Discourse cohesion in the elicited narratives of early Russian-German sequential bilinguals*

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This study examines aspects of discourse cohesion in the elicited narratives of early Russian-German sequential bilinguals at age four to six and compares them to the narratives of monolingual Russian-speaking children at the same age as well as to a group of monolingual adults. This examination quantitatively and qualitatively inspects two groups of devices that establish referential and relational cohesion: (anaphoric) pronouns and connectives. The results show that bilinguals of all age groups produce longer utterances and use more word tokens per story in comparison to monolinguals. The younger group of bilinguals demonstrates higher rates of the use of referential and relational cohesive devices. Moreover, in bilingual children the extension of the use of cohesive devices from the local level to the level of more general discourse organization is more pronounced than in monolinguals. This finding is explained as a bilingual advantage over monolinguals reflecting the sensitivity of bilinguals to establishing cohesive ties in discourse. Thus, the results of this study expand evidence showing that advantages of bilinguals over monolinguals in some areas of language and cognitive competence.

Keywords: Russian, German, elicited narratives, early sequential bilinguals, discourse, coherence

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1. Introduction

Elicited narratives as a data source provide a researcher with a wide range of linguistic phenomena for investigation. These include phenomena dealing with the more general features of coherent discourse organization belonging to the macrostructural level or specific grammatical and lexical features/categories within/across sentences or word level which belong to the microstructural level. The present contribution deals with the latter, microstructural, level of discourse organization, and examines means of referential and relational discourse cohesion. In particular, the study addresses quantitative and qualitative use of anaphoric pronouns and connectives (conjunctions as a clause-linking tool are the object of investigation) – devices which play a major role in establishing discourse cohesion (cf. Halliday & Hasan 1976). Under cohesion I understand here "the use of explicit linguistic devices to signal relations between sentences and parts of texts" (Connor 1996: 83). These linguistic devices, both lexical and grammatical, establish relationships across sentences and clauses.

The elicited narratives studied here come from the picture stories of bilingual Russian-German children whose home-language is Russian. Regular contact with German began for these children with their admission to kindergarten at age one to three. This group of bilinguals can be defined either as simultaneous or as early successive: a consensus is far from being in sight. Some researchers define children as simultaneous bilinguals, i.e. learners of two first languages, if they acquire these two languages directly from birth (De Houwer 1990, 1996), or if the onset of second language learning falls within the so-called *critical phase*, which is within the first two years (Tracy & Gawlitzek-Maiwald 2000), three years (Montrul 2008), or four years (Genesee 1989, Genesee & Nikoladis 2007), depending on the researcher. Others argue that early successive bilinguals, i.e. child second language learners, start second language contact/learning within the period between four and eight years (Meisel 2009), or four and six years (Montrul 2008), or three and six years (Paradis 2008). Since the issue of defining the type of bilingualism is beyond the scope of the present article, I restrict myself to labeling the investigated population, whose German learning began between the first and third year of life, as early successive bilinguals. These bilingual children didn't acquire prosodic and functional characteristics of the language at an early preverbal age as monolingual German-speaking children do, so that their bilingual acquisition cannot be considered identical to the monolingual L1 acquisition path and timing of German given the impact of early acquired perceptual knowledge on the later development of language (Höhle, Bijeljac-Babic, Herold, Weissenborn & Nazzi 2009, Höhle, Van de Vijver & Weissenborn 2006, Höhle & Weissenborn 2000, 2003).

Although the essentials of the influence of early bilingualism on children's cognitive and linguistic development are not yet fully understood, the growing body of studies on various aspects of bilingualism show advantages of bilingual children in certain areas of linguistic knowledge, such as, to name just a few, working memory (Yang,

Yang, Ceci & Wang 2005, Bialystok, Craik, Grady, Chau, Ishii, Gunji & Pantev 2005), conversational understanding (Siegal, Surian, Matsuo, Geraci, Iozzi, Okumura & Itakura 2010), pragmatics (Siegal, Matsuo & Pond 2007), and metalinguistic abilities (Bialystok 2004).

1.1 Discourse cohesion and coherence in narratives

Cohesive means in narratives participate in establishing discourse coherence and tying parts of discourse elements together into a meaningful whole; discourse coherence functions as "operational goals without whose attainment other discourse goals may be blocked" (De Beaugrande & Dressler 1996: 11), in which case successful communication will fail. Thus, discourse cohesion and coherence are agreed to be "the cornerstone of comprehension" (Graesser, McNamara & Louwerse 2003: 82). Halliday & Hasan (1976) suggest five types of cohesive means in English, namely reference, ellipsis, substitution, lexical cohesion and conjunctions. These devices can be grouped into those establishing the referential ties (the first four types) and those establishing the relational ties (the final type).

In recent decades, cohesive means of establishing referential linking as part of discourse research have been the subject of intensive investigation within various approaches in theoretical linguistics (Ariel 1990, Givón 1992, Strube & Hahn 1999, Van Hoek, Kibrik & Noordman 1999, Kibrik 2000, Ariel 2001, Kehler 2001, Grüning & Kibrik 2005, Benz & Kühnlein 2008) as well as in psycholinguistics and language acquisition research (e.g. Liles 1985, Bamberg 1987, 1994, McCabe & Rollins 1994, Miranda, McCabe & Bliss 1998, Gutiérrez-Clellen 2002). Researchers agree that referential cohesion is based on repeated reference to the same entity throughout discourse. While this repeated reference exhibits language-specific features in its expression (e.g. various types of NPs, pronominals, etc.), the underlying structure of discourse coherence obeys more universal rules of organization. These hierarchically organized rules define the choice of referring expressions (various linguistic devices) according to the principles of relative accessibility of a referent (Ariel 1990, 2004), so that linguistic devices denoting the repeated reference to the same entity change throughout a discourse. For example, while the first mentions of the main protagonists in the picture story (see appendix) are usually NPs and the subsequent mentions are pronouns, English exploits either indefinite or definite NPs and the pronoun it, and Russian uses a bare NP and the pronouns s/he. In particular, one of the main protagonists can be referred to in English as *a raven*, *the raven*, *it* and in Russian as *voron* 'raven' and *on* 'he' throughout the story; see example (1):

(1) Tam #[1] vorona ili eshche kto-to, ili voron.
there crow-NOM.SG or else somebody or raven-NOM.SG
'There is a crow there or somebody else, or a raven.'

1. The sign # stands for a pause in spontaneous speech production.

On uvidel rybu i chaj ili
he see-PFV.PST.M fish-ACC.SG and tea-ACC.SG or
kruzhku, i potom voron
cup-ACC.SG and then raven-NOM.SG
vzjal rybu, poletel na derevo.
took-PFV.PST.M fish-ACC.SG fly-PFV.PST.M on tree-ACC.SG
'It saw a fish and tea or a cup, and then the raven took the fish and flew onto the tree.'

Research on (narrative) discourse in language acquisition discusses the age and pace of the development of pronominal and nominal referential devices as well as other devices that establish an intact discourse. The majority of these studies deal with monolingual language acquisition and provide contradictory evidence regarding, for example, the age of acquisition: on the one hand, in normally developing children discourse is considered to be one of the most prominent domains of later language development (Verhoeven 1993, see also Karmiloff-Smith 1980, Griffith, Ripich & Dastoli 1986, Ripich & Griffith 1988, Adams 2002); on the other hand, evidence of correct referencing has been found in children as young as three and four years old (Bamberg 1987, Bliss, McCabe & Miranda 1998, Hickmann 2003, Gülzow & Gagarina 2007a).

Fewer studies have dealt with the use of connective devices in children's discourse, although they are "crucial to the construction of a coherent integrated representation of a text, because they are used to provide explicit cues to the dependent relations between events and to establish structural coherence" (Cain 2003: 337). In her study on the production and comprehension of coherent and cohesive stories, Cain (2003) found out that monolingual English-speaking children age 6 to 8 more frequently use connectives in more coherent stories (see Cain & Oakhill 1996). Other studies of monolingual English-speaking children have documented a development of the use of interclausal connectives from age 5 to 10 (Shapiro & Hudson 1991, Stenning & Michell 1985).

Relatively little is known about the construction of cohesive discourse in bilingual children. Previous studies have concentrated on the investigation of one discourse *dimension*, dealing with the use of overt/null pronouns or the types/rates of pronominalization in general, or have examined a variety of discourse features (comprehensive multidimensional approach; Bliss et al. 1998, Miranda et al. 1998, Serratrice 2007a, 2007b, Gagarina 2008a, Sorace, Serratrice, Filiaci & Baldo 2009). In a study on Spanish-Italian bilinguals, Sorace et al. (2009) found that in contexts of referent maintenance in Italian, bilingual children use more superfluous overt pronouns than monolingual children. Serratrice (2007a, 2007b) found that English-Italian and Spanish-Italian bilinguals overuse overt subject pronouns in a broad range of contexts. She argues for the structural priming effect, which is applied to the pronouns: "In terms of the cross-structural priming of pronouns, if reference maintenance is structurally encoded by an overt pronoun virtually 100% of the time in English, the language in which the bilingual child receives quantitatively more input, it is likely that in Italian too overt pronouns will have an increased likelihood of being treated as pragmatically appropriate forms for reference

maintenance" (Serratrice 2007b: 193). Taking into account the implications of the research on discourse in bilingual children, this contribution aims at the examination of two main devices responsible for establishing referentially and relationally cohesive discourse – pronouns and connectives. The first research question addresses a more general narrative characteristic: What are the differences, if any, in the length and MLUw (Mean Length of Utterance in words) of the mono- vs. bilinguals' narratives? The second question is more specific: How do monolingual and bilingual children diverge in their use of cohesive devices, such as pronouns and connectives and do these cohesive devices correlate to the number of utterances with verbs? Bilingual children are predicted to outperform monolingual children in the use of referential and relational cohesive devices, which might be due to two processes involved in the construction of a discourse: pronouns might be frequently used by bilinguals as a compensation for deficiencies in their vocabulary, and the high use of connectives may enable children to establish a local cohesion between propositions, to which bilinguals are sensitive.

1.2 Some facts about the acquisition of Russian

Studies on the monolingual acquisition of Russian have their origin in the pioneering and seminal study of Gvozdev, who kept a diary of the speech development of his son and thoroughly described the development of the lexicon and grammar on the basis of this diary (Gvozdev 1949). His and subsequent studies have shown that Russian-speaking children speedily acquire non-syncretic verb morphology but need more time to learn noun inflection, although they have already acquired both by age three (Babyonyshev 1993, Kiebzak-Mandera 2000, Gagarina 2003, 2008b, Gagarina & Voeikova 2009).

Referencing in discourse, however, presents a different situation. As previous analyses have shown, Russian-speaking monolingual children are much closer to the adult distribution of pronominals and noun phrases, even in the youngest age group, in comparison to German-speaking monolingual children. From age two and a half a steady approximation trend towards the adult proportions of cohesive referential devices in narrative discourse has been observed (Gülzow & Gagarina 2007a). This early acquisition of the correct use of anaphoric pronouns in narratives is explained by a more transparent form-function mapping within the system of pronouns in Russian as compared to German. As one dimension of discourse cohesion, the rate and type of anaphoric pronominalization in the narrative discourse of Russian-German five-year-old bilingual children was investigated by Gagarina (2008a). The results show that the German narratives of consecutive bilinguals demonstrate a lower pronominalization rate as compared to monolingual German-speaking children's narratives and to their own Russian narratives. Language-specific organization of the pronominal systems as well as language-specific structural features, such as pro-drop, are argued to have an impact on this pronominalization rate in discourse.

A number of recent studies have dealt with the attrition of Russian in bilingual children. Although these studies don't address discourse cohesion directly, their results

are of relevance for the present contribution. It is known that the lexicon of bilingual children is poorer in comparison with that of monolingual children (Meng 2001, Cobo-Lewis, Pearson, Eilers & Umbel 2002, Windsor & Kohnert 2004, Klassert, Gagarina & Kauschke 2009, Hoff, Core, Place, Rumiche, Señor & Parra 2012) and that verbs are more robust than nouns in the less dominant or weakening language (see evidence for L1 Russian in Polinsky 2005 and Klassert 2011). While in monolingual children vocabulary steadily develops up to school age and beyond, bilingual children show a loss of already acquired grammatical features and lexical verbs; instead, the light verbs increase with age (see evidence for L1 Russian in Gagarina 2011). In the data investigated here, such a situation might cause poorer verb production, which, in its turn, might lead to less cohesion in narrative discourse and to a high amount of code-switching, interferences, verb errors, etc. On the other hand, a higher level of intact discourse in the narratives may be an effect of bilingualism itself – bilingual children have been shown to have advantages in cognitive and linguistic abilities essential for discourse organization (see the references on page 2).

2. Method

For this study, the elicited narratives – the so-called Fox Story (Gülzow & Gagarina 2007a, see Appendix) and the Cat Story (Hickmann 2003: 344) – of 60 Russian-German early sequential bilinguals age four to six, of 36 Russian-speaking age-matched monolinguals, and of a control group of monolingual Russian-speaking adults were analyzed (see Table 1). The group of the bilingual population was kept as homogeneous as possible: all the children are first generation immigrants; both parents speak Russian as their mother tongue at home. The onset of regular exposure to German coincided with the admission to kindergarten between age one and three years. All children had had at least one year of exposure to German. Thirteen six-year-old children participated in bilingual programs where they (a) were taught both in Russian and in German in a bilingual school or (b) received support in Russian in after-school courses.

Table 1. Participants in the study and their ages

	Number of participants		Mean age in months (Standard Deviation (SD))	
	Monolinguals	**Bilinguals**	**Monolinguals**	**Bilinguals**
4 year olds	12	20	54 (4.0)	54 (3.1)
5 year olds	12	20	66 (2.1)	67 (2.7)
6 year olds	12	20	74 (1.6)	78 (3.8)
Adults	20			
Total	56	60		

All participants in the study underwent the same experimental procedure during which their narratives were elicited: first, they were shown the six individual pictures of one of the stories, which were placed in the correct sequence in a single, horizontal row in front of the participant. The experimenter allowed the participant to look at the pictures for a minute or two to get the gist of the story. Then the pictures were taken away and were placed anew in a two-picture sequence, so that the participant could see only two pictures in a row step-by-step while s/he was telling the story: picture 1 was placed in front of the participant with the request to start telling the story. When the participant stopped narrating, picture 1 was moved to the left and picture 2 was placed on top of picture 1; then picture 3 was placed next to the stack containing pictures 1 and 2, etc., so that the participants always saw two pictures in order to be able to 'keep track' of the story. The experimenter refrained from asking questions like *What's this*? in order not to provoke naming. Instead, the experimenter encouraged the participants to narrate by asking questions like *What's happening now?* and *How does the story continue?*

The narratives were transcribed according to the CHAT regulations (MacWhinney 2000). Morphological tagging was conducted with a special program developed for Russian spontaneous speech, MORCOMM (Gagarina, Voeikova & Gruzincev 2002), and additional manual coding of the reference coherence was carried out for all main tiers.

3. Results and discussion

The results will be presented in two steps. In the first step, a general characterization of the elicited narratives, i.e. the length of the narrative in utterances and the MLU in words (MLUw), is given. In the second step, the main set of results is presented: the proportion of the use of anaphoric personal pronouns and connectives (the conjunction word class only in the investigation here) and the contexts of their use.

Table 2 gives a general overview of the length of the stories, measured in the number of utterances and MLUw. Segmenting oral language samples into utterances, turns, etc. and the precise definition of the borders of an utterance create difficulties for those working with spontaneous data. While some suggestions for language segmentation deal with a so-called communication unit, a somewhat shorter segment of oral speech consisting of an independent clause with its modifiers (for a definition see Loban 1976 and Hughes, McGillivray & Schmidek 1997), for this study a measure of dividing spontaneous speech into utterances based on intonational patterns and the length of a pause according to Brown (1973) was used. This way of defining utterance borders was more appropriate because the participants' stories were elicited by means of separate pictures (compiling a story) and the speech was delimited according to a single picture.

As depicted in Table 2, bilingual children decrease the length of their stories from age 4 to 5, while monolingual children increase the length of their stories from 10.75 utterances at age 4 to more than 17 utterances at age 6, so that the difference between

Table 2. An overview of the general narrative features

	Length of story in utterances		MLU in words	
Age (in years)	Bilinguals (SD)	Monolinguals (SD)	Bilinguals (Overall Tokens)	Monolinguals (Overall Tokens)
4	14.05 (5.29)	10.75 (2.24)	5.640 (1596)	4.755 (600)
5	11.85 (4.62)	14.41 (4.21)	4.058 (1584)	5.134 (874)
6	11.95 (3.45)	17.75 (5.98)	6.843[2] (1567)	5.298 (1101)
adults		10.89		6.508 (1772)

bilingual and monolingual children becomes more considerable and reaches a significant level with 6-year-olds (Mann-Whitney-U = 47.000; p = 0.004). The standard deviation decreases in the bilingual group towards 6-year-old children, whereas in the monolingual children it increases.

The MLUw steadily increases in monolingual children, although the sentences are longer in 4- and 6-year-old bilingual children and the overall number of tokens is generally higher in all groups of bilingual children in comparison with monolingual children. Although in monolinguals the number of tokens per story increases from 600 words at age 4 to 1101 words at age 6, this latter number is still lower than in all groups of bilingual children, who use – at all ages – more than 1500 words in their stories. In sum, bilingual children produce elicited narrative with fewer utterances, but these utterances are longer (i.e. contain more tokens per story). This might have various causes: some children might have longer insertions of code-switching elements or have problems in utterance termination and in correct segmentation during narrative production; other children may possess advanced narrative abilities, given that more than half of the 6-year-old bilingual children attended educational programs supporting their L1 Russian. Compare the two sentences of a bilingual child in example (2) and the three short sentences of a monolingual child in example (3).

(2) I vot ona sidit, smotrit,
and here she sit-IPFV.PRS.3SG look-IPFV.PRS.3SG
kuda zhe poletish'*@error*[3], chtob
where PART fly-PFV.FUT.2SG in-order-to

2. The MLUw in one outlier, the bilingual child *112, is 3.500. The number in the main table is given without this outlier; the inclusion of the MLUw of this child results in a mean of 5.172.

3. The child uses the erroneous form *poletish'* (fly-PFV.FUT.2S) instead of the required infinitive *poletet'*.

detkam kushat' prinesti. (*028, bil, 6;6)[4]
child-DAT.PL.DIM eat-IPFV.INF bring-PFV.INF
'And it is sitting, looking where to fly in order to bring children to eat.'

I vot koshka na derevo &pole[5] &po # &hm,
and PART cat-NOM.SG on tree-ACC.SG
polezla i sxvatila detej.
climb-PFV.PST.F and grab-PFV.PST.F children-ACC.PL
'And now, the cat climbed on the tree and grabbed the children.'

(3) Ptica xotela vzjat' rybu.
bird-NOM.SG want-IPFV.PST.F take-PFV.INF fish-ACC.SG
'(The) bird wanted to take the fish.'
I vzjala.
and take-PFV.PST.F
'And took (it).'

Potom zalezla na derevo. (*070, monol, 6;3)
then climb-PFV.PST.F on tree-ACC.SG
'Then it climbed on the tree.'

Example (2) of the bilingual child is representative in the sense that although this child exhibits some disfluency in the narrative production, her sentences are longer and contain more complex elements establishing a coherent discourse: the connectives *chtob* 'in order to' and *i vot* 'and so'. The girl attempts to use the proper verb 'polezla' by uttering *&pole &po,* interrupting herself, inserting a pause # and a discourse filler *hm*, and then finally coming to the proper verb form.

The next analysis presents the use of connectives (see Figure 1) and examines the correlation between verb utterances and the production of coordinating and subordinating structures. Since verbs are considered to be one of the triggering factors for the production of full (and complex) sentences, this type of correlation is a further important indicator of the development of narrative discourse competence. While in bilingual children a significant correlation (Spearman = 0.368*, p = 0.012) was found between the increase in the use of utterances with lexical verbs and of connectives, in monolingual children this correlation is highly significant (Spearman = 0.367**, p = 0.007).

Connectives join parts of discourse/text on a relational cohesion level and don't represent one word class *per se*, but include prepositional phrases and the word classes of conjunctions, particles, and adverbs. For the present study (a) the connectives belonging to the class of coordinating conjunctions: *i* 'and', *a* 'and/but', *no* 'but' and their 'derivations' *i/a potom,* 'and then', *i vot* 'and here then' (Tribushinina, Gagarina & Valcheva forthcoming), and (b) the connectives establishing subordinating relations:

4. 6;6 defines the age of the child and means 6 years and 6 months.

5. The sign & in front of a word means that this word is not calculated as part of a sentence and is not tagged with morphological categories.

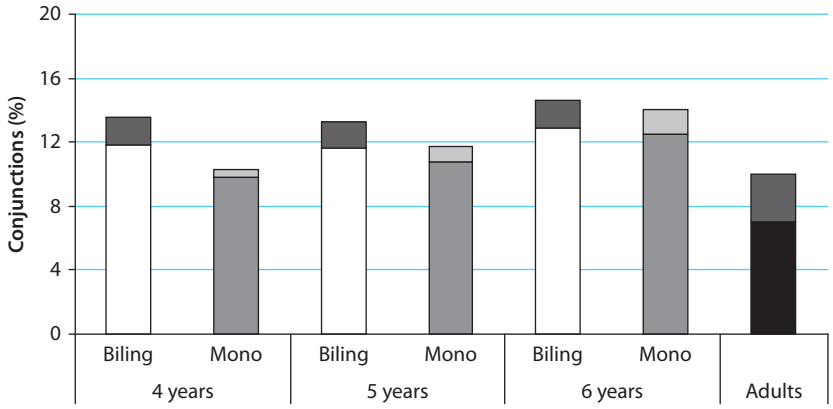


Figure 1. Conjunctions (connectives) out of all tokens. Upper parts of the bars: connectives as subordinating conjunctions; lower colored parts of the bars: connectives as coordinating conjunctions

chtoby 'so that', *esli* 'if', *kogda* 'when', *kuda* 'where', *potomu (chto)* 'because', etc., were considered.

As Figure 1 demonstrates, the two groups of children use the coordinating conjunctions from early on, and in monolingual children its amount even increases with age. While the difference in the use of coordinating conjunctions between the children and the adults is not significant at the beginning, it reaches a level of high significance with 6-year-olds (Mann-Whitney-U = 58.00; $p < 0.05$). Such use of coordinating connectives can be explained by the growing awareness of children of coherent discourse, so that they develop a strategy to help them connect the parts of the story/utterances they produce: *and the bird flies, and it saw the fox, and it jumped,* or *it saw the bird and then it took, and then the dog came*, *and then it ran away* (cf. Bamberg 1987 on the fact that children at age six reach adult performance in narrative discourse). The bilingual children at all ages use more coordinating conjunctions overall than their monolingual peers. A more detailed look at the group of coordinating connectives reveals that the clear majority of them is *i* 'and': 65% for bilinguals and 51% for monolinguals. This overuse is due to the non-target children's production. Examples 2 to 5 give a taste of the frequent use of *i* 'and' (also *i potom* 'and then'), which begins a large number of clauses. The overused *i* 'and' is a typical device to establish a tie to subsequent propositions and to keep the discourse moving as in examples 4 and 5. It might also function as a marker of topicalization of an action, as in example 3 *hotela vzjat' rybu. I vzjala* 'wanted to take the fish. And took'.

The use of subordinating conjunctions in all groups of children is lower than in adults, though bilinguals of all ages produce a higher number of these conjunctions than monolinguals. This poor, but not surprising, production might have its roots in

their frequency in adult speech and the functional domain they cover. The subordinating conjunctions are very infrequent in the adult narratives, less than 4% of all tokens. Since frequency has been shown by numerous studies to have an impact on child language acquisition (Tomasello 2003, Bybee 2007, Gülzow & Gagarina 2007b), this might partially explain the findings. Not only do children seldom hear subordinating conjunctions, but they also have to master their more complicated functional domain, since this type of conjunction doesn't express purely additive or linear sequential relations, but deals with more complex semantic relations such as causality, which belong to the domain of later language acquisition (Bloom, Laheya, Hooda, Liftera & Fiessa 1980, Peterson & McCabe 1987).

The final analysis provides an overview of the pronominalization rate as one of the cohesive devices in discourse. Figure 2 indicates that bilingual children overuse anaphoric personal pronouns in the two early groups (Mann-Whitney-U = 65.00; $p < 0.05$) and slowly approach the adult measures, while monolingual children already use the target number of pronouns by age three (this latter finding for monolingual children has been discussed in detail in Gülzow & Gagarina 2007a).

A closer look at the contexts in which bilingual children produce pronouns reveals that children adopt the tactic of *repeated structures:* once the child compiles a structure, he applies it several times in his storytelling, as in example (4). During such repetition the topic maintenance in discourse might be impaired.

(4) Potom ona, &hm, sidela, sidela.
then she sit-IPVF.PST.F sit-IPFV.PST.F
'Then it was sitting, sitting.'

i potom ona, &hm, lezla, lezla. (*011, bil, 4;3)
and then she climb-IPFV.PST.F climb-IPFV.PST.F
'And then it was climbing, climbing.

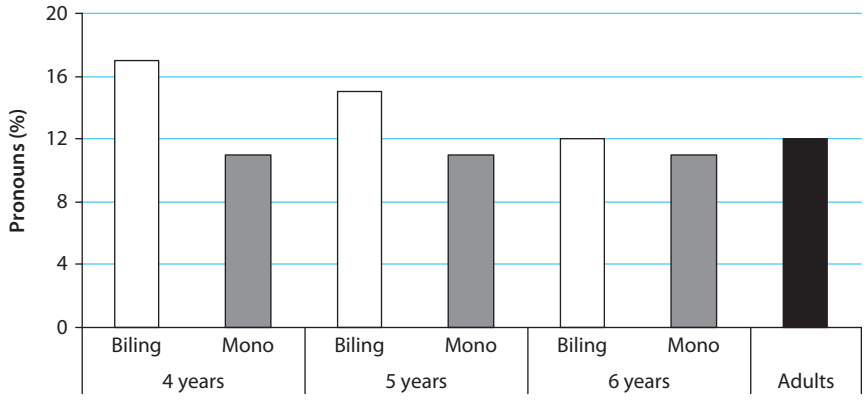


Figure 2. Pronouns out of all tokens

Another explanation of the overuse of pronouns might be rooted in the bilingual lexicon problems: as was mentioned above, numerous studies have demonstrated that bilingual children exhibit poorer verb vocabulary than monolingual children. It may be the case that as a consequence of such poor lexical skills, bilingual children use pronouns; their lexical abilities increase towards the older group, so that the bilinguals augment the number of NPs. Finally, the influence of non-pro-drop German is seen in the too frequent use of overt subject pronouns in sentences in which zero pronouns are admitted in Russian. In example (5) the child uses the repetition of the structure *i ona ego* + *Verb* 'and she it + Verb':

(5) I ona ego vzjala v rot,
and she him take-PFV.PST.F in mouth-ACC.SG
i ona ego xotela otnesti obratno (*022, bil, 4;9).
and she him want-IPFV.PST.F bring-PFV.INF back
'And it (the bird) took it (the fish) into the mouth and wanted to bring it back.'

A closer look at the type of anaphoric pronominalization (Table 3) shows that, in comparison with the other groups, the youngest group of bilingual children most frequently (a) uses pronominal anaphors referring to the subject, 57.1%, and (b) establishes cohesion on the local discourse level, i.e. uses anaphors referring to an antecedent in a previous proposition, 38.6% (for the definition of a proposition or a communication unit, see Hughes et al. 1997).

Bilingual children develop the ability to use referential cohesive devices with age: towards the group of 5-year-olds the number of anaphors connecting two neighboring propositions decreases by approx. 30% and the means of longer-distance cohesion (two to five propositions backwards) develop. Monolingual children don't show crucial changes in their abilities to referentially connect distant propositions: in the two older groups, around 32% of pronominal anaphors refer to an antecedent in a previous proposition.

Table 3. Pronouns: all pronouns referring to the subject (% of tokens out of all pronoun tokens) and all anaphoric pronouns referring to an antecedent in a previous proposition (% of tokens out of all pronoun tokens)

	Subject pronouns		**Anaphors referring to an antecedent in a previous proposition**	
	Bilinguals	**Monolinguals**	**Bilinguals**	**Monolinguals**
4-year-olds	57.1	18.9	38.6	27.0
5-year-olds	39.2	33.7	29.7	32.7
6-year-olds	45.8	33.9	30.7	32.3
Adults		35.5		69.5

A note on code-switching should be added. The narratives were elicited in a strict one-language-modus and the experimenter was a native speaker of either language in order to decrease the number of instances of code-switching: in all the bilingual data, the amount of code-switching comes to 89 instances, which is 0.8% of all tokens. The clear majority of this code-switching is found in referring to the main protagonists of the story: German *Hund* 'dog' for *sobaka*, *Katze* 'cat' for *koshka*, *Vogel* 'bird' for *prica*, *Schwanz* 'tail' for *hvost*; in the youngest group, for example, code-switching in these nouns constitutes 83% of all instances of code-switching.

4. Conclusion

To recapitulate, the present contribution quantitatively and qualitatively inspected two cohesive devices participating in the establishment of referential and relational discourse coherence: anaphoric pronouns and connectives. The empirical material for this study consisted of the elicited narratives of Russian-German bilinguals age four to six, which were compared with the narratives of Russian-speaking adults and monolingual children in the same age range. The results show that the youngest and the oldest groups of bilingual children produced longer utterances than their monolingual peers and used more word tokens per story, although the length of their stories (measured in the overall number of utterances) was smaller. Furthermore, as far as the use of referential and relational cohesive devices in the narratives is concerned, the youngest group of bilingual children used them considerably more often than the monolingual children at all ages. The qualitative analyses of relational devices showed that bilingual children, already in the youngest group, outperform monolinguals in their use of subordinating conjunctions: they produce more diverse conjunctions and apply them to a greater variety of linguistic structures. This finding may be explained as reflecting the sensitivity of bilinguals to establishing cohesive ties in discourse. Since bilingual children, although having been shown to have more restricted vocabulary resources, use more devices to link sentences and propositions in discourse; they can be seen as being more proficient in matters of microstructural discourse organization and more sensitive to the means of discourse coherence. This extends the areas in which bilingual children have already been shown to have advantages over monolinguals (see Section 1), such as: working memory (Yang et al. 2005, Bialystok et al. 2005), pragmatics (Siegal et al. 2007), metalinguistic abilities (Bialystok 2001, 2004), conversational understanding (Siegal et al. 2010), and attentional and executive control processes (Carlson & Meltzoff 2008).

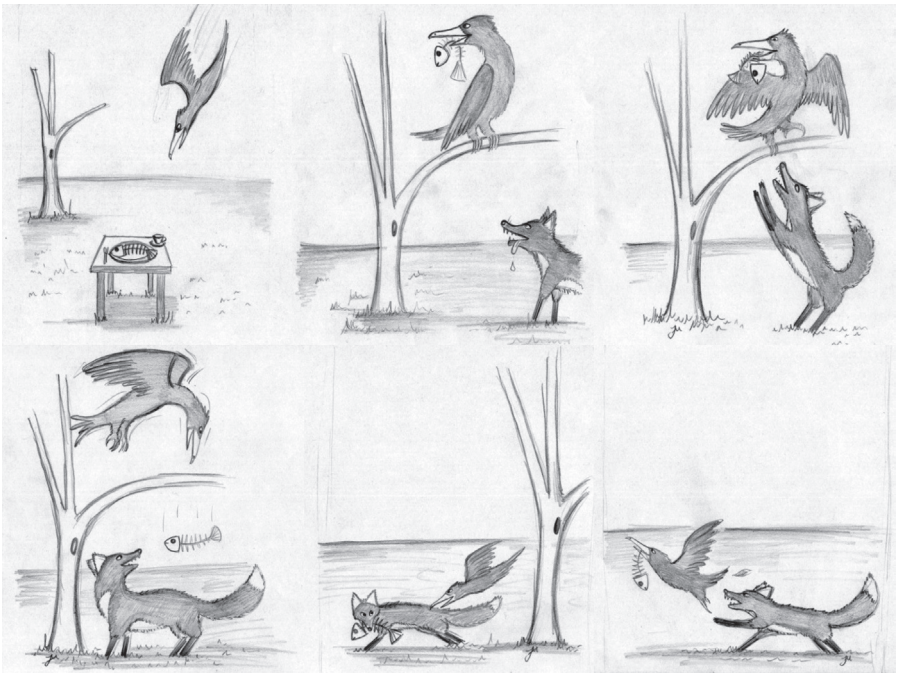
The use of referential devices provides somewhat more controversial results. While the youngest bilingual children use pronouns referring to the subject more often than monolinguals, this situation becomes more comparable in the two older groups. The youngest bilingual children show the highest proportion of pronominal anaphors which refer to an antecedent in a previous proposition, thus showing the early

mastering of the use of cohesive devices on a microlevel of discourse structure. In sum, the findings of this study add to the areas of language and cognitive competence in which bilingual children have been shown to have advantages over monolinguals (Diamond 2010) and bring evidence of earlier abilities of these children to connect parts of discourse in a meaningful text by the referential and relational devices at their disposal.

Hopefully, further studies might resolve the controversy regarding the advantages vs. disadvantages of bilingualism that are currently the topic of discussion. On the one hand, research has shown that bilinguals "develop a specific type of cognitive benefit during infancy, and bilingualism offers some protection against symptoms of Alzheimer's dementia in old people" (Diamond 2010: 332); on the other hand, the public discussion often points to the disadvantages of many bilingual children with migration backgrounds.

Appendix

The Fox Story



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