant effect of interaction between group and mode, $F(1,296) = 0.2$, $p = .658$.

Mental terms (tokens)

A 2 × 2 ANOVA revealed a significant main effect of mode, $F(1,292) = 121.77$, $p < .001$, such that the retold stories contained more references to the internal states ($M = 5.45$, $SD = 2.69$) than the told stories ($M = 2.43$, $SD = 1.93$). There was no significant main effect of group, $F(1,292) = 0.01$, $p = .921$, and no significant effect of interaction between group and mode, $F(1,292) = 0.24$, $p = .621$.

Comprehension questions

A 2 × 2 ANOVA revealed a significant main effect of mode, $F(1,294) = 20.14$, $p < .001$, as children showed a better comprehension of the retold stories ($M = 7.5$, $SD = 1.59$), relative to the told stories ($M = 6.64$, $SD = 1.72$). There was no significant main effect of group, $F(1,294) = 0.06$, $p = .808$, and no significant effect of interaction between group and mode, $F(1,294) = 0.35$, $p = .554$.

Overall, the results revealed that the macrostructure measures significantly increased in the retelling mode, relative to telling for all three measures, which corroborates our hypothesis.

Table 4. Descriptive statistics for the microstructure measures in bilingual and monolingual narratives in Polish.

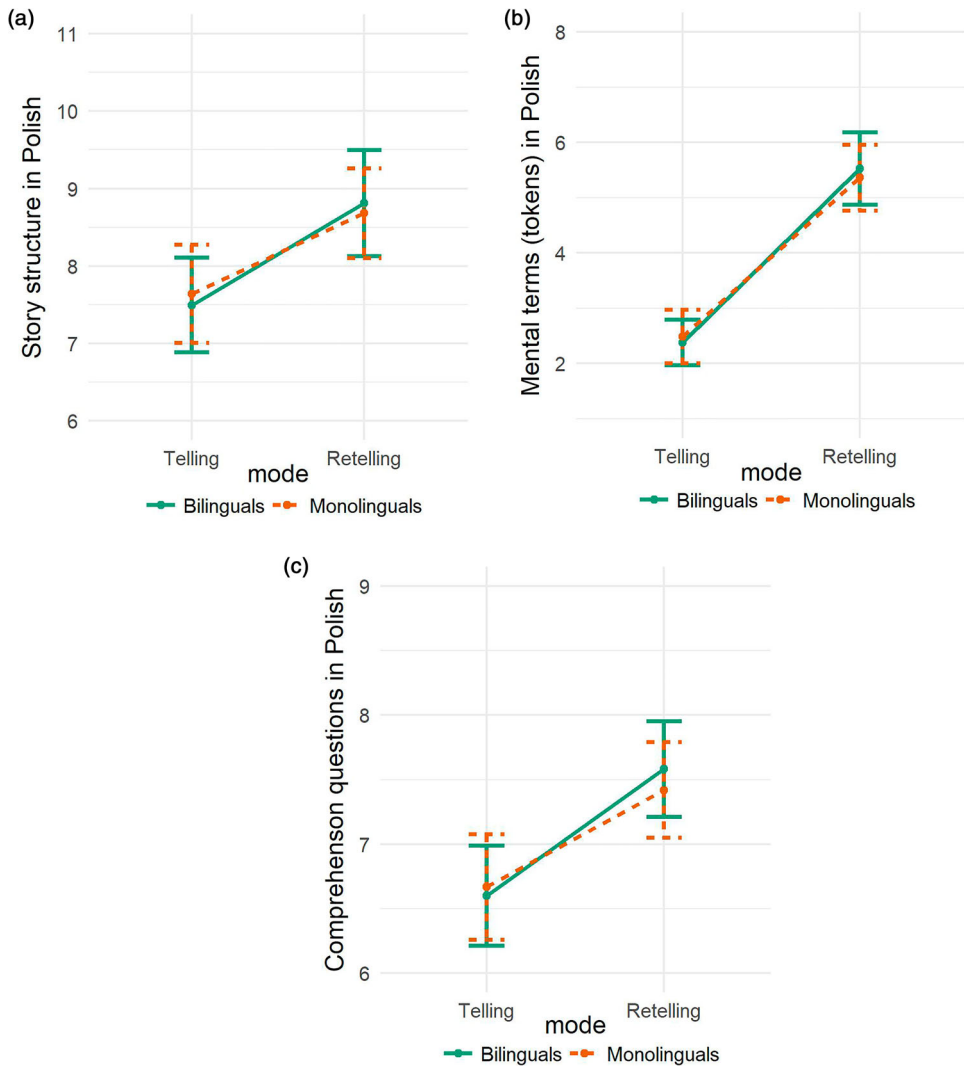| | Bilinguals (in Polish) | | | | Monolinguals (in Polish) | | | |
| | Telling | | Retelling | | Telling | | Retelling | |
Macrostructure	M	SD	M	SD	M	SD	M	SD
Story Structure	7.49	2.65	8.81	2.98	7.64	2.76	8.68	2.53
Mental State Terms	2.38	1.77	5.53	2.82	2.49	2.08	5.36	2.57
Story Comprehension	6.6	1.68	7.58	1.6	6.67	1.78	7.42	1.6

Figure 3. Macrostructure measures in the bilingual and monolingual narratives in Polish across the Telling and Retelling modes a) Story Structure, b) Mental Terms, c) Story Comprehension.

Microstructure in Polish narratives of bilinguals and monolinguals

Finally, we checked whether the Polish stories retold by the bilinguals and monolinguals differed in the microstructure measures, relative to the told stories (RQ4). The descriptive statistics are presented in Table 5 and the results in Figure 4(a–d).

Table 5. Descriptive statistics for the microstructure measures in bilingual and monolingual narratives in Polish.

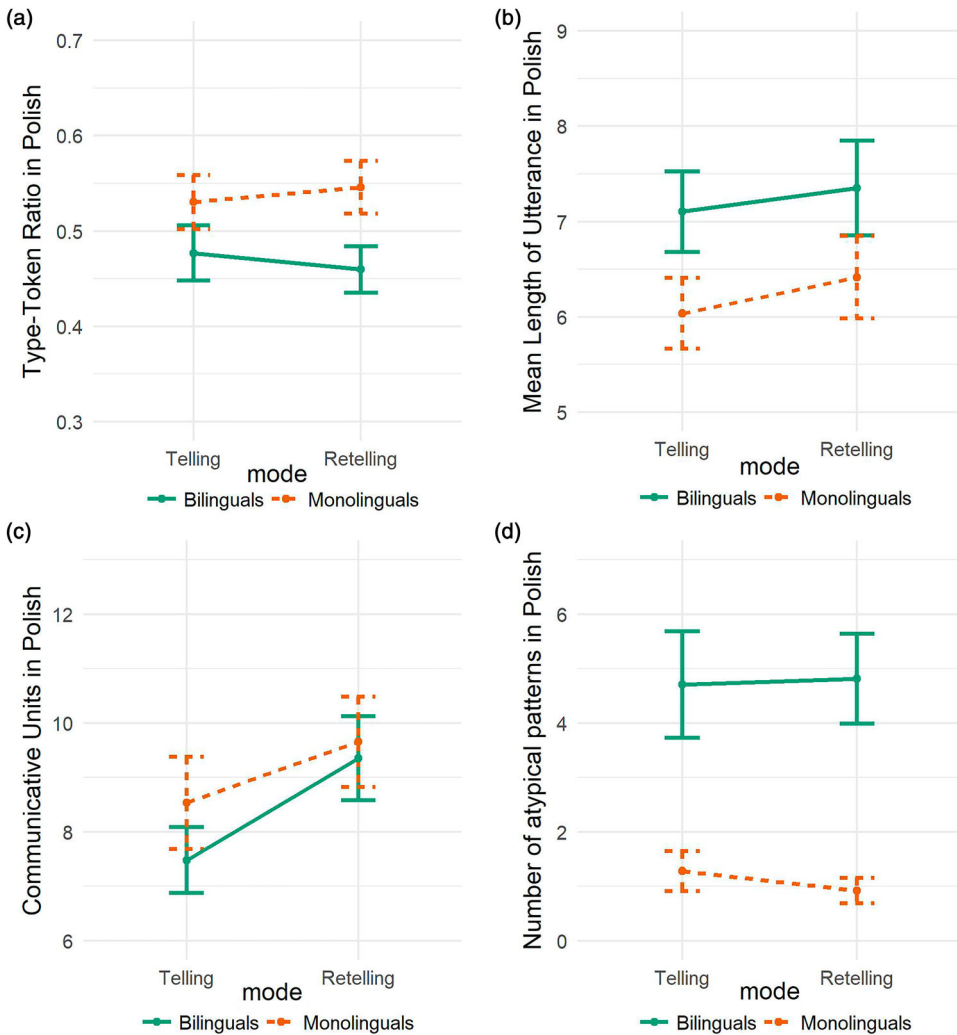| | Bilinguals (in Polish) | | | | Monolinguals (in Polish) | | | |
| | Telling | | Retelling | | Telling | | Retelling | |
Microstructure	M	SD	M	SD	M	SD	M	SD
TTR (Type-Token Ratio)	0.48	0.13	0.46	0.11	0.53	0.12	0.55	0.12
MLU (Mean Length of Utterance)	7.1	1.84	7.35	2.17	6.04	1.62	6.42	1.89
CU (Communication Units)	7.48	2.64	9.35	3.33	8.53	3.68	9.65	3.6
Atypical patterns	4.7	4.23	4.81	3.6	1.28	1.6	0.92	1.02

Figure 4. Microstructure measures in the bilingual and monolingual narratives in Polish across the Telling and Retelling modes a) Type-Token Ratio, b) MLU, c) CU, d) Atypical patterns.

Type-token ratio

A 2×2 ANOVA revealed a non-significant main effect of mode $F(1,296) = 0$, $p = .958$, but the main effect of group turned to be significant, $F(1,296) = 25.6$, $p < .001$, with the monolinguals outperforming the bilinguals ($M = 0.54$, $SD = 0.12$ vs. $M = 0.47$, $SD = 0.12$, respectively). There was no significant effect of interaction between group and mode, $F(1,296) = 1.41$, $p = .236$.

Mean length of utterance

A 2×2 ANOVA yielded a non-significant effect of mode, $F(1,296) = 2.07$, $p = .151$. There was a significant main effect of group, $F(1,296) = 21.13$, $p < .001$, with the bilingual stories showing a higher MLU than the monolingual stories ($M = 7.23$, $SD = 2.01$ vs. $M = 6.23$, $SD = 1.76$, respectively). There was no significant effect of interaction between group and mode, $F(1,296) = 0.09$, $p = .763$.

Communication units

A 2×2 ANOVA showed a significant main effect of mode, $F(1,295) = 14.9$, $p < .001$, with the retold stories containing more CUs ($M = 9.5$, $SD = 3.46$) than the told stories ($M = 8.01$, $SD = 3.23$). The

main effect of group was non-significant, $F(1,295) = 3.14$, $p = .077$, and neither was the effect of inter-action between mode and group, $F(1,295) = 0.95$, $p = .331$.

Atypical patterns

A 2×2 ANOVA revealed a non-significant main effect of mode, $F(1,296) = 0.14$, $p = .709$, but a main effect of group turned out to be significant, $F(1,296) = 116.64$, $p < .001$. The bilinguals' narratives were more error-laced ($M = 4.76$, $SD = 3.91$) than those by the monolinguals ($M = 1.1$, $SD = 1.35$). There was no significant effect of interaction between group and mode, $F(1,296) = 0.47$, $p = 0.492$.

We did not obtain significant effects of the mode across three measures of microstructure (TTR, MLU and atypical patterns). The effect was only revealed for CU, where the children produced more CUs (longer stories) in the retelling mode than in the telling mode. Additionally, we found three interesting effects of group: 1) the monolinguals outperformed the bilinguals in TTR, 2) the bilinguals used more atypical patterns, and 3) the bilinguals outperformed the monolinguals in MLU. These mixed results will be interpreted below.

Discussion

Over the last decade, due to large-scale migration phenomena involving Poles, many Polish children are raised in bilingual environments. Still, studies of the language development of Polish-speaking bilingual children are scarce (e.g. Haman et al. 2017; Marecka et al. 2015; Miękisz et al. 2016; Tamburelli et al. 2015), and none of them have focused specifically on children's narrative production and comprehension. Our large-scale study aimed at examining the narrative abilities of Polish-English bilingual pre- and early-school children raised in the UK.

First and foremost, we wanted to test for the potential positive effects of story retelling on children's performance. Therefore, we compared the narrative production of bilingual children in Polish and English, when they retold stories after an adult model based on picture prompts with the situation when they had to tell told stories on their own, without the model, when the adult could not see the pictures. We aimed to test for the possible retelling effects in the macrostructure and the microstructure measures. Second, we aimed to compare the bilinguals' Polish performance in the telling and retelling modes to that of a comparable group of their Polish monolingual peers, matched one-to-one for gender, age, IQ, and similar SES.

Our first research question concerned the possible improvements in the macrostructure measures for bilingual stories retold in Polish and in English, as compared to their told stories. Based on previous small-scale studies reporting some positive effects of retelling on macrostructure (Kunnari, Välimaa, and Laukkanen-Nevala 2016; Maviş, Tunçer, and Gagarina 2016), we hypothesised that providing a bilingual with model stories should bring improvements in macrostructure in both Polish and English. Our results confirmed this hypothesis. We could observe a clear enhancement in the retold stories for both languages and for all the three macrostructure measures. The quality of the story structure, the use of the mental terms and the understanding of the story significantly increased in the retelling, relative to the telling mode, regardless of the language. For instance, the number of words denoting the mental states of story protagonists in the retold stories increased twice, relative to the stories told spontaneously. Overall, when bilingual children had the opportunity to hear a model story, the macrostructure of their stories improved, regardless of the language.

We obtained comparable scores for the macrostructure measures between the bilinguals' Polish and English, which corroborates earlier findings, where macrostructure measures also remained relatively invariant across each of the children's two languages (Iluz-Cohen and Walters 2012; Gagarina et al. 2016; Pearson 2002; Kunnari, Välimaa, and Laukkanen-Nevala 2016; Fiestas and Peña 2004). Presumably, narrative macrostructure is not entirely dependent on language abilities, but results from transferring the common conceptual base between the languages of a bilingual child. In other words, the relatively invariant structure of narratives across the bilingual child's two languages might mean that the bilingual child's abilities and skills in the first language (L1) can be transferred

into knowledge in the second language (L2), in accordance with the Linguistic Interdependence Hypothesis (Cummins 1979) and the Unified Model of Language Acquisition (MacWhinney 2005). The lack of differences between the languages might also show that the Polish-English bilinguals were fairly balanced, which was not the case in some other studies (e.g. Rodina 2016).

Our second question pertained to the possible differences between the retelling and telling modes in the microstructure measures for the bilingual stories. We hypothesised that the directionality of the effects for the language-dependent microstructure measures might be hard to predict. On the one hand, presenting the child with a model story could improve the lexical and syntactic complexity of the story. On the other hand, it might influence the number of atypical patterns, if the linguistic complexity of the model story was too demanding for his/her proficiency in a given language (see also Gutiérrez-Clellen 2002).

Our results for the microstructure were mixed and more difficult to interpret. The number of communication units (CU) was significantly higher in the retold stories, which indicates an enhancement in the retelling mode. However, contrary to Adlof, McLeod, and Leftwich (2014), there were no effects of the mode for either of the languages for the TTR, MLU. The model story did not have effects on children's lexical productivity because the retold stories were not richer in vocabulary and the children did not build more complex sentences. Still, the retold stories were longer (contained more CUs), which might be attributed to children's attempts to express a more elaborate story structure.

Further, there were clear differences in the basic lexical measures (TTR) and syntactic measures (CU, MLU) between Polish and English in bilinguals. The main effects of language revealed opposite patterns for the lexical and syntactic measures, but no effect of language was observed for the production of atypical patterns. The TTR was significantly higher for Polish, which means that the bilinguals used richer vocabulary in this language, but the syntactic measures (CU and MLU) were higher for English, which means that the children produced more sentences and longer utterances in English. As for atypical patterns, the Polish output was not more 'error-laced' than the English output, regardless of the elicitation mode. Such mixed findings, which do not provide uniform evidence of the bilinguals' proficiency in lexical and morpho-syntactic aspects, were also reported in other studies (e.g. Rodina 2016).

Our last two research questions investigated whether the Polish stories retold by the bilinguals and monolinguals differed in terms of story macrostructure and microstructure, relative to their told stories. The bilinguals and monolinguals in the study were matched in order to ensure that any differences between the groups could be attributed to the language status (bilingual vs. monolingual), and not to other factors known to affect the narrative performance, such as intelligence or environmental differences related to SES (see Hoff 2006 for discussion). In line with the previous studies (e.g. Morrow, Sisco, and Smith 1992; Morrow 1985; Isbell et al. 2004), we assumed that there should be improvements in the narrative retellings in comparison to the telling mode for both groups tested (monolinguals and bilinguals) in the macrostructure measures in Polish. Most importantly, our analyses revealed such improvements in all macrostructure measures in the retelling mode. Relative to the telling mode, the stories retold by the children improved in terms of story structure, the use of mental terms, and story comprehension. This clear effect of retelling was found regardless of the group status, i.e. regardless of whether we tested monolinguals or bilinguals. Furthermore, we found that when narrating in Polish, the bilingual and monolingual children did not differ in terms of macrostructure measures. Since there was no effect of group, the positive effect of the retelling mode is even more visible. This once again indicates that the ability to narrate might be a manifestation of children's cognitive development, and thus is more age-dependent, rather than language-dependent, as proposed by Berman and Slobin (1994). In the case of children of school entrance age, who still have little experience in storytelling, cognitive abilities play a crucial role in how well they construct a coherent story.

When it comes to the microstructure measures, our expectations were more cautious because we had no baseline to examine the directionality of the effects. In the results, we generally found no positive effects of the retelling mode for the TTR, MLU and atypical patterns in the monolingual and

bilinguals stories told in Polish. It was only for the CU that both groups obtained higher scores in the retelling than in the telling, suggesting that after listening to an adult model children tended to produce longer stories. Importantly, however, we found effects of group, such that the narratives produced by the bilinguals and monolinguals differed significantly in microstructural lexical and syntactic measures. The TTR showed that the monolingual stories were richer in vocabulary in comparison to the bilingual ones, regardless of mode. The stories also differed at the level of a trend in the number of CUs in favour of the monolinguals.

An interesting finding concerned the MLU and the atypical patterns between the bilingual and the monolingual groups. Although the bilingual Polish stories contained a higher number of atypical patterns than the monolingual stories, the MLU remained significantly higher for the bilinguals, relative to the monolinguals, and regardless of mode. These may look like conflicting findings because the number of atypical patterns indicates that the bilingual children exhibited lower morpho-syntactic skills in Polish than the monolinguals, while a higher MLU is commonly supposed to be a marker of the child's better syntactic development. In fact, in many studies bilinguals tend to lag behind monolinguals in the MLU (Blom 2010; Rodina 2016; Pearson 2002).

These two seemingly conflicting findings can be interpreted together from a more qualitative perspective. In our study, bilinguals indeed produced more atypical patterns than monolingual children. In particular, the bilinguals tended to overuse function words, and especially pronouns, in ways that cannot be counted as errors in Polish, but are rather atypical in monolingual children's speech (Smoczyńska 1986). First, they overused overt pronominal subjects, necessary in English, but superfluous in Polish, which is a pro-drop language where such subjects are redundant. Second, although in Polish there are no articles, the bilinguals tended to insert demonstrative and possessive pronouns in those places where in English a definite article would be expected. They also inserted indefinite pronouns, where in English an indefinite article would be used. This is well-illustrated in the fragment of a narrative told by a bilingual girl aged 65 months (CHAT transcription simplified, overused function words written in bold and underlined, errors and disfluencies deleted for clarity; English translation in italics).

*CHI: A potem **jakaś** wielka kózka zobaczyła, że on tam wpadł (…)
  *Then **some/a** big goat saw that he fell in there*.
*CHI: I potem **jakiś** lis podglądał (…)
  *Then **some/a** fox was watching*.
*CHI: Kiedy **ta** mała kózka wyszła, to lis wyskoczył.
  *When **the/this** small goat got out, then the fox leaped out*.
*CHI: I **ta** kózka się bardzo wystraszyła.
  *And **the/this** goat was really scared*.
*CHI: I **on** złapał ją za tylną nogę.
  *And **he** grasped her hind leg*.
*CHI: A potem **jakiś** ptak podglądał jak **ten** lis to robi.
  *And then **some/a bird** watched how **the/this** fox was doing that*.

A parallel story by a monolingual girl aged 65 months is presented below (the articles and overt pronominal subjects in the English translation are replaced by Ø to illustrate that they are non-existent in Polish). All Polish utterances are grammatical.

*CHI: Koziołek wpadł do rzeki.
  Ø Little-goat fell in Ø river.
*CHI: I tata go wyciągnął.
  And Ø daddy took him out.
*CHI: Później przyszedł lis i go złapał za nogę.
  Then Ø fox came and caught him by Ø leg.

*CHI: Później kruk złapał lisa za ogon.
   Then Ø raven caught Ø fox by Ø tail.
*CHI: I później popędził za lisem.
   And then Ø chased Ø fox.

As demonstrated, the unnecessary uses of pronouns in Polish by bilinguals inflate the MLU. The bilingual example above calls for caution in interpreting the MLU results in languages that are markedly different morpho-syntactically, in particular when comparing inflectional and isolating languages. It demonstrates that a higher MLU in the bilingual group should not necessarily be interpreted as a bilingual advantage. Our results show that the overuse of pronouns may be specifically related to transfer from a language that features certain grammatical categories (overt pronominal subjects, articles) to a language where those categories are non-existent or unnecessary, because they are realised in other ways.

Conclusions and practical implications

In conclusion, in comparison to the situation when the child tells the story without any model, the macrostructure of the narrative and its length increase when the child is presented first with a well-structured and coherent model story and then asked to retell the story. This is regardless of the language used, and regardless of whether the child is monolingual or bilingual. Since previous studies on narrative retellings in bilinguals (Kunnari, Välimaa, and Laukkanen-Nevala 2016; Maviş, Tunçer, and Gagarina 2016) examined a much smaller number of bilingual children (16 and 13, respectively), our study is the first to reliably demonstrate the effects of retelling on a sufficiently large sample, and with no regards to the bilingual's language. Our study is also the first to demonstrate a carry-over of the macrostructure elements across the child's languages in a previously unstudied language pair, Polish and English. Crucially, the modelling effects are reliably measured because the MAIN offers picture story prompts of comparable difficulty and parallel structure (Gagarina et al. 2012, 2016). Since the picture stories used as prompts for the telling and retelling in the two languages were comparable, we can rule out the possibility that the increase in the macrostructure and length of the retold stories was random, or that it depended on either using an easier story for retelling, or on the learning effect (e.g. using the same story twice). Our results might be even more pronounced, if the study had included a control group of English-speaking monolingual children, which should be taken into consideration in the future.

As for future studies, we should acknowledge some caveats, which inevitably apply to this research, and which were also mentioned by Kunnari, Välimaa, and Laukkanen-Nevala (2016). The retelling mode seems less demanding for the child than the telling mode. If the child is asked only to retell the story without the prior telling condition, as in many previous studies (Altman et al. 2016; Maviş, Tunçer, and Gagarina 2016; Rodina 2016), the results for narratives produced after the model may not entirely reflect the child's capacity to produce a narrative independently. Thus, our study highlights the importance of using different elicitation modes and different storytelling conditions (c.f. the discussion on shared and non-shared attention in Bokus 1991) also when assessing the narrative abilities of bilingual children.

Finally, our findings have practical and educational implications. Narrative abilities belong to the sphere of emergent literacy, i.e. fundamental language skills that have a bearing on the child's future educational success (Whitehurst and Lonigan 1998; Dickinson and McCabe 2001). The literacy practices of bilingual families, especially those living in migrant contexts, depend on the socio-linguistic background of the family, the identities of the parents and their attitudes towards the languages involved (Gagarina et al. 2014). The practices affect the child's language acquisition and maintenance because the quality and quantity of input the child receives are strongly influenced by the context of exposure (home vs. community language), and the relative prestige of the languages (Oller, Pearson, and Cobo-Lewis 2007; Armon-Lotem, de Jong, and Meir 2015). Since retelling after a model story can be used as a training strategy for monolinguals (Morrow 1985), and because our results show

comparable positive effects of renarration for both monolinguals and bilinguals, we suggest that using the renarration strategy may become a crucial training tool for bilingual children whose linguistic resources are still limited, and who need models and scaffolding to develop narrative skills. Thus, the study on Polish-English bilinguals raised in the UK might be the first step in designing appropriate interventions for bilingual children in any of their languages. Our results suggest that introducing renarration as one of the teaching and intervention strategies might bring about positive results in increasing children's narrative skills. We can induce that prolonged and repeated modelling of this kind would result in a lasting improvement in the narrative skills of bilingual children, and, what follows, in developing their literacy in both languages.

Notes

1. In the present study, the retelling mode is such that the child orally repeats the example (model) story that he or she has just heard told by the experimenter, and which is supported by the pictures. We do not claim that the model is supposed to create a script in the child's mind 'what it means to tell a good story'. We only claim that the child can instantaneously use the example/model provided by the experimenter when retelling.
2. The present study used an older version of the MAIN, which had 9 questions, instead of 10 used in the 2012 version. The 10th question was not asked in the study.
3. In the present paper, 'story structure' is calculated by summing the points obtained for the setting and the 3 episodes that compose each story (0–17), and additional points for each full Goal-Attempt-Outcome sequence (0–3). It must be noted though that originally the MAIN manual understood story structure only as the points obtained for the setting and the 3 episodes (0–17) and the GAO structures were counted separately as 'story complexity'.
4. See Table 2 for means and standard deviations for each language separately.

Notes on contributors

Agnieszka Otwinowska-Kasztelanic (Ph.D.) is a research fellow and lecturer in the Institute of English Studies, University of Warsaw, Poland. She specialises in applied linguistics, and psycholinguistics, with her interests focused on bilingual and multilingual language acquisition and language education.

Karolina Mieszkowska (M.A.) is a Ph.D. candidate at the Faculty of Psychology, University of Warsaw and specialises in psycholinguistics. Her research centres on bilingual first language acquisition, especially lexis and discourse and on the theory of mind development in bilingual children.

Marta Białecka-Pikul (Ph.D.) is a research fellow and lecturer at the Institute of Psychology of Jagiellonian University (Krakow, Poland). As a developmental psychologist, she is mainly interested in cognitive and social development, especially in the theory of mind in lifespan perspective.

Marcin Opacki (Ph.D.) is a linguist based at the Institute of English Studies, University of Warsaw. His research interests centre on the study of natural language phenomena using corpora annotated with the aid of formal grammars. In particular, he investigates the applications of corpus-based methodologies in psycholinguistic research and language education.

Ewa Haman (Ph.D.) works at the Faculty of Psychology, University of Warsaw and specialises in developmental psycholinguistics. Her research interests include lexical development in monolingual and bilingual children. She is the co-designer of the Cross-linguistic Lexical Tasks (CLT) for bilingual children, currently available in 26 languages (following collaboration within COST Action IS0804 Bi-SLI; http://psychologia.pl/clts/).

ORCID

Agnieszka Otwinowska http://orcid.org/0000-0002-1127-3982
Karolina Mieszkowska http://orcid.org/0000-0003-3750-0749
Marta Białecka-Pikul http://orcid.org/0000-0002-0909-7123
Marcin Opacki http://orcid.org/0000-0003-3122-3568
Ewa Haman http://orcid.org/0000-0003-1615-711X

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