LITHUANIAN NARRATIVE LANGUAGE AT PRESCHOOL AGE

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Abstract. The paper deals with the main linguistic indications of Lithuanian preschoolers' narratives. The analysis is based on experimental data of 24 typically developing monolingual Lithuanian children (6–7 years of age) from middle-class families, attending a state kindergarten in Kaunas (Lithuania). During the experiment, the children were asked to tell a story according to the *Cat Story* (Hickmann 1993) picture sequence. The stories were recorded, transcribed and annotated for an automatic analysis using CHILDES software. During the analysis, the syntactic complexity, lexical diversity, and general productivity (MLUw and type/token ratio) of the narratives were investigated. The results indicated the main microstructural tendencies of Lithuanian narrative language at preschool age.*

Keywords: narrative analysis, child language, language acquisition, Lithuanian

1. Introduction

During the last few decades, the literacy and general language development of school-age children seems to have become a problematic area. In Lithuania, as well as in other countries (Gardner et al. 2006, Topaj, Gagarina 2009), speech therapists, psychologists and teachers observe an increasing number of children with language disorders (SLI, dyslexia, etc.) or delay who need a speech therapy and/or the help of special needs teachers. Although we still need comprehensive statistical data about language impairments in Lithuanian children, one can observe that impaired phonology, grammar and narrative skills tend to complicate the whole process of learning (not languages only, but also other subjects), lead to low academic results and cause demotivation for learning. Thus language and early literacy development has to be investigated in order to a) indicate the typical development of Lithuanian

spoken and written language, and b) to identify children, whose language may be impaired.

Various models and methods for analysing linguistic competency have been developed. One of them, analysis of narrative skills, has been applied in many studies in psycholinguistics (Caramelli et al. 1998, Batoréo, Costa 2000, Atance, O'Neill 2005), neurolinguistics (Davenport et al. 1986, Baltaxe, D'Angiola 1992, 1996, Juncos-Rabadán et al. 2005, Boudreau 2008), and sociolinguistics (Benson 1997, Bokus, Wales-Shugar 1998, Fiestas, Pena 2004), for a number of reasons. Following Hayward and Schneider (2000), narratives "constitute instances of language in use rather than in isolated components out of context; they are an integral part of everyday social interactions and the school curriculum". The narratives are "typically monologues that have a recognizable beginning and end, thus are relatively easy units to identify; they are also familiar to people of all ages, excepting only infants and toddlers" (Peterson, McCabe 1991). Narratives "play a critical role in the development of discourse, literacy, and socialization abilities" (McCabe 1996). Children's oral narrative skills "are considered a key resource when children begin the important transition from oral to written communication" (Hayward, Schneider 2000) and can be early predictors of risk of reading difficuties. Following Bliss et al. (1998), narrative discourse should be a major component of assessment and intervention programs for school-age children with language disorders.

Researchers have developed various models for analysing narrative competency. One such model is the analysis of narrative microstructure characterized by a set of linguistic indications, such as productivity, lexical diversity, syntactic complexity (Loban 1976, Hughes et al. 1997, Mäkinen, Kunnari 2009, Soodla 2011), and internal linguistic structures used in narrative construction (Justice et al. 2008). Apart from that, other models for analysing narrative competency have been developed, such as the analysis of macrostructure and story grammar (Stein, Glenn 1979, Berman, Slobin 1994). In this study, the microstructure was selected for the narrative, because linguistic indications can be measured automatically by using special software (such as CHILDES, SALT, etc.), and this leads to more objective and reliable interpretation of the results.

The majority of narrative studies are still based on data from English speaking subjects (Labov, Waletzky 1967, Loban 1976, Shapiro, Hudson 1989, Shapiro 1990, Reilly et al. 1998, Ulatowska et al. 2004, Markowiak 2005), but during the past couple of decades, more languages have been involved in narrative studies, e.g.; Polish (Wales-Shugar 1998, Kielar-Turska 1999), Swedish (Nordqvist 1998), Georgian (Imedadze, Shartava 1999), Portuguese (Jakubowitz-Batoréo 1999), Turkish (Kyuchukov 2000), Russian (Ovchinnikova 2005, 2007), French (Veneziano 2009, Veneziano, Hudelot 2009), Estonian (Soodla, Kikas 2010, Soodla et al. 2010, Soodla 2011) and Lithuanian (Lemanaitė-Deprati 1999, Balčiūnienė 2011). Cross-linguistic investigations have been carried out also (Berman, Slobin 1994, Bamberg 1997, Nicolopoulou et al. 2011). These studies have identified general tendencies of narrative acquisition and revealed many contextual factors which may influence narrative comprehension and producion.

Although the importance of narrative comprehension and production tasks is highlighted in Lithuanian law (*Curriculum Framework for Primary and Basic (Lower Secondary) Education*, 2008) and didactic literature (Gaulienė et al.

2000), narrative studies in Lithuania are still at the earliest stages. Taking this fact into account, investigations of any sample (both children and adults; monolingual and bilingual; typically developing and impaired subjects) are necessary in order to identify general tendencies of Lithuanian narrative production. However, the sample of monolingual typically developing Lithuanian preschoolers was selected for a number of reasons. During the preschool and early school years, "children become members of their culture as they acquire the patterns of acting, speaking, and thinking used by their parents and peers. Following Vygotsky, we can view this acquisition process as involving internalization of the culture's modes of thought, action, and consciousnesses" (Dickinson 1991). Preschool age is considered critical for the transition from oral to written communication, which appears to be crucial for the later development of literacy and academic attainment. There is evidence that children "who have not mastered the ability to produce adequate narratives when entering Grade 1 have difficulty in making the transition to written texts" (Bliss et al. 1998, citing Peterson 1993) and consequently have more difficulties in learning both languages and other subjects. Thus narrative and general language skills at preschool age should be investigated in order to indicate the standards of this age group and to identify children who need language therapy or a help in learning the written language.

2. Data and research method

The subjects of the study were 24 children (mean age 82 months) from middle-class families, attending state kindergarten in Kaunas (the second largest city in Lithuania). An equal number of boys and girls were selected from those children whose parents provided written permission for them to participate in the national scientific project *Lietuvių vaikų kalba: įtakos ir tendencijos*. A picture sequence, the *Cat Story* (developed by Hickmann 1993), was selected for eliciting children's narratives. The sequence consists of six black-and-white pictures (10 x 13 cm), without a text. There are four protagonists in the sequence: a mother bird, chicks, a cat, and a dog.

An experimenter tested each child individually, in a quiet room in their kindergarten. First, for warming-up, each child was asked, whether he/she likes fairy-tales and stories, who tells stories to him/her, and then the experimenter said: "Today I would like you to tell me a story." The experimenter took the pictures and continued: "This is a story in these pictures. First I'll show you all the pictures, and then you look at each picture carefully and tell me the story you see." Then the experimenter placed the pictures in the correct sequence in a single, horizontal row in front of the child, without saying anything except, "The story starts like this…". The child was allowed to look at the pictures for a minute or two to get the gist of the story. Then the experimenter said: "Now I want you to tell the story. This is the beginning of the story. Look at the pictures and try to tell the best story you can." No questions such as "What is he/she doing here?"; "What is this?"; "Who is coming?", etc., were used in order not to disrupt or influence the child's narration. Allowable prompts, if the child was hesitant to continue, were, "Tell me a story about what happens in this picture" or "Tell me what happened".

All the stories were recorded, transcribed and coded according to CLAN (*Child Language Data Exchange System* – CHILDES, MacWhinney 2010) tools for automatic linguistic analysis, and the main linguistic indications, such as general productivity, lexical diversity, and syntactic complexity, were analysed. General productivity was indicated by MLUw index[1] and type/token ratio[2]. For MLUw index, a mean length of utterance in words of each story was calculated. For type/token ratio, was calculated: a) general type/token ratio, b) noun type/token ratio, c) verb type/token ratio, and d) adjective type/token ratio. Lexical diversity was indicated by a reference to the main protagonists. As mentioned above, there were four protagonists in the sequence: a mother bird, chicks, a cat, and a dog. Each of the noun phrase (NP) references to these protagonists was coded as neutral (e.g., *a bird*, *a cat*, *a dog*), generalized (e.g., *an animal*, *bird's children*), or specified (e.g., *a crow*, *a pigeon*, *a collie*), and proportions of these NP references were calculated. Syntactic complexity was indicated by the use different syntactic structures. Each sentence of the stories was coded as a simple (e.g., *The cat wanted to catch the chicks.*) or composite sentence. According the *Practical Grammar of Lithuanian* (Ramonienė, Pribušauskaitė 2008), each composite sentence was coded additionally as complex (e.g., *The bird had to catch some worms because he wanted to feed his children.*), compound (e.g., *The cat climbed up the tree, but the dog pulled her down.*), conjunctionless (also termed asyndetic, e.g., *The bird flew away, the cat came to the tree.*) or mixed composite (e.g., *The dog pulled the cat's tail, the cat fell down, and then the bird came back.*) sentence. The proportions of these sentence types were then calculated.

2. Discussion of the results

2.1. General productivity

The findings indicate that the narrative MLUw index at preschool age is quite high (see Figure 1).

The MLUw index, with a few exceptions, varied between 5.3 and 10.0 words per utterance, and the mean MLUw index of all narratives was 9.1. These results correlate with the findings of previous studies of Lithuanian children and MLUw development, where personal and fictional narratives of preschoolers were analysed (Miklovytė 2009). Naturally, the mean MLUw index of the analysed narratives was higher than in a dialogic speech of the same target subjects (~5.0 words per utterance) (Balčiūnienė, Miklovytė 2010).

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[1]   Although MLU (Brown 1973) is considered a measure of grammaticality (Parker, Brorson 2005, Tilstra, McMaster 2007) and is still a controversial category (because utterance has no formal characteristics in oral speech), it is analysed in many studies as a measurement of a child's gross language development and a risk of language impairments (Eisenberg et al. 2001).

[2]   Type/token ratio (TTR) is a measure of vocabulary and grammar variation within a written or a spoken text. A *type* (also termed *form*) can be described as a particular inflected form of lemma (e.g., a lemma *cat* in English has four forms: *cat*, *cat's*, *cats*, and *cats'*). Naturally, there are many more types of lemmas in strongly-inflected languages, such as Russian, Polish and Lithuanian (e.g., in Lithuanian a lemma *kat-ė* 'cat' has twelve types (forms) including seven case forms which are inflected additionally for singular vs. plural). *Token* can be described simply as a number of words within a text.
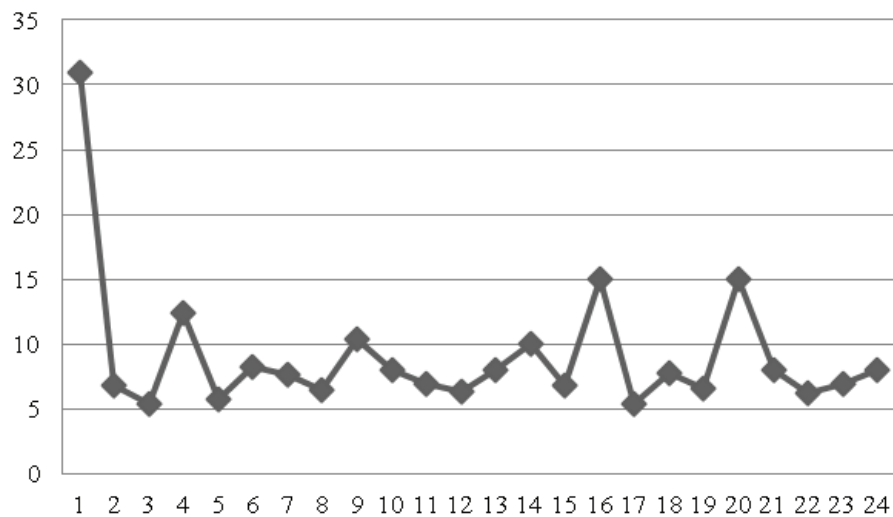
Figure 1. MLUw index in the preschoolers' stories

The MLUw index varied between 10.0 and 15.0 words per utterance in three stories, and one can suppose that these children also demonstrated better skills from the perspective of lexical diversity and syntactic complexity. However, this statement should be examined more comprehensively. The MLUw index was extremely high (31.0 words per utterance) in one story (see Figure 1), but this does not indicate good narration skills; on the contrary, narrative language there generally seems to be impaired (1).

(1) *Pamatė ją # šuo, kad # katė lipa jau į medį, patempė jai, įkando į uodegą ir tempė, o tuo laiku atskrido paukštis # ir su kirminu, pas vaikus, o paskui eee # katė pasileido nuo sakos* [: šakos] *ir pradėjo šuo jį gaudyt, o tuomet šuo* [//] *paukstis* [: paukštis] *eee va* [//] *maitino paukščius*[3].
'The dog saw # her that # the cat climbs up the tree already, pulled her, bit her tail and pulled, and then the bird came back, # and with a worm to the children, and then # the cat left the branch and the dog started chasing him, and then the dog [//] the bird ate [//] # fed the birds.'

Despite the fact that word order in Lithuanian is free, the text seems to be "messy"; moreover, one can observe grammatical errors (e.g., the cat is referred as "he", although "a cat" is a feminine gender noun in Lithuanian), lexical limitations (e.g., the mother bird and her chicks are referred by the same noun "a bird"); inappropriate anaphoric references (e.g. *The dog saw her, that the cat climbs up the tree...* [= The dog saw the cat that she climbs up the tree...]). These findings lead to the presumption that an extremely high MLUw index may indicate narrative and general language disorders/delays, such as lexical limitations, grammar and/or coherence disorders.

These findings indicate that the narrative mean TTR index at preschool age is quite high (see Table 1).

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[3] According to the tradition of *The Corpora of Spoken Lithuanian* (see Dabašinskienė, Kamandulytė 2009), the segmentation of the transcribed stories was based on intonation and pause, but not on syntactic devices. False starts, fillers, and self-repairs were excluded from calculations.

Table 1. Mean TTR index in the preschoolers' stories

	Types	Tokens	Type/token ratio
All words	66.5	91.45	0.729
Nouns	9.75	13.5	0.736
Verbs	11.8	13.3	0.875
Adjectives	0.33	0.33	1

The general TTR index varied between 0.6 and 0.8, and the mean index of all narratives was 0.7. An extremely low (≤ 0.6) TTR index indicates limited vocabulary and/or grammar (2).

> (2) *Paukštis nematė, kad katinas atėjo.Tada pa [//] katinas pamatė, kad paukštis skrenda. O katinas vėliau pamatė, kad jau nuskrido. Tada skrenda paukštis, o šuo gaudo katę.*
> 'The bird did not see that # the cat came. Then saw [//] the cat saw that the bird is flying. And the cat saw then that [the bird] flew away already. Then the bird is flying, and the dog is chasing the cat.'

The noun TTR index varied between 0.5 and 1.0, and the mean index of all stories was 0.7. Similarly to the general TTR, an extremely low noun TTR indicates limited vocabulary and/or grammar, but an extremely high noun TTR index may also indicate poor general skills in narration (3).

> (3) **Katė** *įlipo į* **medį**. *Atskrido* **balandis**. *Ir jis nuo* **uodegos** *ir išvijo* **katę**.
> '**The cat** climbed up **the tree**. The **pigeon** came back. And he [grabbed] **the tail** and chased **the cat** away.'

In this example (3), the story contains only three sentences, and each of the nouns is produced only once within the story. Although the noun TTR is extremely high (1.0) here, the story seems to be poor and limited from the perspective of macrostructure.

The verb TTR index varied between 0.7 and 1.0, and the mean index of all stories was 0.9, i.e., verbs were the most productive content words in the stories. However, the adjective TTR was completely different: adjectives were used in only four stories, and the TTR index was equal to 1.0 in each story. This means that the children used a few adjectives, and their lexical and/or grammatical forms were different. Taking into account that adjectives generally are not numerous in child language (Ceitlin 2000, Clark 2003, Kamandulytė 2010), the productivity of adjectives at preschool age could be a possible indication of accelerated language acquisition.

2.2. Lexical diversity

After the analysis, it can be stated that the children tended to use semantically neutral NP references for all protagonists, except chicks, while generalized and specified NP references seem to be less numerous (see Table 2).

Table 2. NP references (number of tokens) to the main protagonists

	Neutral references	**Generalized references**	**Specified references**
Mother bird	45	13	7
Chicks	22	23	4
Cat	84	–	–
Dog	50	1	–

The mother bird is the first protagonist to appear on picture 1, accompanied by her chicks. In picture 2, the mother bird leaves the nest, to bring some food for her chicks. She comes back in picture 5 with a worm for the chicks. In the stories, the mother bird was variously referred as; *paukštis* 'bird', *mama* 'mother', *paukštelis/ paukštytis/ paukštytė* 'bird-DIM', *balandis* 'pigeon', *varna* 'crow', *gulbė* 'swan', and *vištytė* 'hen-DIM' (see Figure 2).
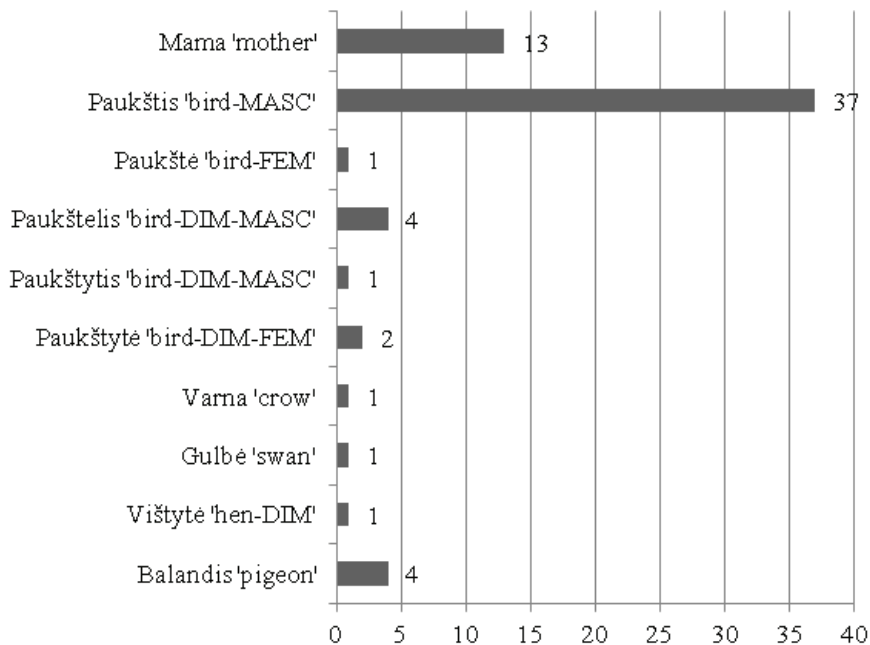

Figure 2. NP references (number of tokens) to the mother bird

The majority of these NP references belong to the semantically neutral group. The children used various forms of a lexeme *paukšt-* 'bird' (45 tokens in total):

a) the main form, a root with different endings which mark feminine vs. masculine form, e.g., *paukšt-ė* 'bird-FEM' (1 token) vs. *paukšt-is* 'bird-MASC' (37 tokens);

b) several diminutive forms (the root with different diminutive suffixes, e.g. *paukšt-el-is* (4 tokens), *paukšt-yt-is* 'bird-DIM-MASC') which still can be gender-marked, e.g. *paukšt-yt-ė* 'bird-DIM-FEM' (2 tokens) vs. *paukšt-yt-is* 'bird-DIM-MASC' (1 token). Generalized NP references are not very numerous or various: 13 tokens (and the only grammatical form) of a lexeme *mama* 'mother' were observed within the stories. Only a few specified NP

references were produced in the stories: there were four tokens of a lexeme *balandis* 'pigeon' and one token of each of the following lexemes: *varna* 'crow', *gulbė* 'swan', and *višta* 'hen'.

The chicks are present throughout the story. They appear mostly as an object which is being taken care of, being left alone, being attacked by the cat, being saved by the dog, and finally being fed by the mother. Naturally, when referring to the chicks the children produced many diminutive forms (6/10 lexemes, and 32/49 tokens) (e.g., *paukšč-iuk-ai* 'chick-DIM-PL' (16 tokens), *vaik-el-iai* 'child-DIM-PL' (2 tokens), *maž-yl-iai* 'baby-DIM-PL' (3 tokens), *balandž-iuk-ai* 'pigeon-DIM-PL' (2 tokens)) (see Figure 3).
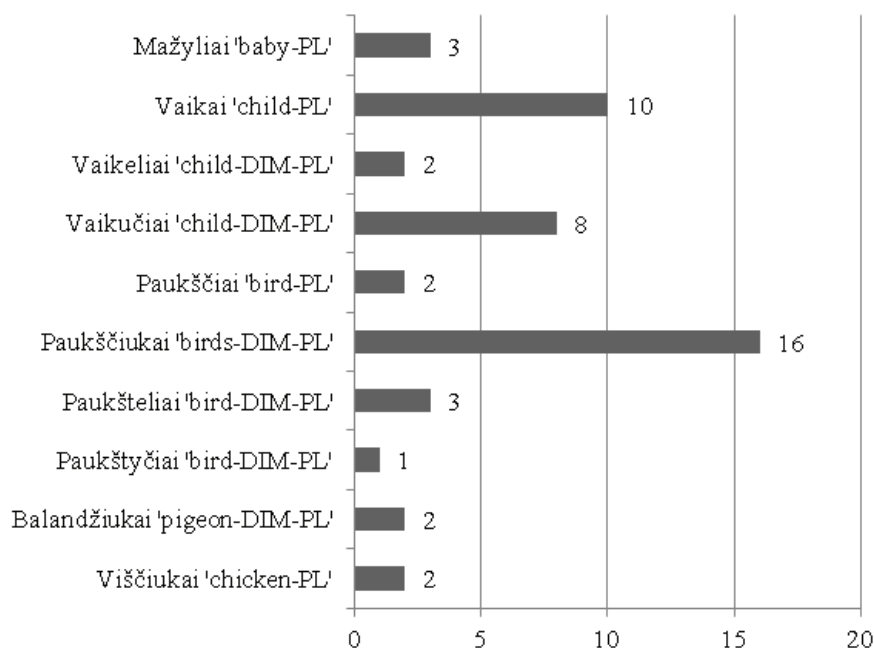

Figure 3. NP references (number of tokens) to the chicks

However, it should be mentioned that in Lithuanian language diminutive suffixes are used also for expressing kinship terms, thus a word *balandž-iu-kai* 'pigeon-DIM-PL' can be interpreted as either 'small pigeons' or 'children of a pigeon'; similarly, *paukšč-iuk-ai* 'bird-DIM-PL' can be interpreted as either 'small birds' or 'children of a bird'. Concerning this interpretation, all the NP references to the chicks used in the stories contain a concept of 'children', but this concept can be semantically neutral (e.g., *paukščiukai* 'child of bird-PL'), generalized (e.g., *vaikai* 'child-PL', *mažyliai* 'baby-PL') or specified (e.g., *balandžiukai* 'child of a pigeon-PL', *viščiukai* 'child of a hen-PL').

The cat is the main and the most active protagonist in the story. It appears in picture 2, and then is trying to catch the chicks and being attacked by the dog. Talking about the cat, the children produced only one lexeme *kat-* 'cat' (see Figure 4), but in three different forms: the main form which was marked in several cases by a derivational suffix for masculine gender (*kat-ė* 'cat-FEM' (58 tokens) vs. *kat-in-as* 'cat-MASC' (24 tokens)), and a diminutive form *kat-yt-ė* 'cat-DIM-FEM' (2 tokens).
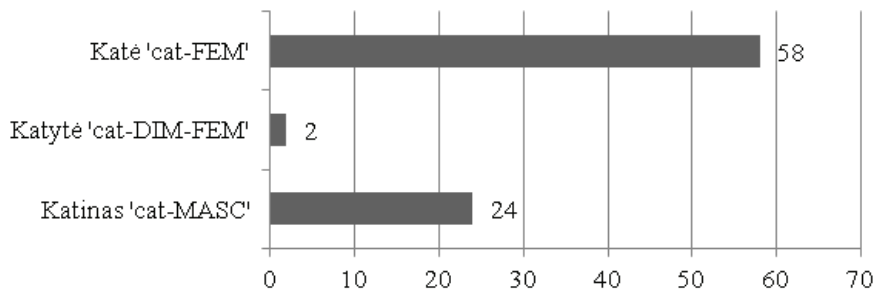
Figure 4. NP references (number of tokens) to the cat

However, only the neutral NP reference was used in the stories.

The dog appears in picture 4 as a positive protagonist who attacks the cat and saves the chicks. The children, referring to the dog, produced mainly neutral NP references: the dog was referred to most often as *šuo* 'dog' (48 tokens) or *šuniukas* 'dog-DIM' (2 tokens) (see Figure 5), and only one token of a generalized NP reference, *žvėris* 'wild animal', was observed.
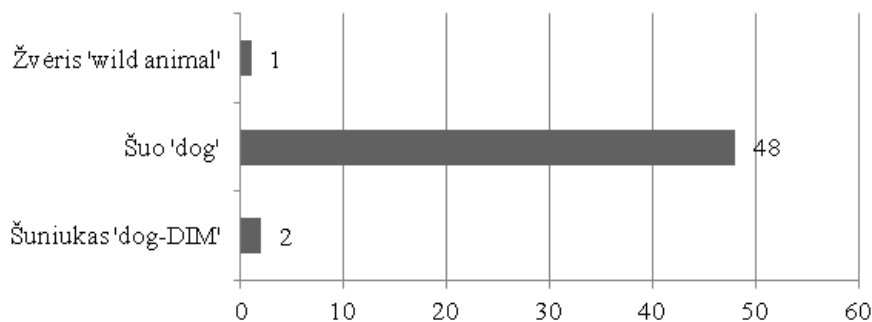

Figure 5. NP references (number of tokens) to the dog

A difference between the general number of lexemes referring to birds (both the mother and her children) and quadrupeds (both the cat and the dog) can be explained by the influence of context (style of the pictures, and linguistic input). First, the species of bird is not easily identifiable from the pictures (besides the lexeme *paukštis* 'bird', birds could be referred as pigeons, crows, magpies, pelicans, cormorants, etc.), thus a child has a wide range of choice, and the preference depends on his/her own experience, input, and general cognitive and language development. The breed of the cat and the dog is also hardly identifiable from the pictures, but it is more usual in spoken Lithuanian (especially in child-directed speech) to use various forms of the lexemes *katė* 'cat' and *šuo* 'dog' than the terms for particular breed. The results indicate the same strategy in the children's stories: the preschoolers produced semantically neutral lexemes *katė* 'cat-FEM' / *katinas* 'cat-MASC'/ *katytė* 'cat-DIM-FEM' and *šuo* 'dog'/ *šuniukas* 'dog-DIM', and only one child, who probably was not able to identify the dog, preferred the generalized concept *žvėris* 'wild animal'.

2.3. Syntactic productivity

According to these results, the productivity of simple and composite sentences seem to be almost equal: children produced 67 simple sentences, and 63 composite sentences. However, productivity of different types of composite sentences is significantly different. Compound and mixed composites are the most numerous (42 and 21 respectively) among all composite sentences, while other types are rare (only 12 complex sentences, and 6 conjunctionless (asyndetic) sentences were observed within the stories).

Compound sentences (especially those with the conjunction *and*) are considered the easiest type of composite sentences to acquire (Ceitlin 2000: 220). The results indicate that copulative and juxtapositive sentences were preferred (in comparison with other subtypes of compound sentences) by the preschool children, presumably as the simplest and easiest way of expressing temporal and/or causal relations (4a–c):

(4a) *Tupėjo balandis lizdelyje su balandžiukais, <u>ir</u> atėjo katė.*
'A pigeon was sitting in his nest with his children, <u>and</u> a cat came.'

(4b) *Po to katinas atėjo, # atsitūpė, <u>o</u> paukštis nuskrido.*
'Then a cat came, sat down, # <u>and</u> the bird left.'

(4c) *Paskui išskrido savo vaikeliam parnešti valgyt, <u>ir</u> katė norėjo pavogt # vaikelius ir suvalgyt.*
'Then [the bird] left to bring some food to her children, <u>and</u> the cat decided to steal the children and to eat them.'

Other subtypes of compound sentences were not observed in the stories.

Conjunctionless sentences were the rarest type of composite sentence produced in the stories, despite the fact that these sentences express temporal and/or causal relations, similarly to the compound sentences (5a–c):

(5a) *Lipo katė # į lizdą, tada šuo patempė ir tada vijosi ją.*
'The cat was climbing to the nest, then the dog pulled her and chased her.'

(5b) *Katinas jau buvo labai arti, # šuo pagriebė katino uodegą.*
'The cat was very close already, # the dog grabbed the cat's tail.'

(5c) *Katinas lipo į medį, šuo atėjo.*
'The cat climbed up the tree, a dog came.'

Presumably the children were trying to tell a coherent and cohesive story, thus they were trying to use more conjunctions, even in the constructions where the conjunctions are not necessary.

Complex sentences (especially causal and temporal clauses) were still difficult to produce, but even these skills seem to be partially acquired. The children tried to express the goal of the cat, and the goal of the dog, i.e., the goals which are easily identifiable from the pictures (6a–b):

(6a) *<u>Kai</u> paukštis atskrido, # šuo nusivijo katę.*
'<u>When</u> the bird came back, # the dog was chasing the cat.'

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(6b) *Paskui pagalvojo, <u>kad</u> pati galėtų užsikarti ir* [/] *ir suvalgyti.*
'Then [the cat] decided, <u>that</u> she could climb up and [/] and eat [the chicks].'

Other goals are expressed rather by compound or even simple sentences.

According to the *Grammar of Modern Lithuanian* (Ambrazas et al. 1996), mixed composite sentences contain at least two different relationships of the clauses (7a–b):

(7a) *Paskiau šuo vijosi katiną, kad sudraskytų, o paukščiai kad gyventų gražiai.*
'Then the dog chased the cat in order [*causal coordination*] to kill her, and [*copulative coordination*] the birds could live happily.'

(7b) *Paskui katinas įlipo į medį ir* [/] *ir šuo žiūrėjo, kaip jisai lipo.*
'Then the cat climbed up the tree, and [/] and [*copulative coordination*] the dog observed, how [*direct coordination*] he was climbing.'

Despite their extremely complicated structure, mixed composite sentences seem to be among the most frequent types of comoposite sentences within the stories.

3. Conclusion

The results indicated the main microstructural tendencies of Lithuanian narrative language at preschool age:

1. The majority of the subjects (6–7 year old Lithunian preschoolers) demonstrated quite high general productivity indexes: mean MLUw and type/token ration indexes were equal to 9.1 and 0.7 respectively. High deviation from the mean MLUw index refer either to accelerated or to weak narrative skills.

2. Semantic analysis indicated a wide-ranging lexical diversity of NP references to the main protagonists; this stands particularly for the *mother bird* that is referrred by various semantically neutral, generalized and specified NPs.

3. Complex structures (especially causal and temporal clauses) are still difficult to produce, but even these skills seem to be acquired at preschool age.

In this study, microstructural indications were analysed automatically (by using CHILDES tools), thus only linguistic skills of the narratives can be described. The next steps for future investigations should be macrostructural narrative analysis of the same target group and a comprehensive narrative analysis of other samples, including adults, bilinguals and SLI subjects.

Abbreviations

DIM	diminutive	#	pause
FEM	feminine	[//]	self-correction
MASC	masculine	[:]	incorrect pronunciation
PL	plural		

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LEEDUKEELNE NARRATIIV KOOLIEELIKU-EAS

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Artikkel käsitleb leedu eelkoolealiste laste narratiivide põhilisi lingvistilisi indikaatoreid, mis näivad olevat üldise keelearengu olulisemate kriteeriumide hulgas. Analüüs põhineb kahekümne neljal keskklassi kuuluvate perekondade ükskeelsete normaalse keelelise arenguga leedu laste (6–7-aastased) andmetel. Kõik lapsed käivad riiklikus lasteaias Kaunases (Leedus). Eksperimendi vältel testiti lapsi individuaalselt: neid paluti jutustada "Kassi lugu" (Hickmann 1982) pildisarja järgi. Kogutud jutustused lindistati, litereeriti ning kodeeriti automaatanalüüsi jaoks, mis toimus CHILDES-i vahenditega. Analüüsi eesmärk oli vaadelda jutustuste süntaktilist komplekssust, leksikaalset varieeruvust ning üldist produktiivsust (VKP (väljendite keskmine pikkus sõnades, ingl *MLUw*), lekseemi/esinemisjuhu suhtarv (ingl *type/token ratio*)). Tulemused näitasid leedukeelse narratiivi põhilisi mikrostruktuurilisi omadusi eelkoolealiste astmel.

Enamuse 6–7-aastaste leedu eelkoolealiste laste puhul täheldati päris kõrgeid produktiivsuse suhtarve: VKP ja lekseemi/esinemisjuhu suhtarvude keskmised olid 9,1 ja 0,7. Suured kõrvalekalded keskmisest VKP-st osutavad kas kiirema keelelise arenguga lastele või mõne lapse nõrgale jutustamisoskusele.

1) Semantilise analüüsi tulemused näitasid olulist leksikaalset erinevust loo peategelastele viitavates nimisõnafraasides; seda oli eriti märgata emalinnu tegelase puhul, millele viidati erinevate semantiliselt neutraalsete, üldiste ning täpsustavate nimisõnafraasidega.

2) Kompleksseid struktuure (eriti kausaalseid ning temporaalseid osalauseid) oli lastel ikka veel raske koostada, kuid tundub, et isegi neid oskusi hakatakse omandama juba eelkoolieas.

Selles uurimuses analüüsiti mikrostruktuurilisi indikaatoreid automaatselt CHILDES-i vahendeid kasutades, seetõttu saab kirjeldada vaid narratiivi lingvistilisi oskusi. Järgmiseks peaksid uurimused käsitlema narratiivi makrostruktuuri samas sihtgrupis, ühtlasi ka ulatuslikku narratiivi analüüsi teistsugustes valimites, mis koosnevad täiskasvanutest, kakskeelsetest ning alakõnega lastest.

Võtmesõnad: narratiivid, lastekeel, keeleomandamine, leedu keel