

# Russian heritage speakers in Cyprus: Language proficiency and literacy skills

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# Heritage speakers

- **Heritage speakers** are bilinguals in home and dominant language,
- they have more family or cultural motivation and connection to the former, **minority or immigrant language**,
- and are more proficient in the latter, **society language** (Valdés, 2000; Polinsky and Kagan, 2007; Benmamoun et al., 2013; Polinsky, 2015).

# Aims of the research

- The present study is focused on **language proficiency** and **literacy skills** of **Russian–Cypriot Greek bilingual children, Russian heritage speakers**, children of the first generation immigrants living in Cyprus.
- Their **dominant society language is Cypriot Greek**, while their **home (weak/minority) language is Russian**.
- They have **limited exposure to Russian**, only at home, and **low level of schooling in Russian**, only 1-2 hours of Russian lessons per week (Saturday schools).





# The Republic of Cyprus



# Linguistic situation in Cyprus

- **Diglossic, bi-dialectal** (Grohmann and Leivada, 2011) or **bilectal** (Rowe and Grohmann, 2013) situation
- **Two varieties** are used by the Greek Cypriot population
  - **Standard Modern Greek (SMG)** and
  - **Cypriot Greek (CG)**
- **Multilingualism:**
  - Cypriot minorities (e.g., Latin, Maronites) who live in Cyprus
  - residents of British origin
  - immigrants from various countries of Eastern Europe, Asia, and especially the former Soviet Union.

# Russian community in Cyprus

- *The largest foreign language group*
- **Three main types:**
- **Temporary residents** (tourists or business people who use mainly Russian at home and Russian or English or some other European language on a daily basis — but not Greek);
- **Members of mixed marriage families** (mainly with a Russian woman and a Greek Cypriot man and bilingual Russian–Cypriot Greek children);
- **Members of immigrant families** (where mostly both partners are Russian, who aim for long-term residence in Cyprus, so they speak Russian at home and English or Greek outside).

# Home language transmission and maintenance

- **Written questionnaires** based on Otwinowska-Kasztelanic and Karpava (2015) and **oral interviews** were used for data collection among **Russian-speaking mothers**:
- **60 adult females** (31-52 years old), native speakers of Russian, **members of mixed-marriage families, parents of bilingual Russian-CG children**
- They come from Russia, Belarus, Ukraine and Moldova and belong to middle socio-economic class.
- **Mean length of residence (LoR) in Cyprus: 10.40 years**
- **Mean age of onset (AoO) to Greek/ age of arrival in Cyprus: 26.74 years**



# Home language transmission and maintenance

- **The analysis of the data** revealed that **female adults**, members of mixed-marriage families, *have either Russian or mixed (Russian and Cypriot Greek) cultural and linguistic identity.*
- There is no unanimous opinion of **how they feel in Cyprus**: some of them believe that they have been **fully integrated into Cyprus society**, some not, the others **belong to both Cyprus and Russian society**
- The participants **often or very often code-switch (Russian-CG) at their work place and at home**
- The participants either use '**one parent, one language approach**' or **mix both languages**, while **communicating with their children**, while 15% of the participants use **only Russian**
- As for **home language maintenance**, nearly all **female adult participants** *try to teach their children Russian at home and send their children to Russian lessons, where they learn to write and read in Russian.*

# Participants (Study I)

- **28 simultaneous bilingual children** (Russian–Cypriot Greek)
- 13 boys and 15 girls, **born in Cyprus** (father CG and mother Russian)
- Their **age ranges** from **4;6 to 11;3** (mean age: **84 months**, **SD 17.5**, range **64-125 months**) and they attend **pre-primary** and **primary school** (**1st–4th grades**).
- Randomly recruited from public **pre-primary** and **primary schools** in **Larnaca area**: **urban** (10) and **rural** (18)

# Participants (Study II)

- **39 simultaneous bilingual children** (Russian–Cypriot Greek)
- **17 boys and 22 girls, born in Cyprus** (father CG and mother Russian)
- Recruited from public Saturday Russian school in Larnaca, Cyprus
- (school year: 2015-2016)
- **2<sup>nd</sup> grade:** 11 children (mean age: 8;8, range 7;7-9;8, SD 0.7), 5 female, 6 male
- **3<sup>rd</sup> grade:** 9 children (mean age: 9;9, range 8;11-12.5, SD 1.4), 5 female, 4 male
- **4<sup>th</sup> grade:** 8 children (mean age: 10;8, range 9;4-12, SD 0.8), 4 female, 4 male
- **5<sup>th</sup> grade:** 11 children (mean age: 12;12, range 9;5-14;1, SD 1.3), 8 female, 3 male

# Methodology: Study I

- The **participants** were tested on a **large battery of tests**:
- Their **language proficiency in Greek/CG and Russian** were measured with the **Developmental Verbal IQ Test (DVIQ)**, slightly adapted to CG from Stavrakaki and Tsimpli's (2000) SMG original
- and the **Russian Proficiency Test for Multilingual Children (RPTMC)** (Gagarina et al., 2010) respectively.
- Besides the test **a detailed questionnaire** (filled by parents) **on language input situation, linguistic and extra-linguistic development of a child was used** (Gagarina et al., 2010).
- Several **tests on executive functions** were implemented: **digit span test, word span test, fluency test, Raven's matrices**.
- **CG and Russian oral production data**, obtained via **elicited story-telling** (Tsimpli et al., 2005)/**speech rate** (number of words per minute)

# Methodology: Study II

- **Bilingual children, heritage speakers of Russian** were measured on their **reading and writing skills in Russian** every month for a period of one year.
- **Longitudinal data** consists of the **written corpus of dictations** and **oral corpus of reading aloud recordings**.
- **Oral Russian spontaneous and elicited speech production of their mothers** is also under investigation as this allows to **reveal the native baseline** (Russian) and the **actual input** that the children receive (Benmamoun et al., 2013; Montrul, 2008; Polinsky and Kagan, 2007).

# Study I

# Testing materials (1)

- **The Russian language proficiency test for multilingual children** (Gagarina et al. 2010) examines the following **language domains**:
- **Productive and receptive lexicon** for **verbs and nouns**,
- **Production of morphological marking** on **verbs** (first and second-person singular present verbal inflection) and **nouns** (accusative and dative case singular),
- **Comprehension of grammatical constructions on the sentence level.**

# Testing materials (2)

- **The Developmental Verbal IQ Test (DVIQ)**, slightly adapted to CG from SMG (Stavrakaki and Tsimpli, 2000) investigated the following **aspects of linguistic development**:
- **lexicon** production and comprehension,
- **morphology** and **syntax** production,
- comprehension of metalinguistic concepts,
- comprehension of **morphology** and sentence repetition.



# Testing materials (3)

- The **Word Finding Test (WFT)**; Vogindroukas et al., 2009) tested naming of objects in **Greek** (50 pictures) (**Russian adaptation** was used as well)
- The **Cypriot Object and Action Test (COAT)**; Kambanaros et al., 2013) evaluated picture-naming ability, lexical access, lexical retrieval of **objects** (35 pictures) and **action names** (39 pictures) (**ROAT: Russian adaptation** was used as well)

# Testing material (4)

- **Digit span:** backward and forward repetition of list of digits (in Greek and in Russian) (30 test items)
- **Fluency test** (Russian and Greek): examines phonemic (**words starting with *p*, words starting with *t***) and semantic fluency (**list of animals, supermarket list**)

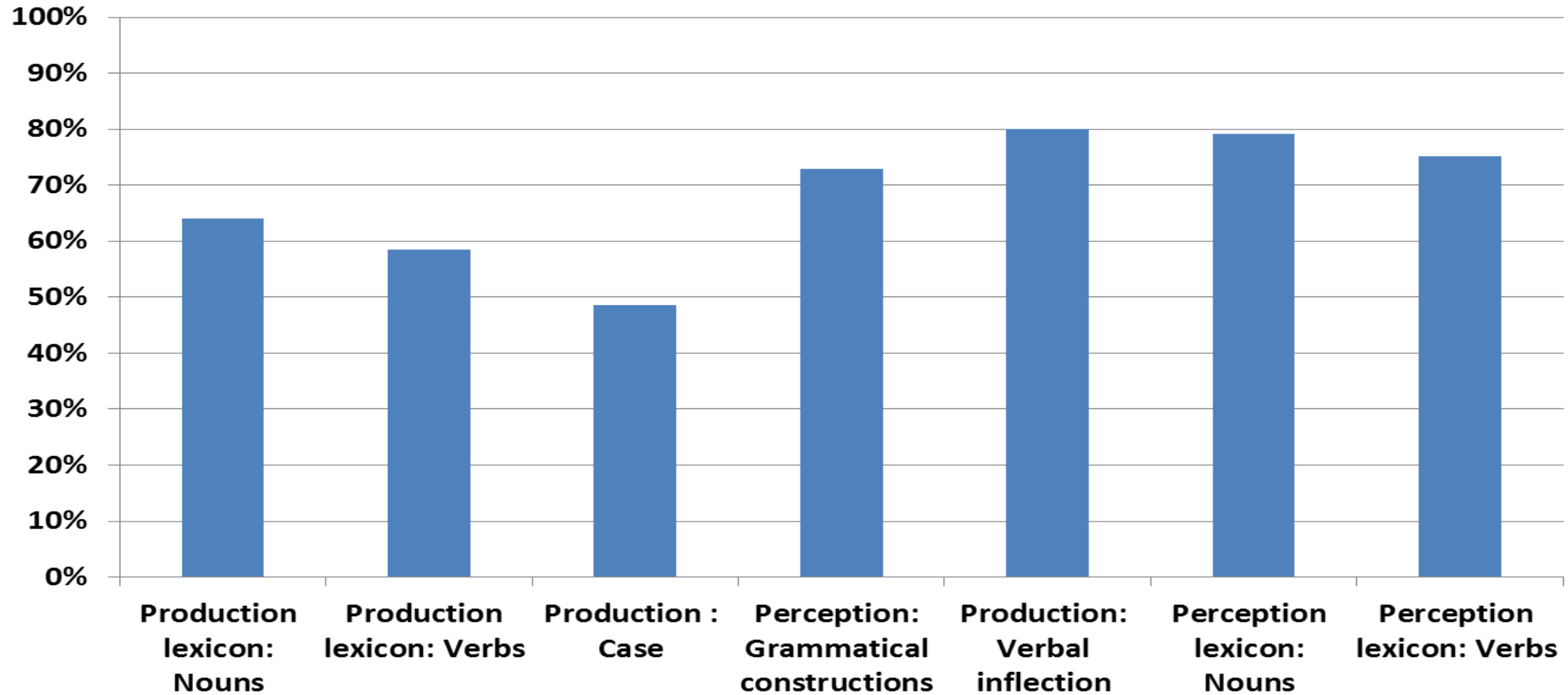
# Testing materials (5)

- Elicited and spontaneous oral production: story-telling while describing eight sets of pictures (Tsimpli et al., 2005): **CG and Russian**, both bilingual children and their parents were tested: **speech rate (number of words per minute)**



# Results

# Russian proficiency test: results

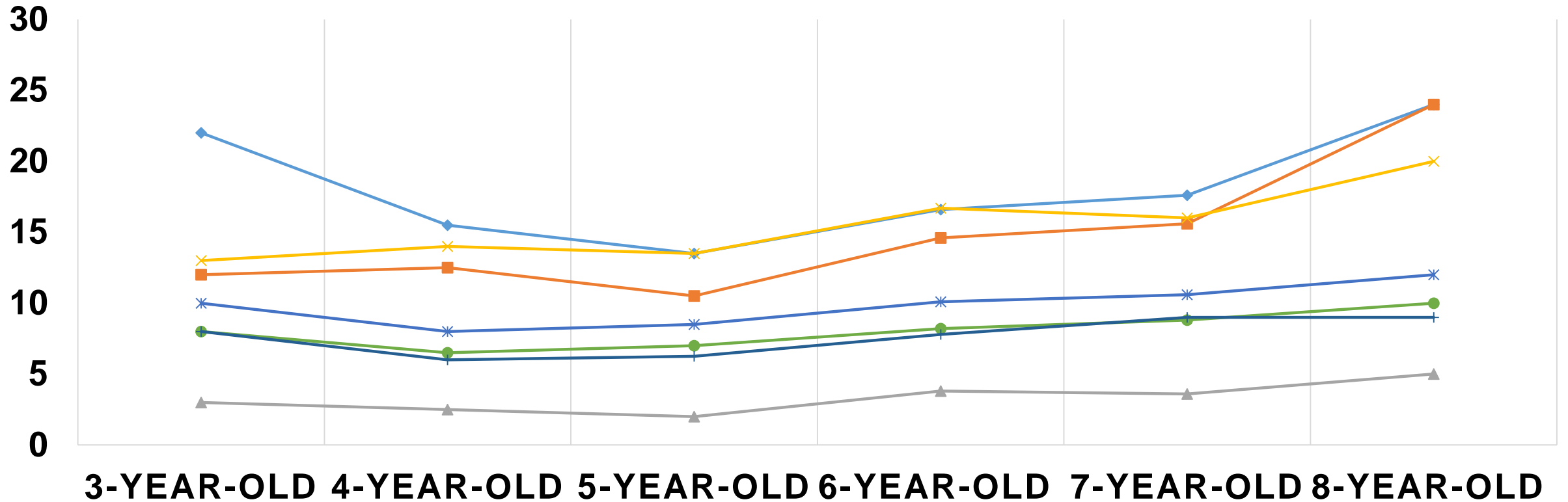


# Age: RPTMC Overall Production (Mean scores)

<b>Age</b>	<b>Production Lexicon: Nouns 26 scores</b>	<b>Production Lexicon: Verbs 26 scores</b>	<b>Production: case both Dat and Acc 6 scores</b>	<b>Perception: Grammatical constructions 22 scores</b>	<b>Production: Verbal inflection 12 scores</b>	<b>Perception lexicon: Nouns 10 scores</b>	<b>Perception lexicon: Verbs 10 scores</b>
<b>3-year-old (N=1)</b>	<b>22</b>	<b>12</b>	<b>3</b>	<b>13</b>	<b>10</b>	<b>8</b>	<b>8</b>
<b>4-year-old (N=2)</b>	<b>15.5</b>	<b>12.5</b>	<b>2.5</b>	<b>14</b>	<b>8</b>	<b>6.5</b>	<b>6</b>
<b>5-year-old (N=4)</b>	<b>13.5</b>	<b>10.5</b>	<b>2</b>	<b>13.5</b>	<b>8.5</b>	<b>7</b>	<b>6.25</b>
<b>6-year-old (N=10)</b>	<b>16.6</b>	<b>14.6</b>	<b>3.8</b>	<b>16.7</b>	<b>10.1</b>	<b>8.2</b>	<b>7.8</b>
<b>7-year-old (N=5)</b>	<b>17.6</b>	<b>15.6</b>	<b>3.6</b>	<b>16</b>	<b>10.6</b>	<b>8.8</b>	<b>9</b>
<b>8-year-old (N=1)</b>	<b>24</b>	<b>24</b>	<b>5</b>	<b>20</b>	<b>12</b>	<b>10</b>	<b>9</b>

# Age: RPTMC overall production (Mean scores)

- ◆ Production Lexicon: Nouns
- ▲ Production: Case
- \* Production: Verbal inflection
- + Perception lexicon: Verbs
- Production Lexicon: Verbs
- \* Perception: Grammatical constructions
- Perception lexicon: Nouns

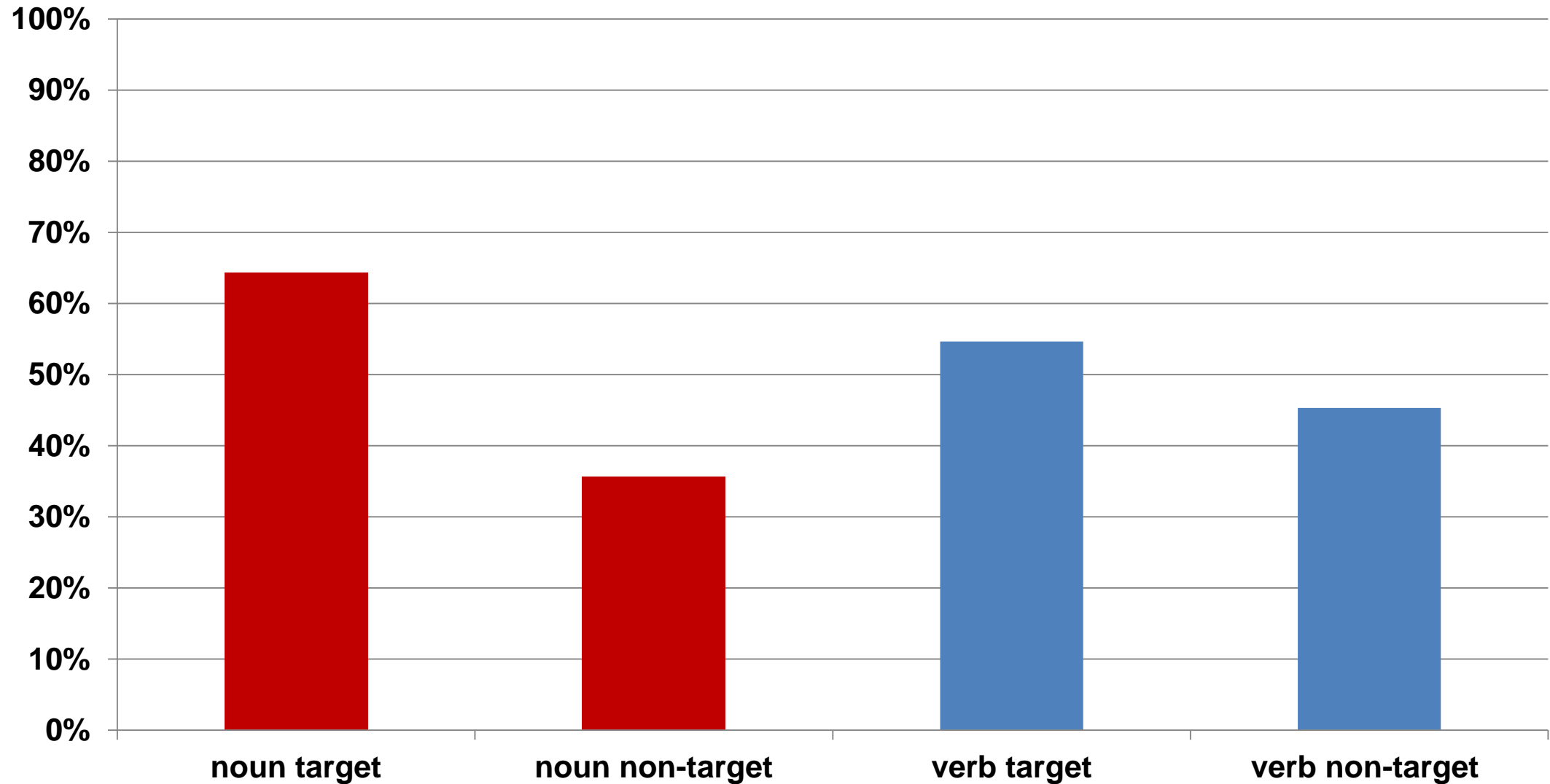


# Perception vs production

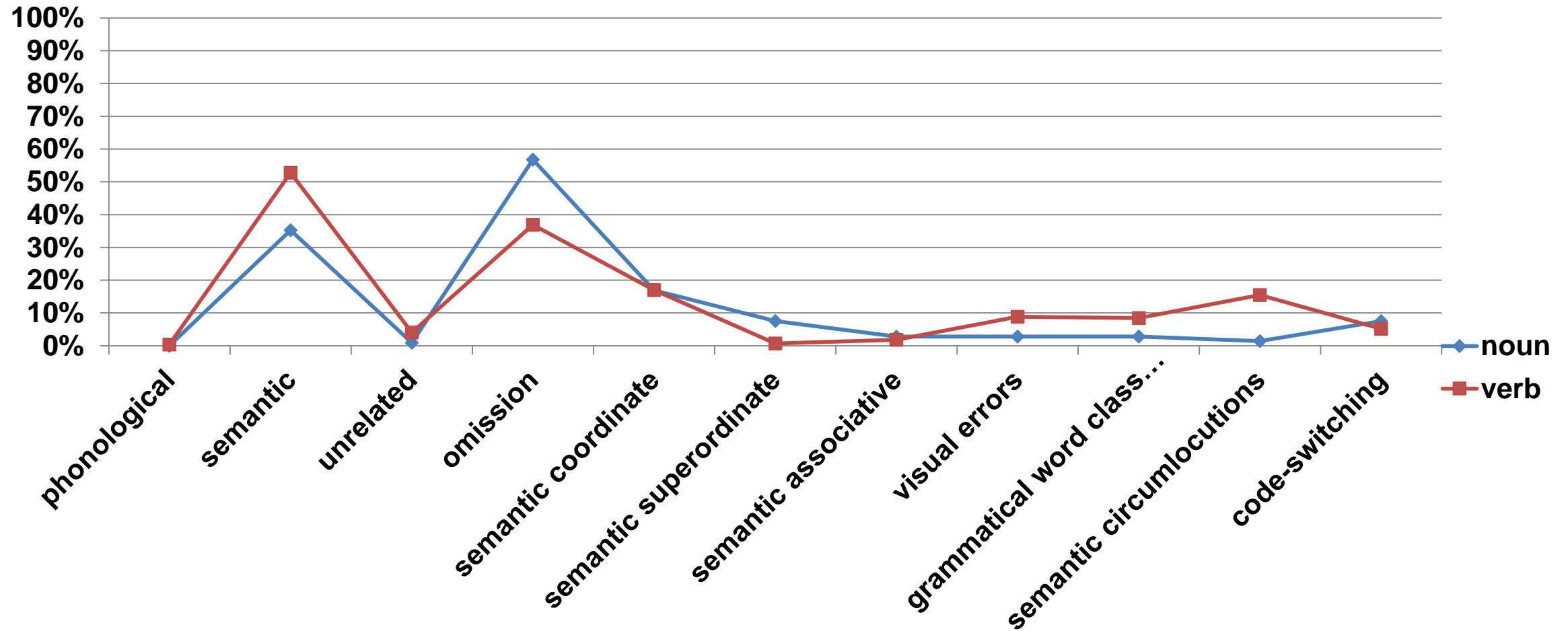
- **Bilingual children** scored higher on **RECEPTIVE SKILLS** rather than on **PRODUCTIVE SKILLS**
- **Paired samples t-test** showed that there is a **statistically significant difference** between **perceptive and production skills**: (.000)
- It is possible that certain **morphosyntactic structures** are yet to come **on-line** (Kohnert et al. 2009) for **production** despite **excellent receptive morphosyntactic skills**.



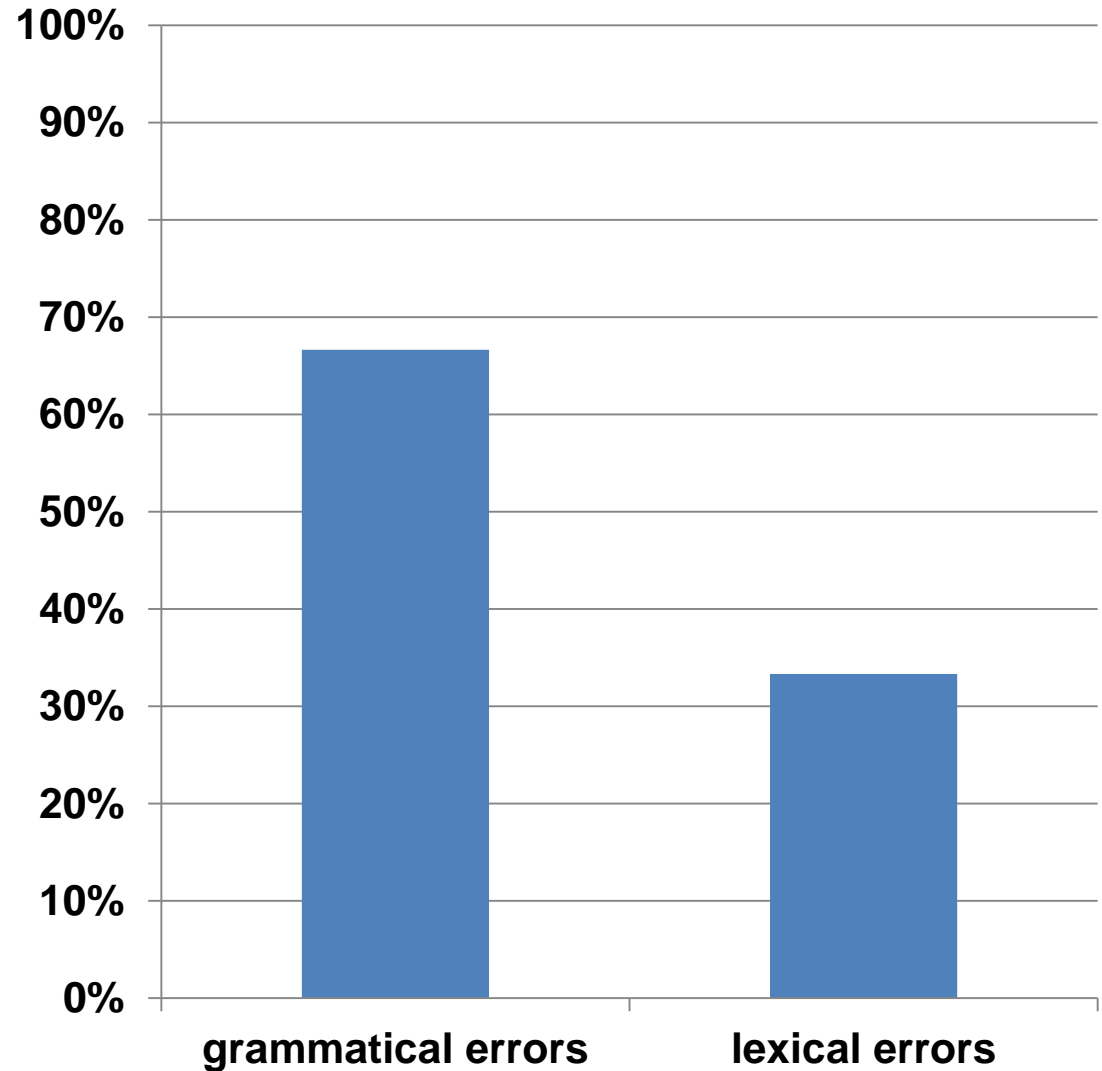
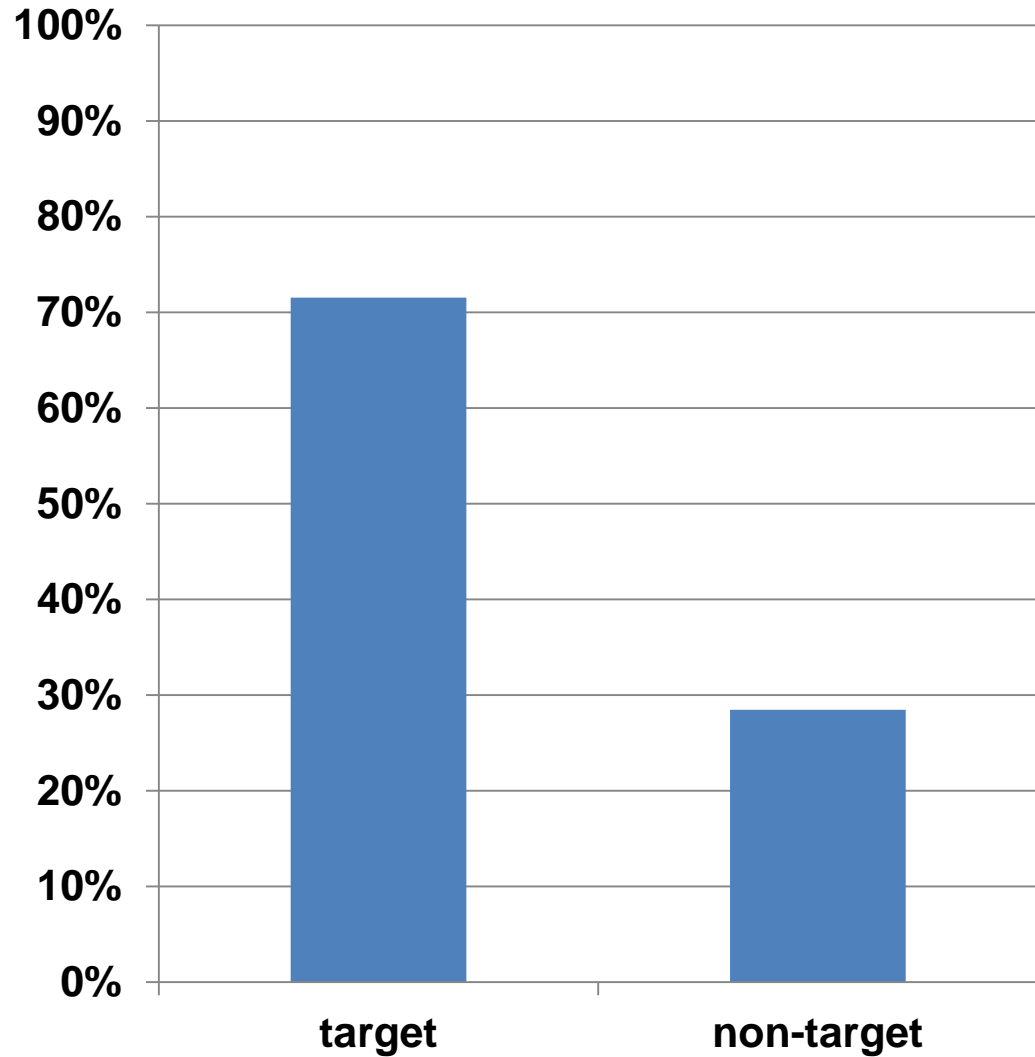
# Production lexicon: nouns vs. verbs



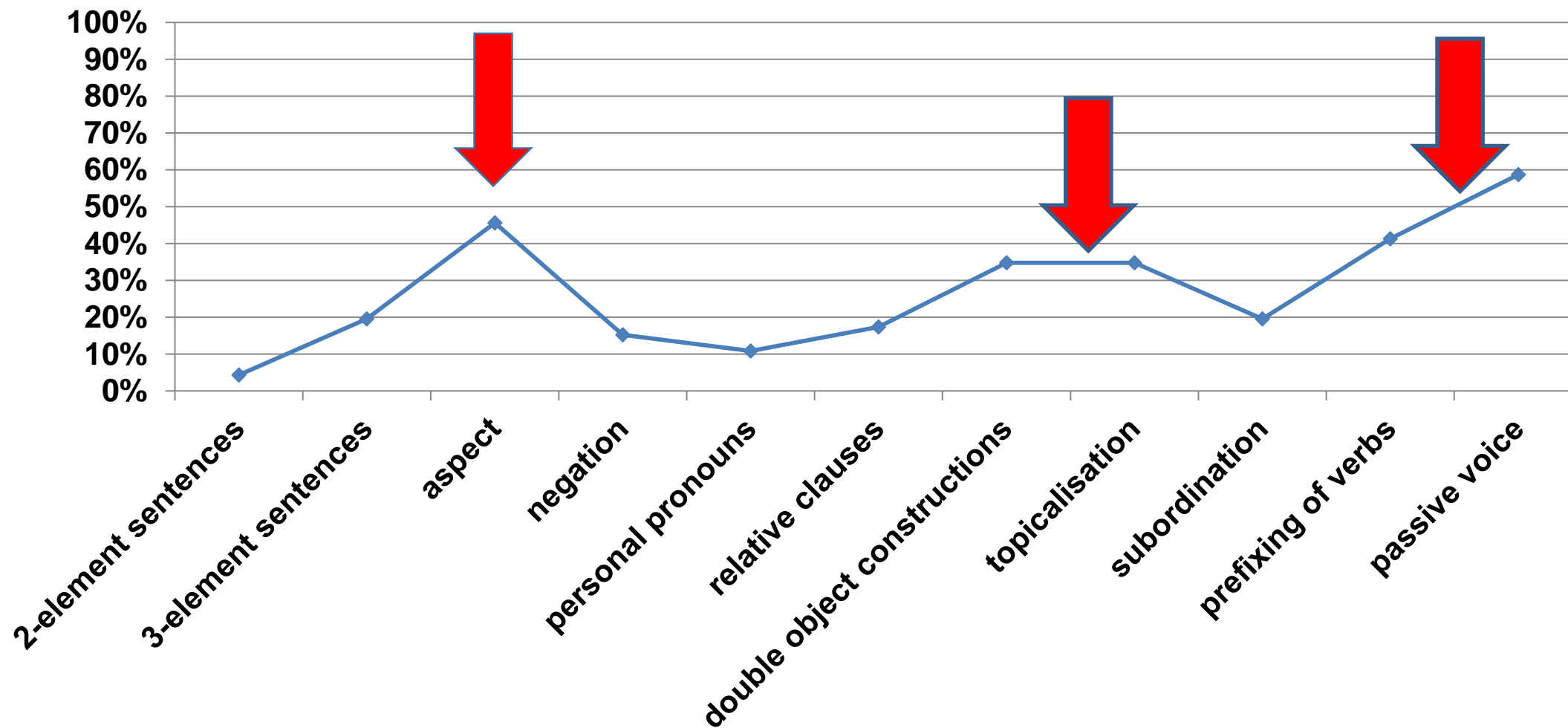
# Production lexicon: nouns vs. verbs: types of errors



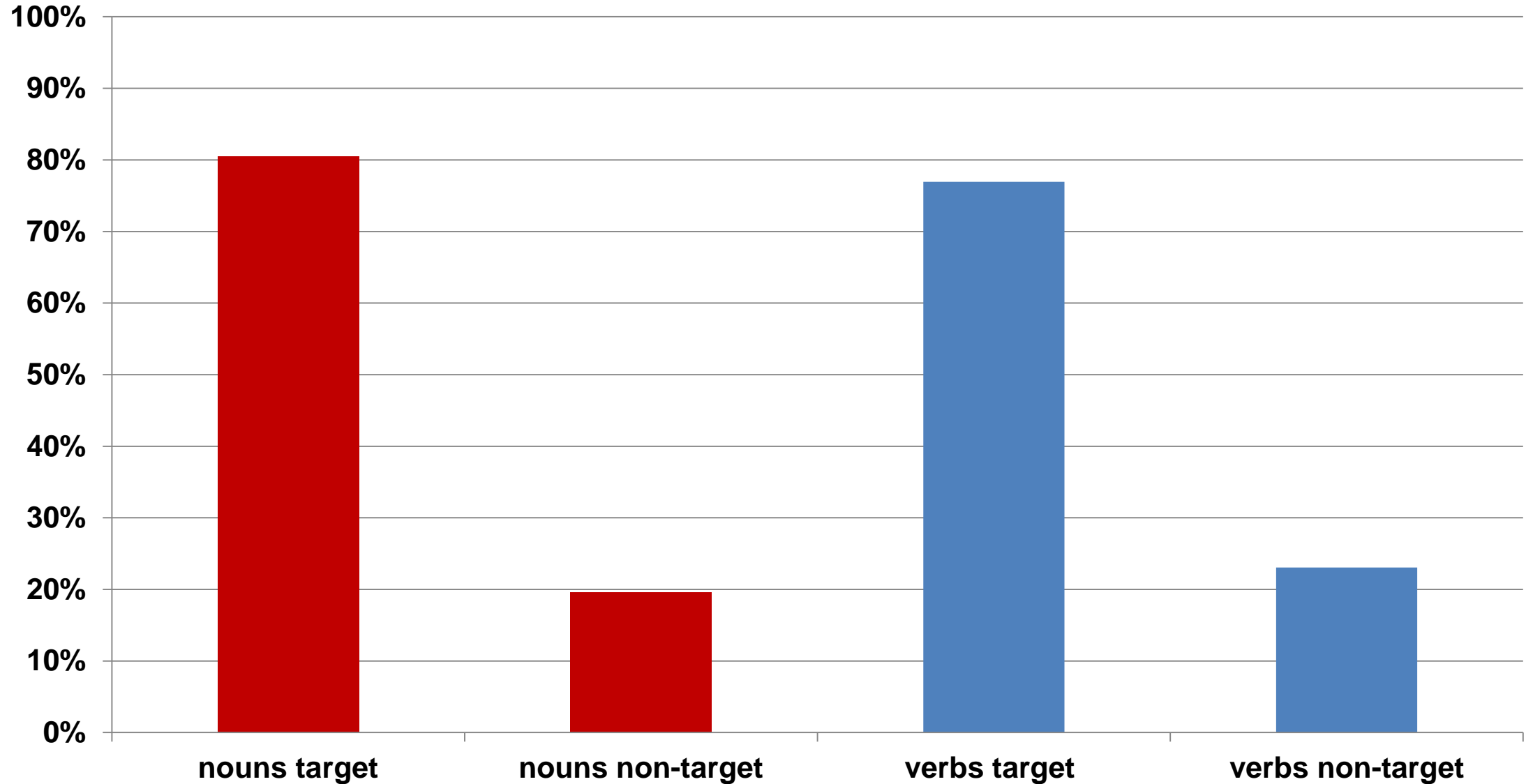
# Perception: grammatical constructions



# Perception: grammatical constructions type of errors



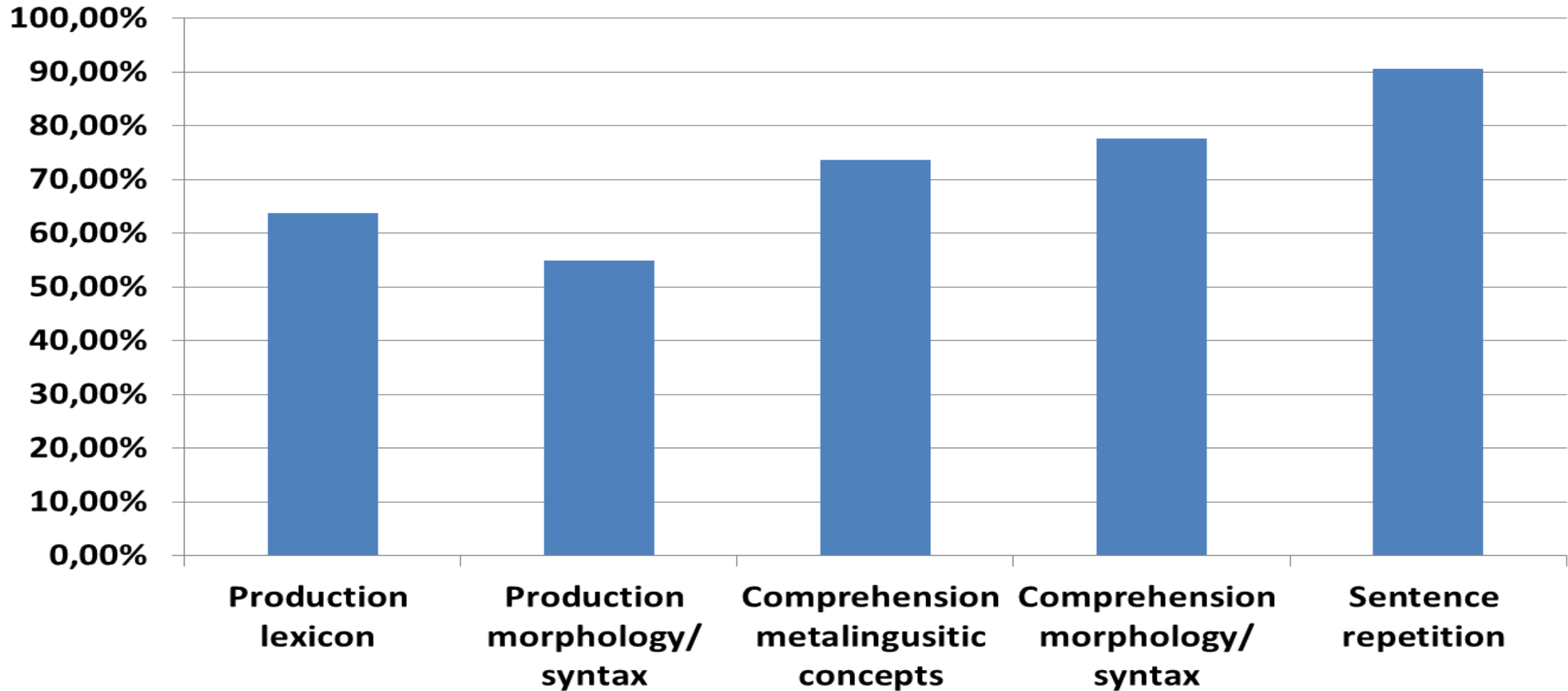
# Perception lexicon: nouns vs. verbs



# Perception lexicon: nouns vs. verbs type of errors



# DVIQ test: Results

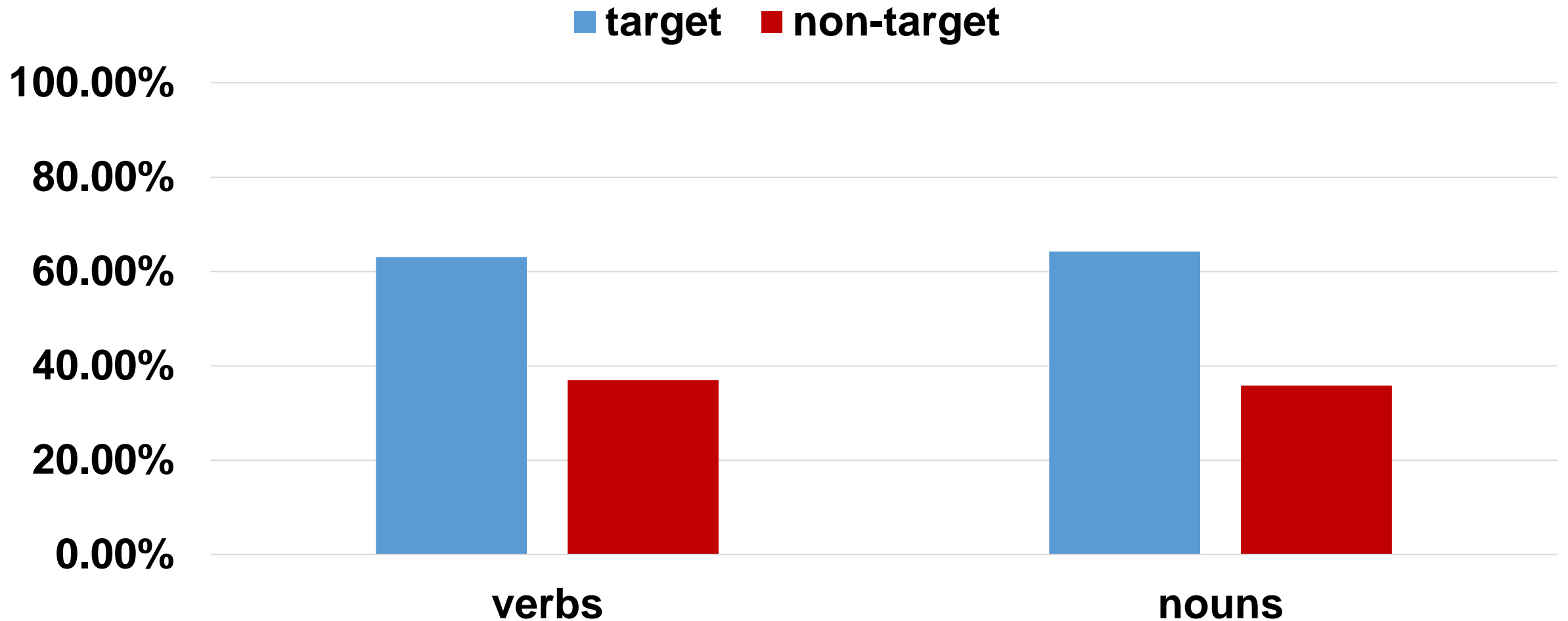


# DVIQ test: Results

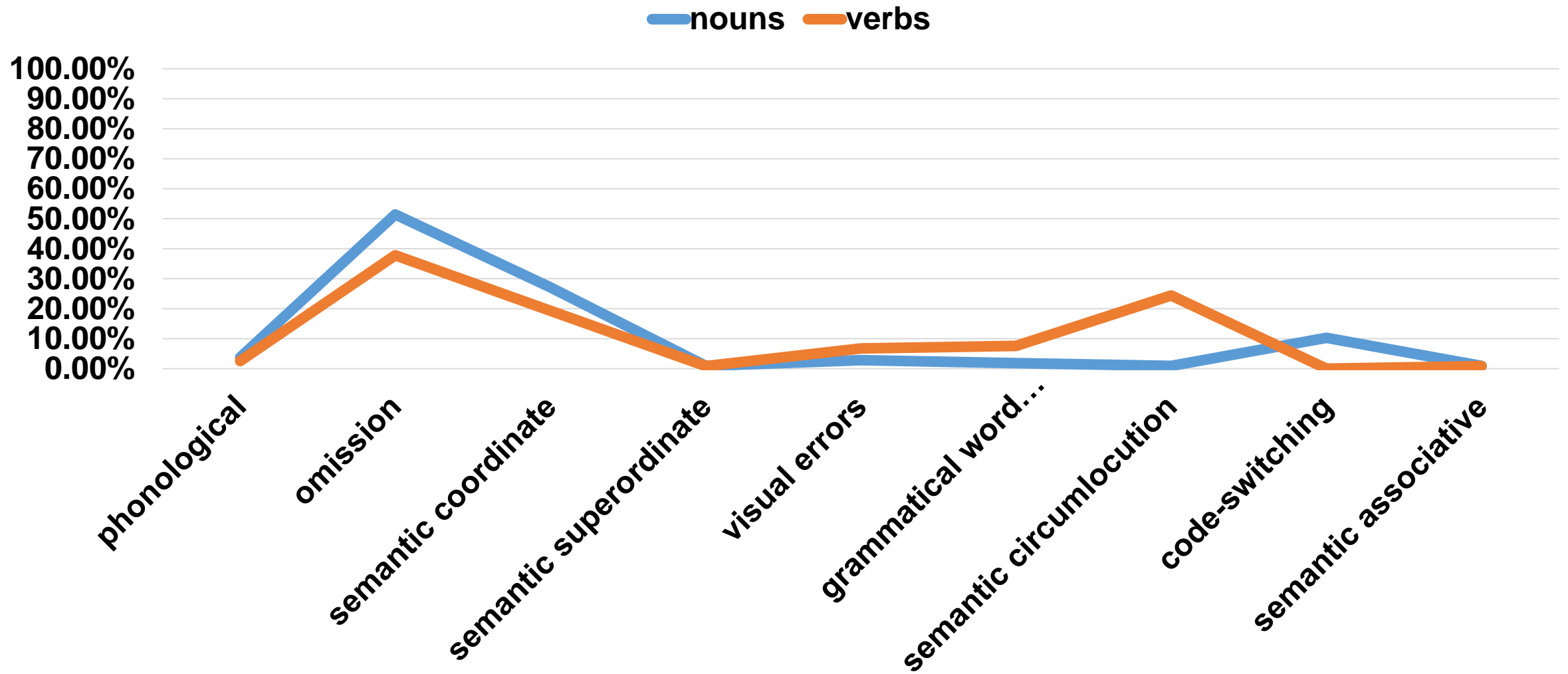
- It was found that **bilingual children** scored higher on **receptive skills** rather than on **productive skills**.
- **Paired samples t-test** showed that there is a statistically significant difference **between morphosyntax production and perception** ( $p=.000$ );
- The analysis of **lexicon production** (nouns and verbs) for Greek DVIQ by bilingual children showed that their **overall production for nouns** was **slightly better than for verbs**.



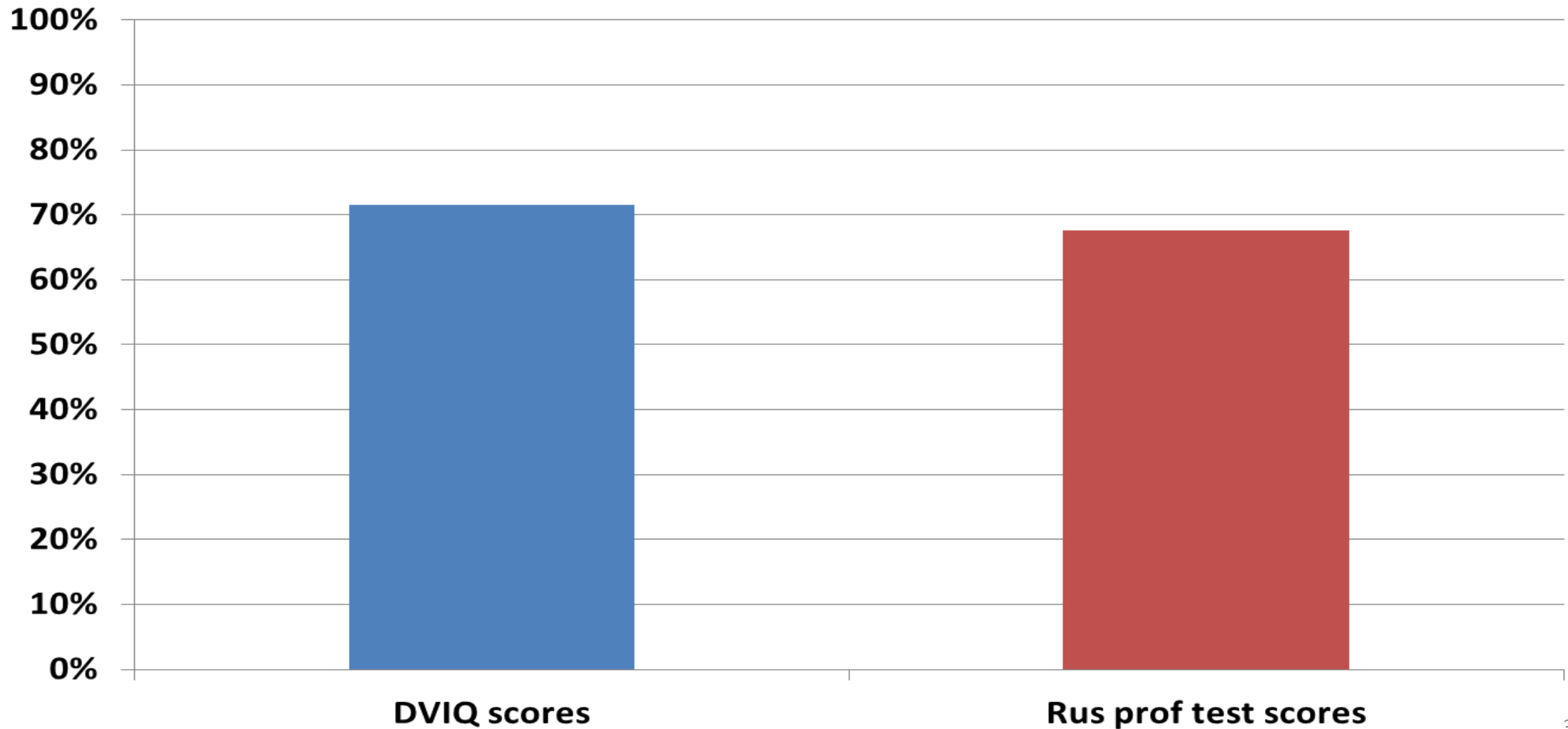
# DVIQ: Lexicon production: Nouns vs verbs



# Noun vs verbs: types of errors

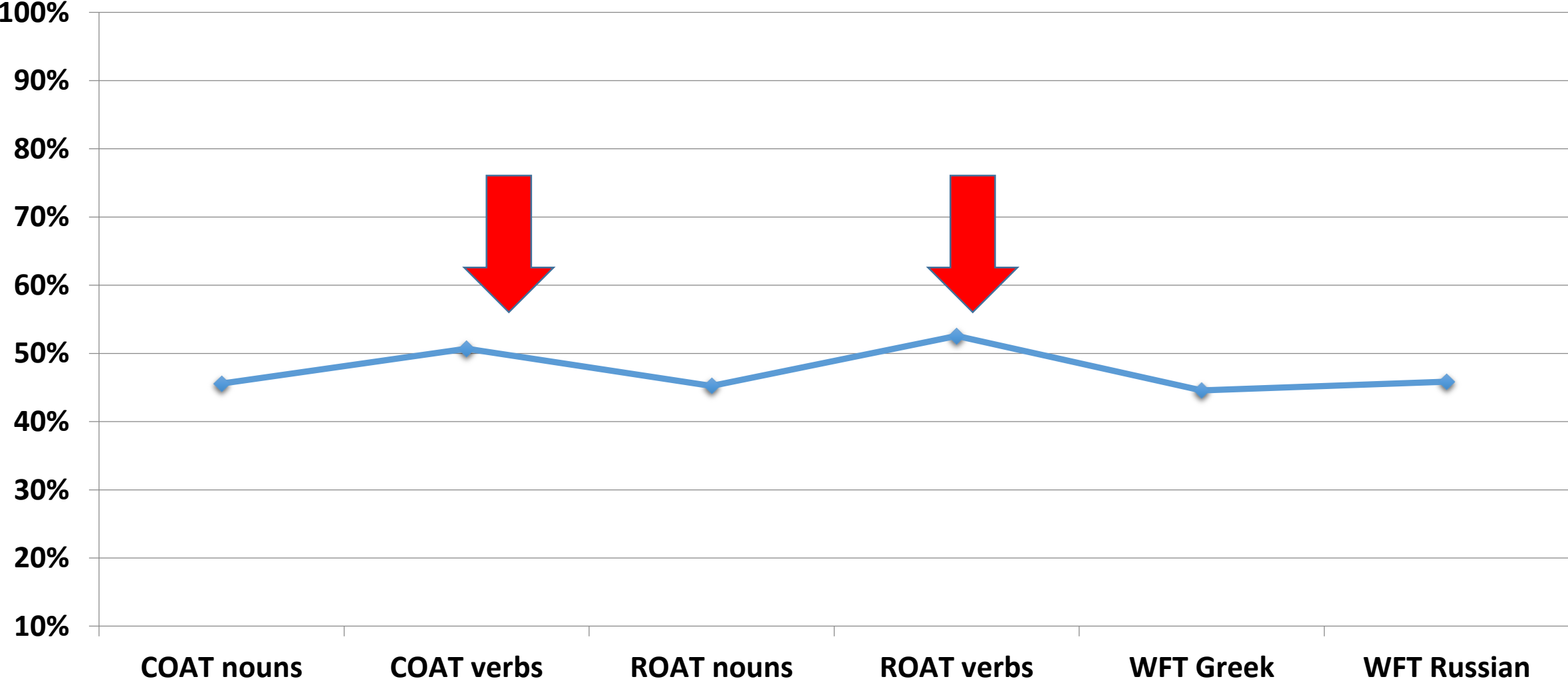


# DVIQ vs Russian proficiency test

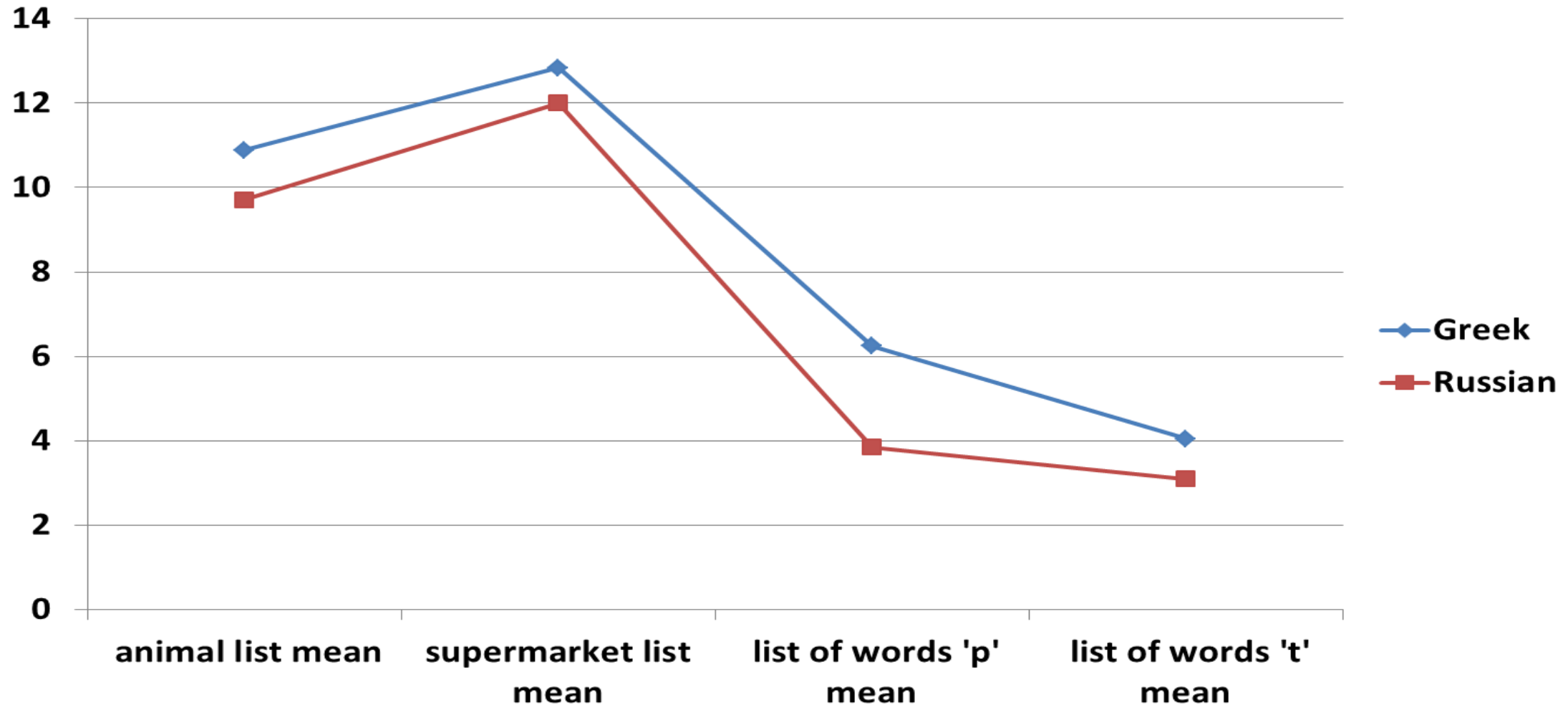


<b>Measures</b>	<b>CG</b>		<b>Russian</b>	
	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>
COAT nouns/ROAT nouns	19.16	7.14	18.34	7.65
COAT verbs/ROAT verbs	21.64	5.86	21.34	8.64
WFT Greek/WFT Russian	22.69	9.71	22.39	10.20
Fluency test Greek/Russian	14.75	3.62	6.51	3.49
Digit span test Greek/Russian	8.53	2.50	9.00	2.69

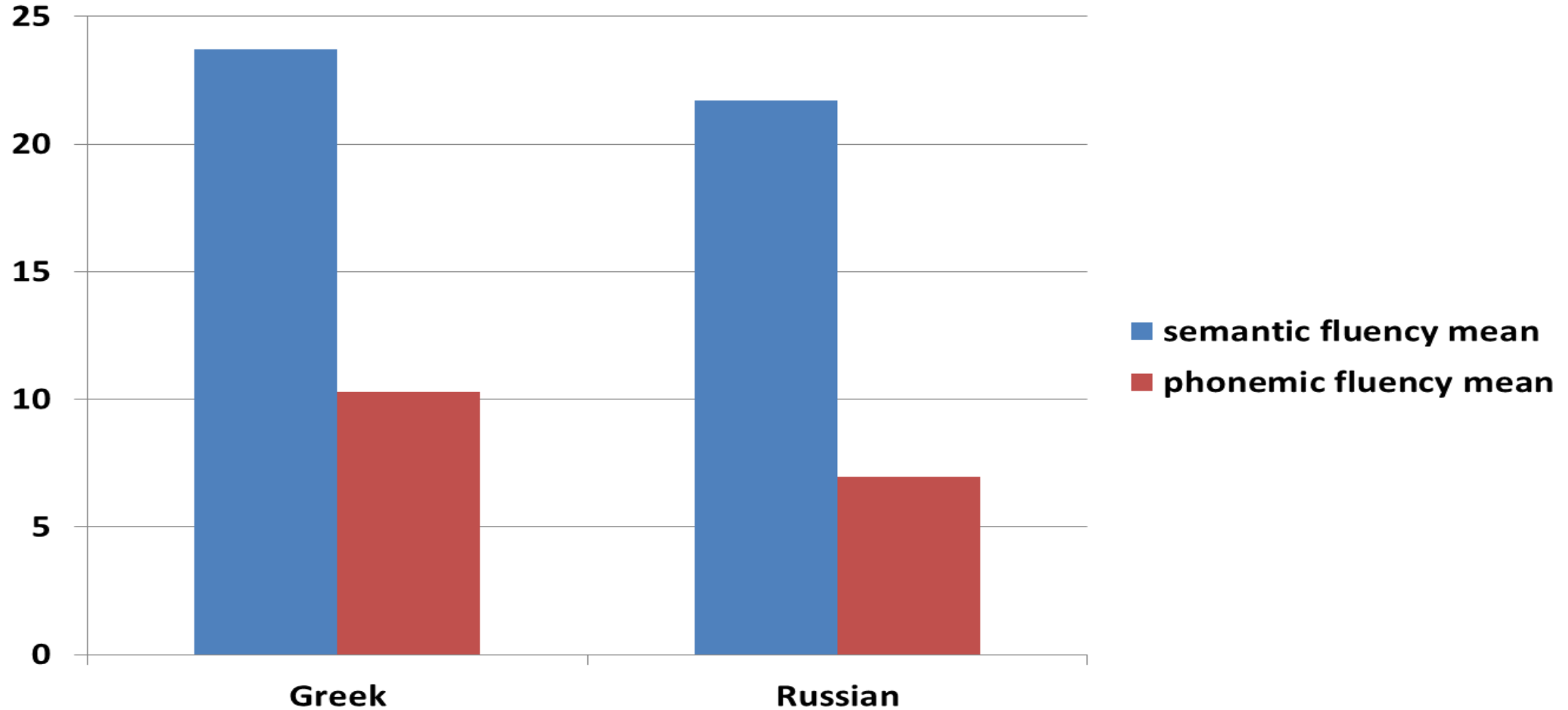
# COAT vs. ROAT (nouns/verbs), WFT



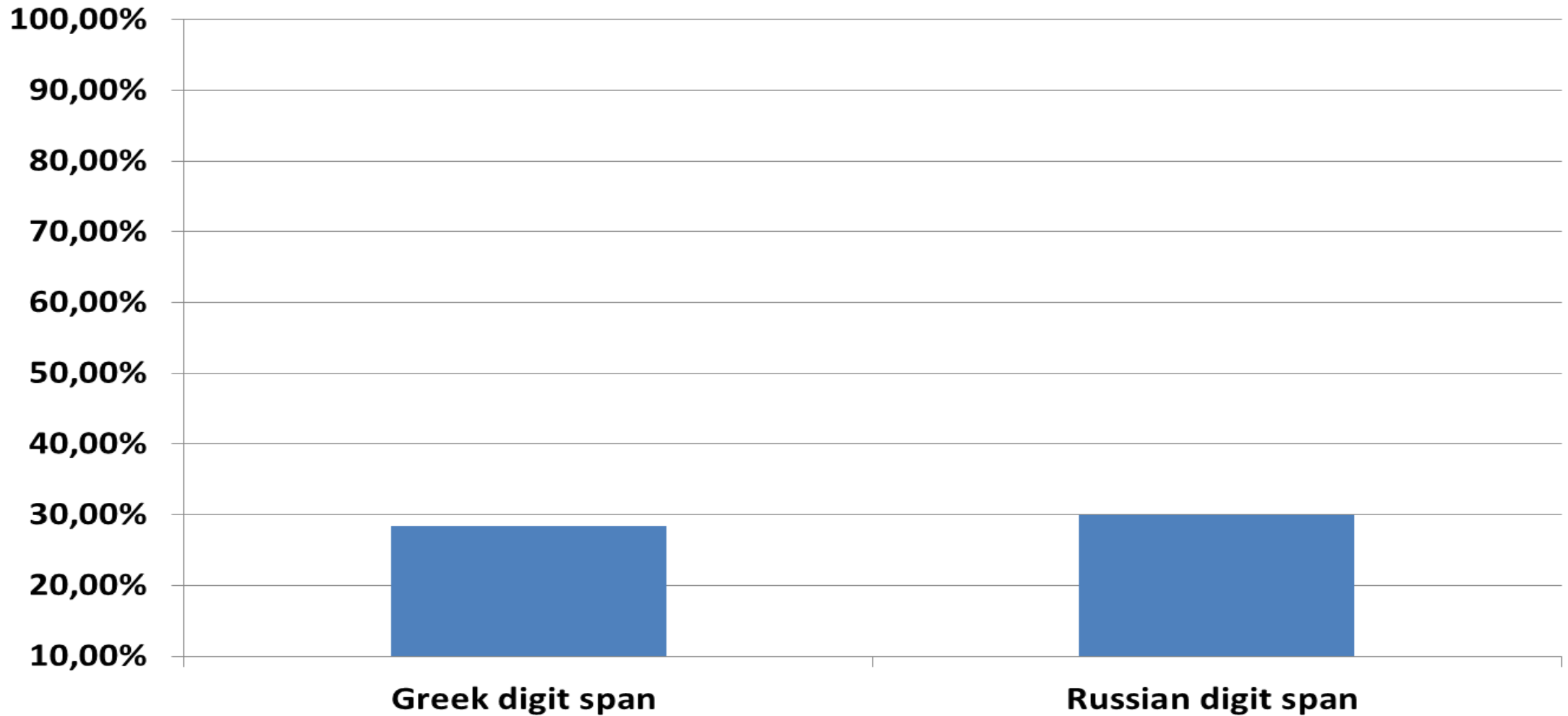
# Russian vs Greek fluency test mean



# Russian/Greek fluency test mean: semantic vs phonemic

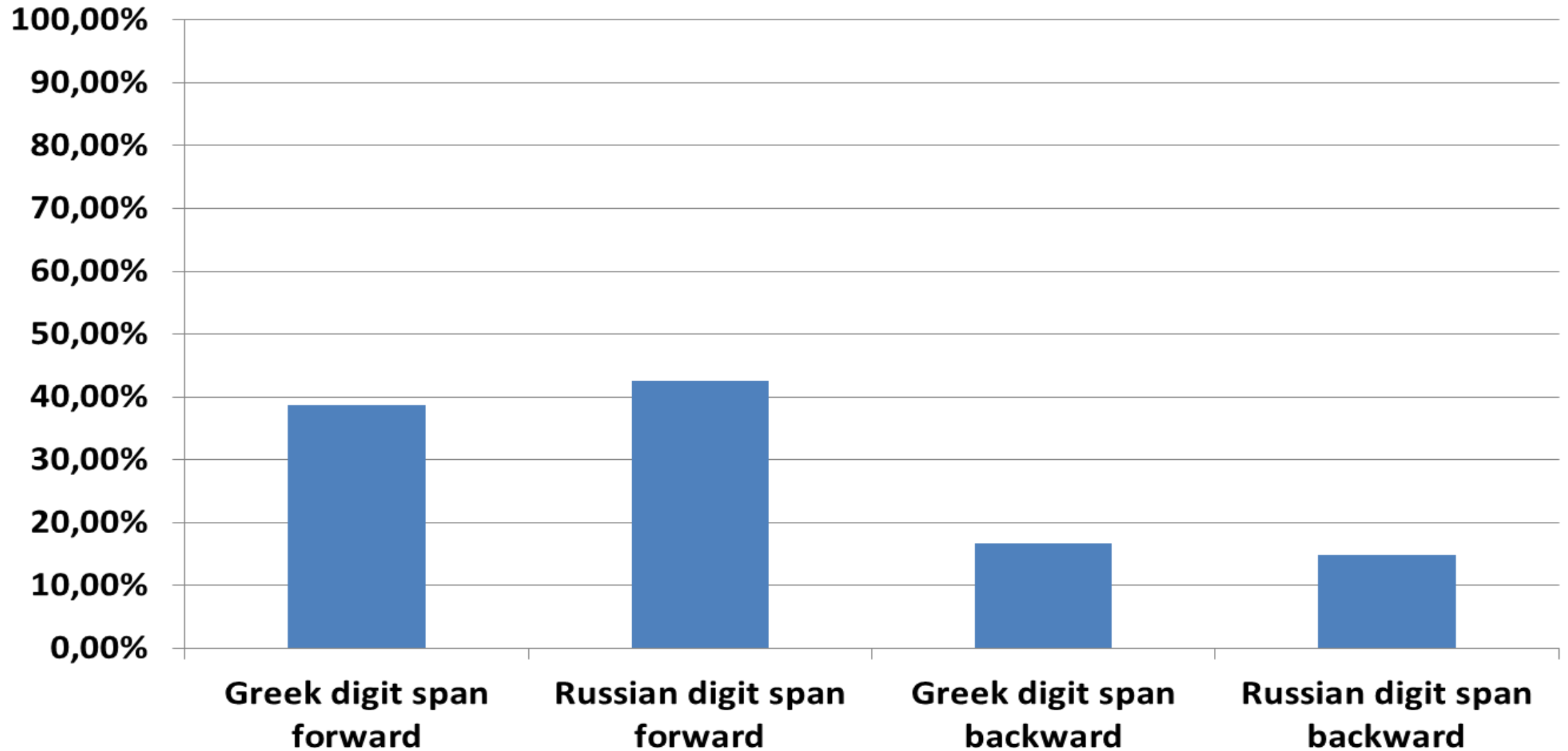


# Russian vs Greek digit span test



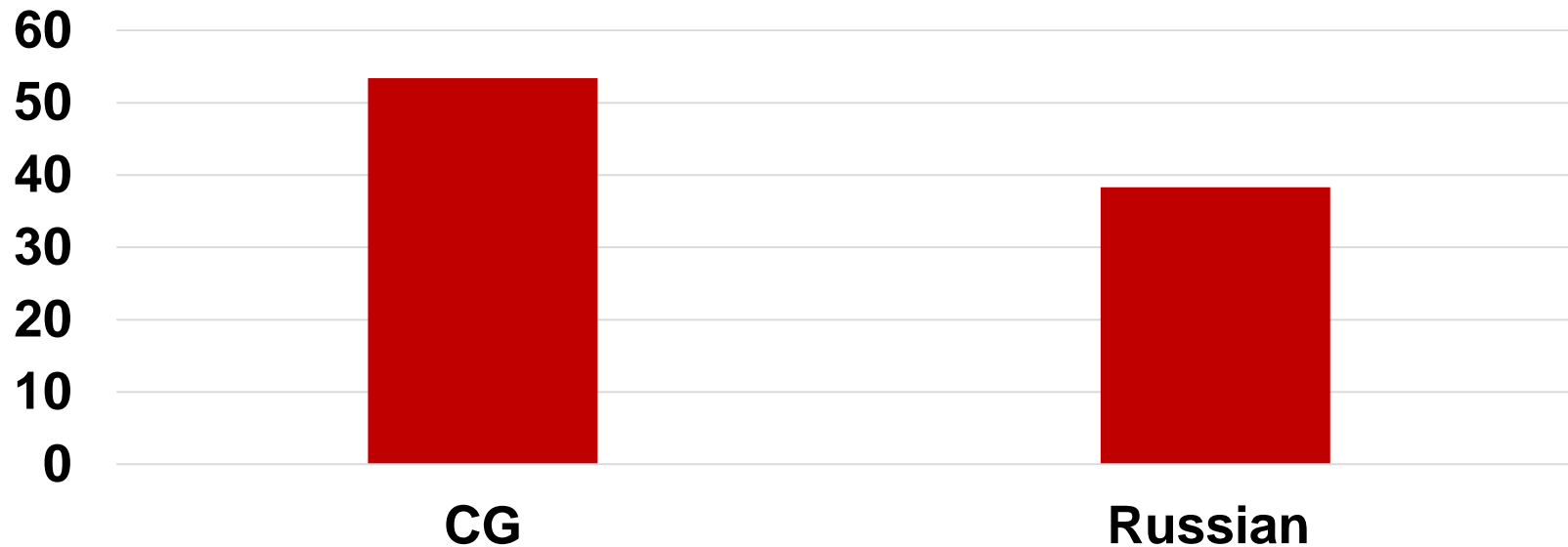


# Digit span test: backward/ forward



# Speech rate: Russian vs CG

- **Speech rate:** number of words per minute (oral production)
- **CG>Russian**
- **CG:** mean 53.39 (range 19-84), SD 15.93
- **Russian:** mean 38.3 (range 25-65), SD 15.12



# Pearson correlation (Sig. 2-tailed)

- AGE is **correlated with**:
- Russian digit span (.031); Russian fluency test (.033);
- ROAT nouns (.044); WFT Russian test (.084)
- Russian proficiency test **overall scores** (.007): **noun production** (.050); **verb production** (.010); **case production** (.006); **noun perception** (.009), **verb perception** (.009);
- Greek DVIQ test: **lexicon production** (.055); **morphosyntax comprehension** (.007);

# Pearson correlation (Sig. 2-tailed)

- **SCHOOL GRADE is correlated with:**
- **DVIQ Greek test: morphosyntax production (.075), comprehension of metalinguistic concepts (.006), morphosyntax comprehension (.038);**
- **Russian proficiency test total scores (.003), production lexicon nouns (.022), lexicon verbs (.003), production case (.001), perception grammatical structures (.024), perception lexicon nouns (.016), perception lexicon verbs (.002);**
- **ROAT nouns (.010); WTF Russian (.031)**

# Pearson correlation (Sig. 2-tailed)

- **Speech rate in CG (bilingual children) is correlated with:**
- **speech rate of bilingual children in Russian (.000), children's age (.006), school grade (.012), DVIQ total scores (.031), DVIQ morphosyntax production (.084), DVIQ comprehension of metalinguistic concepts (.001)**
- **Speech rate in Russian (bilingual children) is correlated with:**
- **age (.004), school grade (.021), DVIQ overall scores (.026), DVIQ morphosyntax production (.088), comprehension of metalinguistic concepts (.001); RPTMC overall scores (.002), RPTMC lexicon production, nouns (.009), RPTMC lexicon production, verbs (.006), RPTMC case production (.037), RPTMC lexicon perception, nouns (.020); ROAT total scores (.008), ROAT nouns (.010), ROAT verbs (.005)**
- **Speech rate in CG (mothers of bilingual children) is correlated with:**
- **children' DVIQ overall scores/production (.066), DVIQ morphosyntax production (.043), DVIQ comprehension of morphology (.029).**

# Pearson correlation (Sig. 2-tailed)

- COAT **nouns** and ROAT **nouns** (.072)/Greek DVIQ **lexicon production** (.001);
- COAT **verbs** and DVIQ Greek **lexicon production** (.000);
- Russian proficiency test **noun production** (.000);
- WTF **Greek** and WTF **Russian** (.061)/Greek DVIQ **lexicon production** (.000)
- Russian proficiency test **noun production** (.000);
- **Russian** digit span and Russian proficiency test **overall scores** (.001);
- **Russian** fluency test and Russian proficiency **test overall scores** (.000);
- **Greek** fluency test and Greek DVIQ test **overall scores** (.045);
- Russian proficiency **test total scores** and Greek DVIQ **test total scores** (.038)

# Summary

- Overall, **bilingual children, heritage speakers of Russian**, showed **better performance in Greek (CG) than Russian** (language proficiency level, speech rate, fluency)
- **Perceptive skills > productive skills**
- **Nouns > verbs** (DVIQ and RPTMC)
- **Verbs > nouns** (COAT/ROAT)

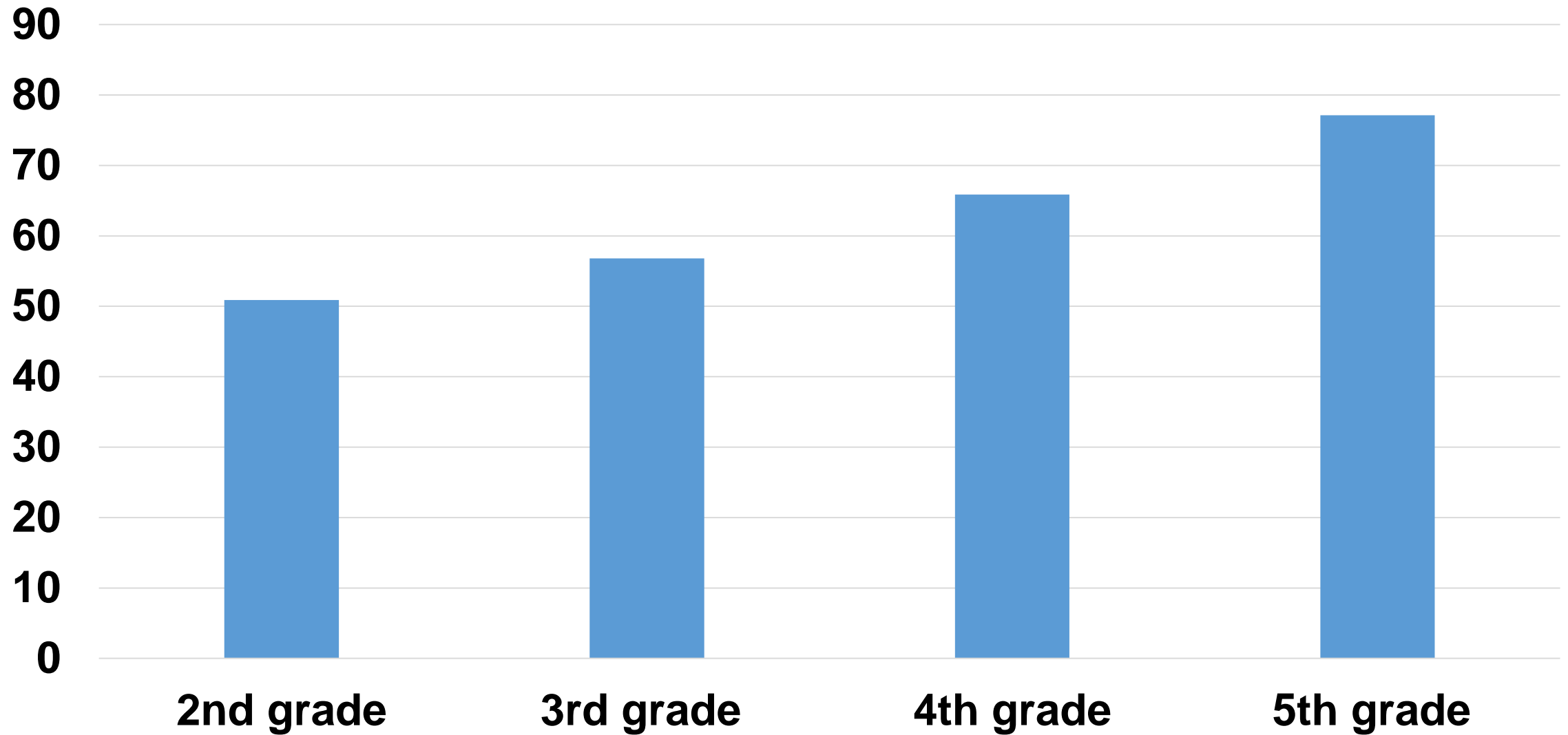
# Study II



# Reading speed

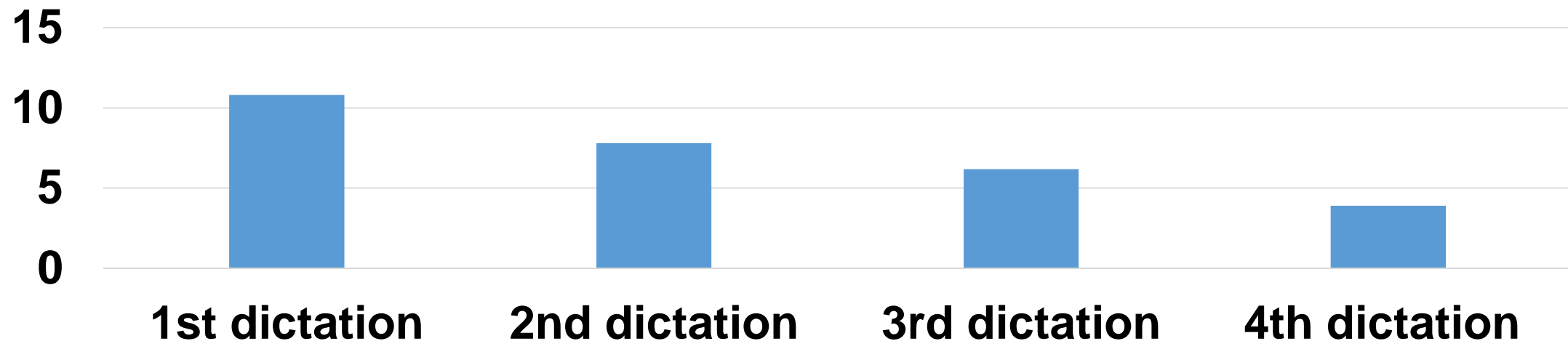
- **Reading speed: words per minute (WPM):** a measure of words processed in a minute
- **Bilingual Russian-CG children** were asked to **read the texts** (the data was recorded, transcribed and analysed):
  - **Results** (2<sup>nd</sup> semester 2015-2016 school year):
    - **2<sup>nd</sup> grade:** mean **50.9** (range: 22-85, SD 19.21)
    - **3<sup>rd</sup> grade:** mean **56.8** (range: 41-70, SD 9.65)
    - **4<sup>th</sup> grade:** mean **65.87** (range: 46-106, SD 19.34)
    - **5<sup>th</sup> grade:** mean **77.12** (range: 36-128, SD 41.41)
- **Overall, their reading speed is lower than L1 Russian monolingual norms**

# Reading speed (WPM)



# Dictations: Orthography: Error analysis (1)

- **2<sup>nd</sup> grade: 4 dictations analysed** (throughout the year): overall mean errors: 28.72 (range 13-50, SD 12.83)
- **1<sup>st</sup> dictation** (15 words, 4 sentences): **mean errors 10.81** (range 4-20, SD 4.55)
- **2<sup>nd</sup> dictation** (15 words, 5 sentences): **mean errors 7.81** (range 2-14, SD 3.45)
- **3<sup>rd</sup> dictation** (16 words, 4 sentences): **mean errors 6.18** (range 2-11, SD 3.5)
- **4<sup>th</sup> dictation** (19 words, 5 sentences): **mean errors 3.9** (range 0-9, SD 2.87)



# Dictations: 2<sup>nd</sup> grade

~~Ф~~<sup>4</sup>ектанти

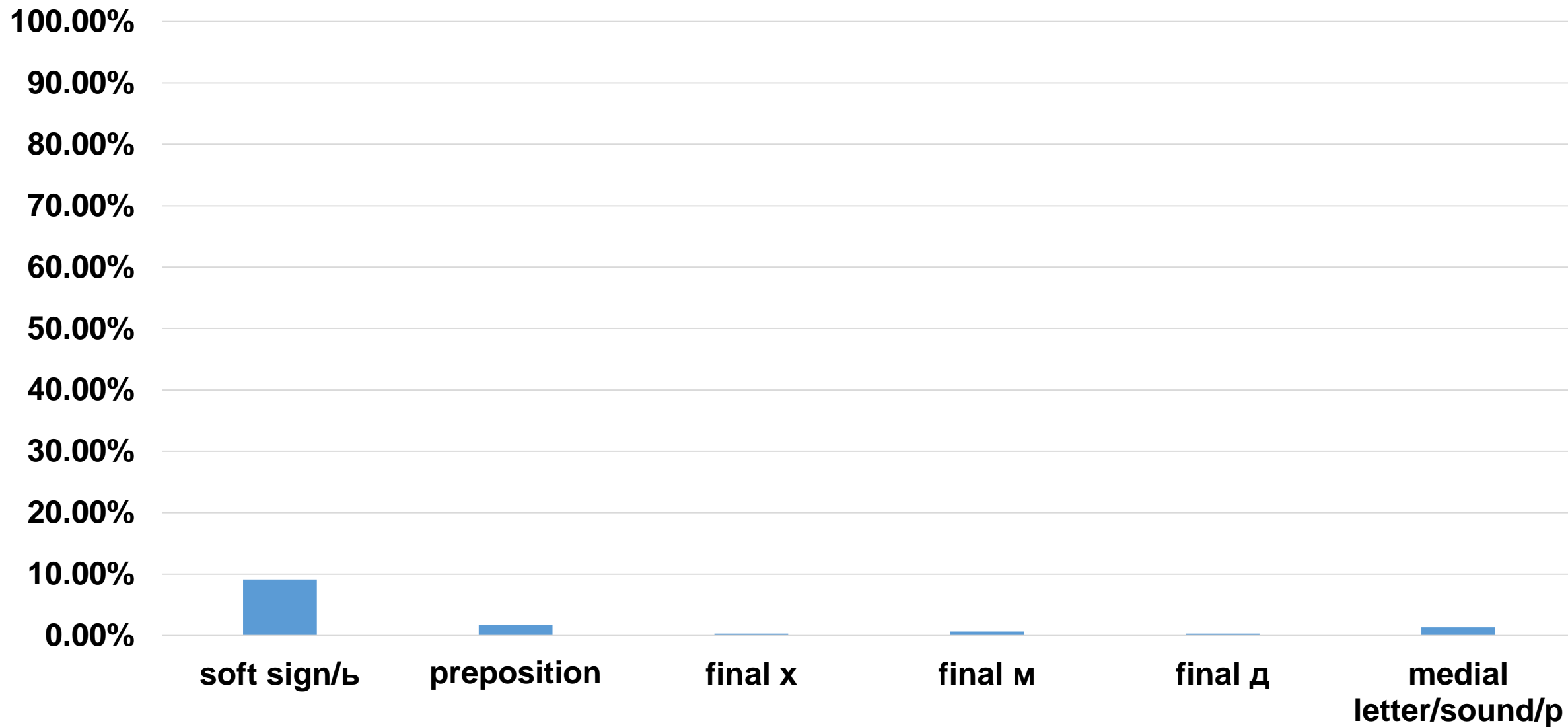
Алеша искал в лесу грибы.  
Воруж в кустах замурован  
листья.

Мальчик<sup>63</sup> испугался  
А это был ёж.

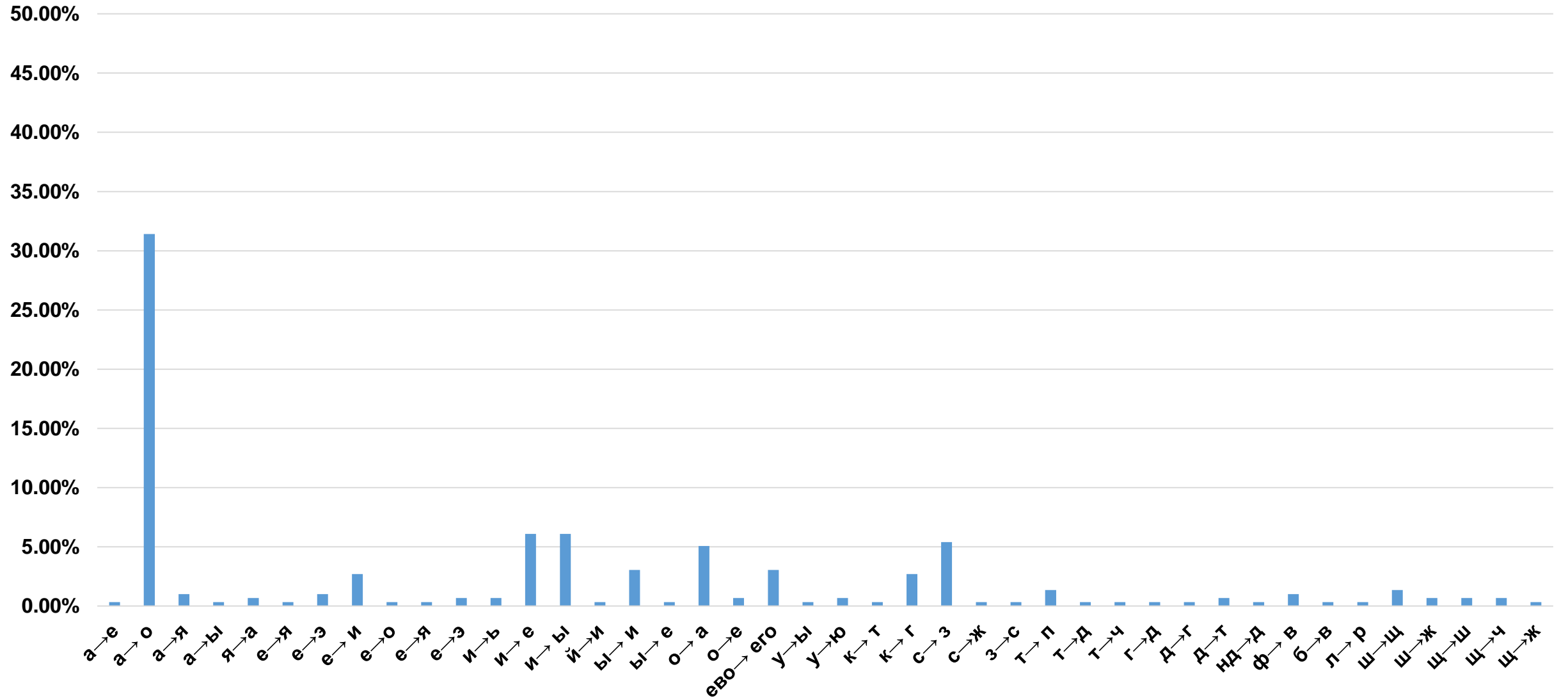
# Type of errors



# Omission errors

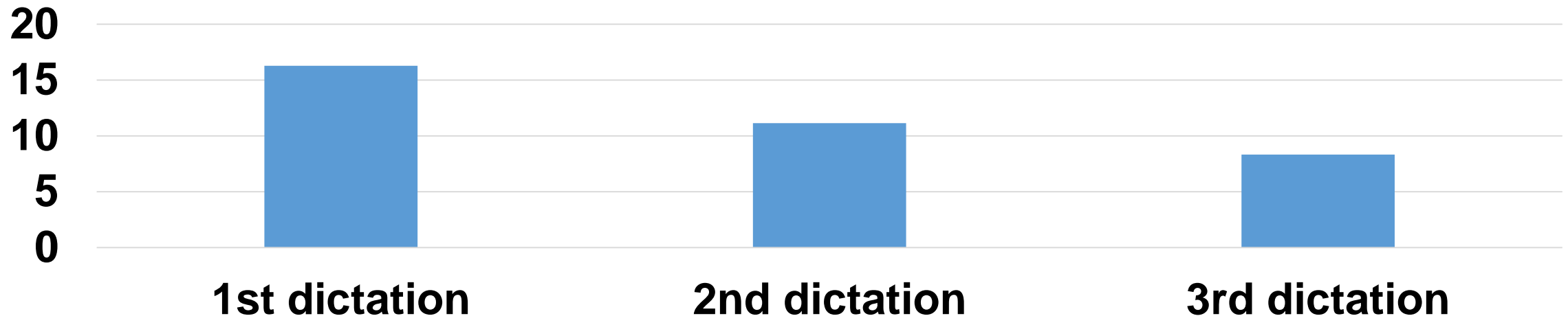


# Substitution errors



# Dictations: Orthography: Error analysis (2)

- **3<sup>rd</sup> grade: 3 dictations analysed** (throughout the year): overall mean errors: 34.57 (range 23-52, SD 10.14)
- **1<sup>st</sup> dictation** (26 words, 6 sentences): **mean errors 16.28** (range 9-25, SD 10.14)
- **2<sup>nd</sup> dictation** (27 words, 5 sentences): **mean errors 11.14** (range 7-17, SD 3.62)
- **3<sup>rd</sup> dictation** (34 words, 6 sentences): **mean errors 8.33** (range 3-15, SD 5.05)





# Dictations: 3<sup>rd</sup> grade

## Диктант

Оля ~~не~~ ~~не~~ <sup>а</sup> часто болела.

А её школьная подружка Лена росла ловкой и сильной.

Девочки задумались. Почему так?

Каждый день Лена накаивает с зарядки

Зимой катается на лыжах и коньках

Лена решила помочь Оле стать сильной

~~XX~~

# Dictations: Orthography: Error analysis (3)

- **4<sup>th</sup> grade: 2 dictations analysed** (throughout the year): overall mean errors: 21.12 (range 6-36, SD 10.5)
- **1<sup>st</sup> dictation** (33 words, 8 sentences): mean errors **15.5** (range 5-27, SD 7.42)
- **2<sup>nd</sup> dictation** (48 words, 6 sentences): mean errors **5.62** (range 0-14, SD 4.4)



# Dictations: 4<sup>th</sup> grade

Диктант  
Тане чудесное утро. Солнце  
заливает ярким светом ~~широкий~~  
широкий <sup>у</sup>луч. Пестреют цветы.  
Трава сохраняет ещё её <sup>н</sup>очную  
свежесть. Стоит удивительная  
тишина. Но вот пробежал  
лёгкий <sup>в</sup>етерок. Вераушки  
кустов завошмавились. Задры-  
жками капелки росы. С реки  
донеслись шлоа.

# Dictations: Orthography: Error analysis (4)

- **5<sup>th</sup> grade: 2 dictations analysed** (throughout the year): overall mean errors: overall mean errors: 29.8 (range 1-69, SD 20.95)
- **1<sup>st</sup> dictation** (59 words, 9 sentences): **mean errors 19.5** (range 1-38, SD 11.86)
- **2<sup>nd</sup> dictation** (93 words, 12 sentences): **mean errors 12.55** (range 0-31, SD 13.81)



# Dictations: 5<sup>th</sup> grade

## Диктант

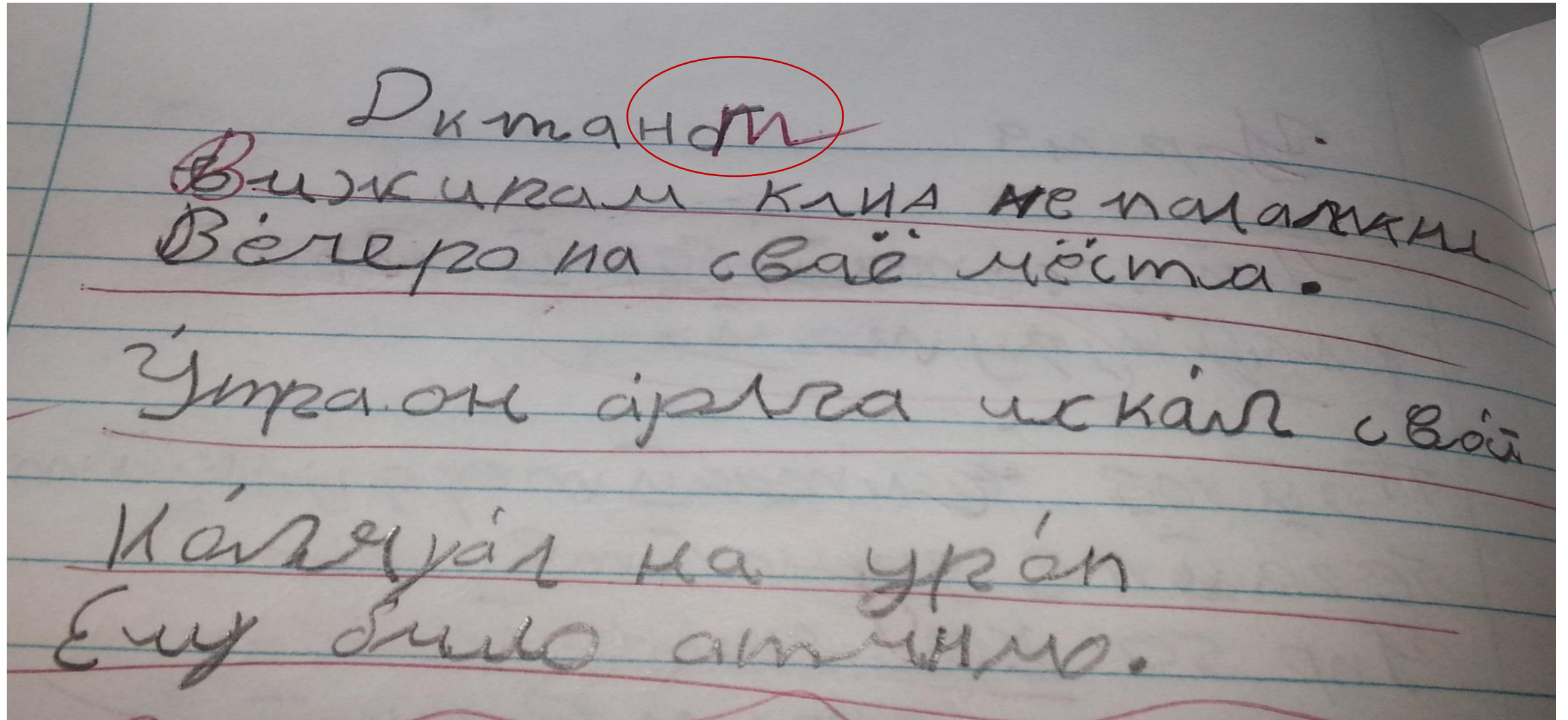
Жил у нас в доме огромный толстый кот Иваниль-Ленивый, неповоротливый. Иваниль любил улетая так, чтобы ему было и тепло и мягко.

Но и маме на подушке уляжется, то подушку забирется. А однажды вот что натворил. Замесила мама тесто в кастрюле и поставила на печь. Чтобы оно лучше поднялось, сверху еще тонким платком прикрывали. Прошло два часа. Мамочка пришла посмотреть - хотило ли тесто поднимается. Взглянула в кастрюлю, сверху висела падающая, как на перине, Иваниль спит. В тесто прицал и сам весь измазала. Мама мы без пирога пошла и осталась. А Иванилька вымыли пришлось.

\* \*

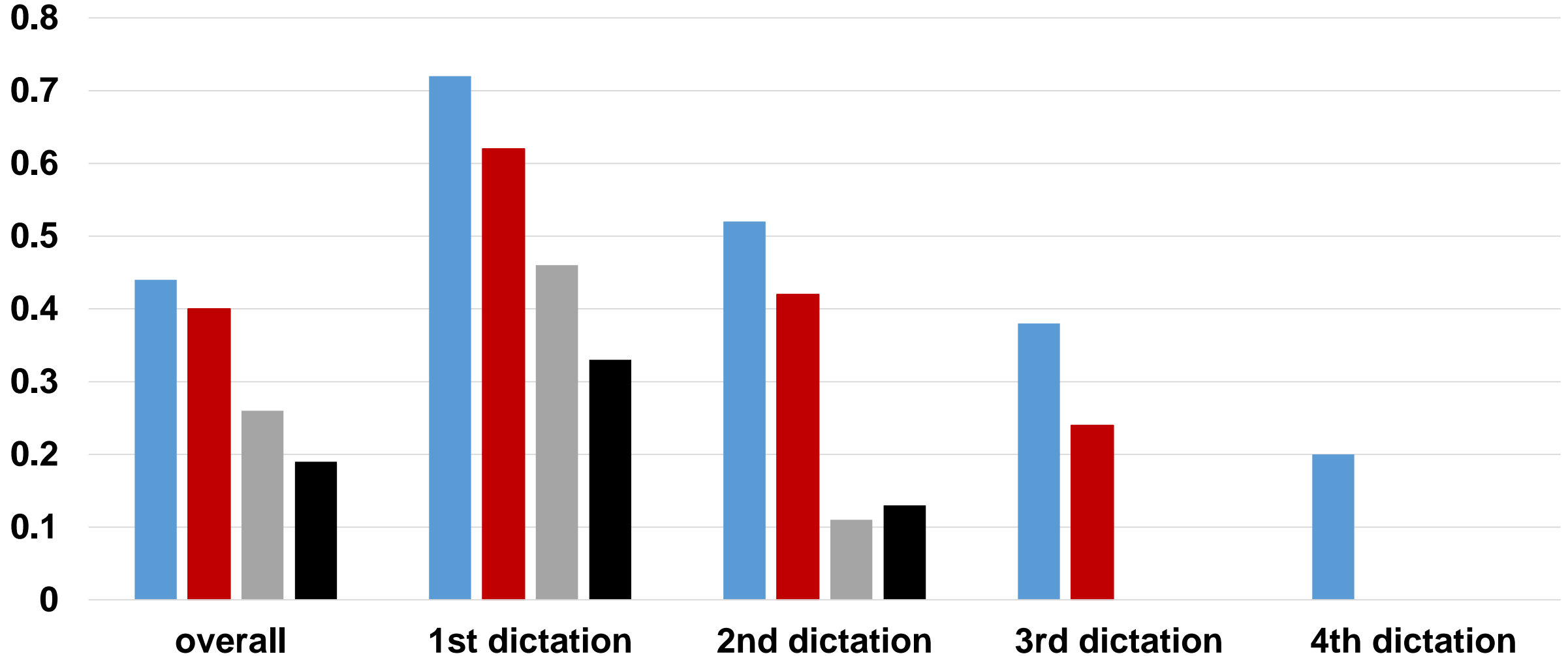


# Errors: Transfer from English



# Dictations: Number of errors/number of words ratio

■ 2nd grade ■ 3rd grade ■ 4th grade ■ 5th grade





# Pearson correlation (Sig. 2-tailed)

- **Reading speed in Russian (bilingual children)** is correlated with:
  - **school grade** (.005), **age** (.003), **overall dictation errors** (.000), **1<sup>st</sup> dictation errors** (.025), **2<sup>nd</sup> dictation errors** (.009), **overall error/word ratio dictation errors** (.000), **1<sup>st</sup> dictation error/word ratio** (.000), **2<sup>nd</sup> dictation error/word ratio** (.000)
- **School grade** is correlated with:
  - **reading speed in Russian** (.005), **age** (.000), **1<sup>st</sup> dictation errors** (.022), **4<sup>th</sup> dictation errors** (.000), **overall error/word ratio** (.000), **1<sup>st</sup> dictation error/word ratio** (.000), **2<sup>nd</sup> dictation error/word ratio** (.000), **3<sup>rd</sup> dictation error/word ratio** (.086), **4<sup>th</sup> dictation error/word ratio** (.000)
- **Gender** is correlated with:
  - **4<sup>th</sup> dictation errors** (.068), **overall error/word ratio** (.091), **1<sup>st</sup> dictation error/word ratio** (.018), **3<sup>rd</sup> dictation error/word ratio** (.012), **4<sup>th</sup> dictation error/word ratio** (.065)
- **Age** is correlated with:
  - **reading speed in Russian** (.003), **school grade** (.000), **overall error/word ratio** (.002), **1<sup>st</sup> dictation error/word ratio** (.001), **2<sup>nd</sup> dictation error/word ratio** (.000)

# Summary (1)

- Overall, there is a **developmental pattern** with respect to **reading speed** (WPM) and **orthographical accuracy** (written dictations), **improvement of reading and writing skills** from the 2<sup>nd</sup> to the 5<sup>th</sup> grade with increase of schooling exposure/input
- **Age, schooling, gender** affect the development of reading and writing skills of bilingual children.
- **There is correlation between reading and writing skills.**
- **Type of errors (dictations): developmental** and due to **cross-linguistic influence** (from CG and from English), due to **phonemic misanalysis**, difficulties with **sound-letter correspondence**, **lack of knowledge and comprehension** of a particular Russian word

# Summary (2)

- **Type of errors:** substitution and omission of letters, insertion of syllables, use of wrong vowel in **(un)stressed position**
- The bilingual children **do not distinguish between и/ы and ш/щ letters/sounds** as ы and щ letters/sounds are not present in CG.
- They **omit soft sign ь** (with consonants, in the ending of the verbs)
- They **do not distinguish between vowels a/o** in stressed and unstressed position, prefixes, **voiced and voiceless consonants**
- **Bilingual children** tend to write words the way they **pronounce** them, violating **Russian orthography rules**
- Some children tend to use **Greek or English orthography rules/letters**

# Conclusion (1)

- Since nowadays **multilingualism** is regarded as a true advantage (Nelde, 2007), **literacy** in various languages is crucial for **academic achievement, employment and income prospects** – in short, for well-being in the society.
- **Literacy of bilingual Russian-CG children** depends on the *sociolinguistic background of their families*, mainly, on the *social identity* of their parents and their *attitudes towards the multiple languages*.
- **Parents' identity** becomes a bridge from the **social context** to the **child's first language maintenance and second language acquisition and use** (Walters, Armon-Lotem, Altman, Topaj, and Gagarina, 2014).

# Conclusion (2)

The results of **the RPTMC and DVIQ** showed that **bilingual children in Cyprus**

- have higher scores for **perceptive skills** than **productive skills**
- show a **developmental pattern with age** for **production and receptive skills, reading and writing skills**

# Conclusion (3)

- The **gap between comprehension and production** in bilingual children can be **due to the bilingualism effect** (Oller and Eilers, 2002),
- it may be the **evidence of passive bilingualism** (De Houwer, 2007) as **bilingual children** might have *high level of comprehension in both languages, and high level of production only in the dominant one.*
- **Comprehension precedes production** in lexical development (Benedict, 1979; Clarks and Hecht, 1983); **bilingual children lag behind monolinguals** with respect to **productive skills**, *but perform comparatively to monolinguals* with respect to **comprehension or receptive skills** (Thordardottir, 2011)

# Conclusion (4)

- The **gap between production and comprehension** *can be eliminated with more exposure to both languages and more output in both languages* (Thordardottir, 2011; Hoff, 2006; Hoff et al., 2012; Pearson et al., 1997; Bedore et al., 2012);
- **semantic development** is influenced by **input**, while **morphosyntax** is affected by **both input and output** (Bohman et al., 2010)
- More **research** is needed to **inform** the parents and the authorities about the **importance of a balanced bilingual development of a child**, without forgetting **a heritage or a minority language**.

**Thank you!**

**Спасибо!**

**Ευχαριστώ!**



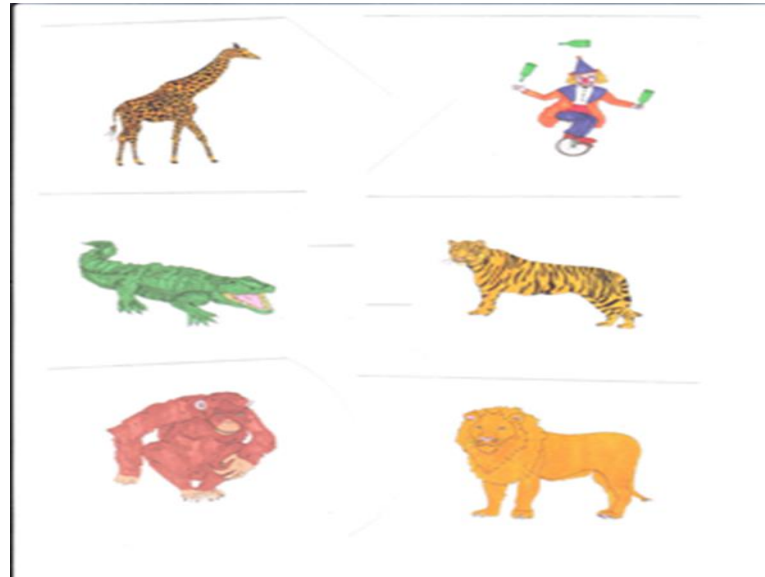
# Production: lexicon

- **Picture-naming task** (**factors**: unambiguous identifiability of the pictures, frequency of the item (high-, mid- and low-frequency; semantic field; the lexical-grammatical category of aspect)
- **Nouns (26)**
- **Verbs (26)**



# Production: case

- **Elicitation test** (the child answers the questions and put the puzzle pieces together)
- Кого ищет зебра? (Who is zebra looking for?)
- Кому нравится тигр? (Who likes tiger?)
- Puzzle game (6 pairs/questions: ACC and DAT)



# Production: verbal inflection

- **Elicitation test:** actions: *cut*, *write*, *close*, *take*, *play* and *read* (additional **objects are needed**: scissors, paper, box, toys, pen, pencil).
- **6 verbs, 1<sup>st</sup> and 2<sup>nd</sup> person singular imperfective present** (12 test items)
- **Tell me who is doing what? Changing the roles.**
- Я режу (I am cutting).
- Ты пишешь (You are writing).
- Both **perfective** and **imperfective verbs** were used/aspectual pairs

# Perception: grammatical constructions

- **Picture-selection task with auditory sentence-presentation** (22 test items):
- 2-element sentences, 3-element sentences, aspect, negation, personal pronouns, relative clauses, double object constructions, topicalisation, subordination, prefixing of verbs, passive voice; 3 distractors exhibit minimal grammatical or lexical differences)
- Девочка видит что мальчик пьет воду.
- (The girl can see that the boy is drinking water).

Choose:

A

B

C

D



# Perception: lexicon

- **Picture-selection task with auditory presentation of words (noun/verb), 3 distractors: semantically-related, phonologically-related and unrelated item of the same part of speech.**

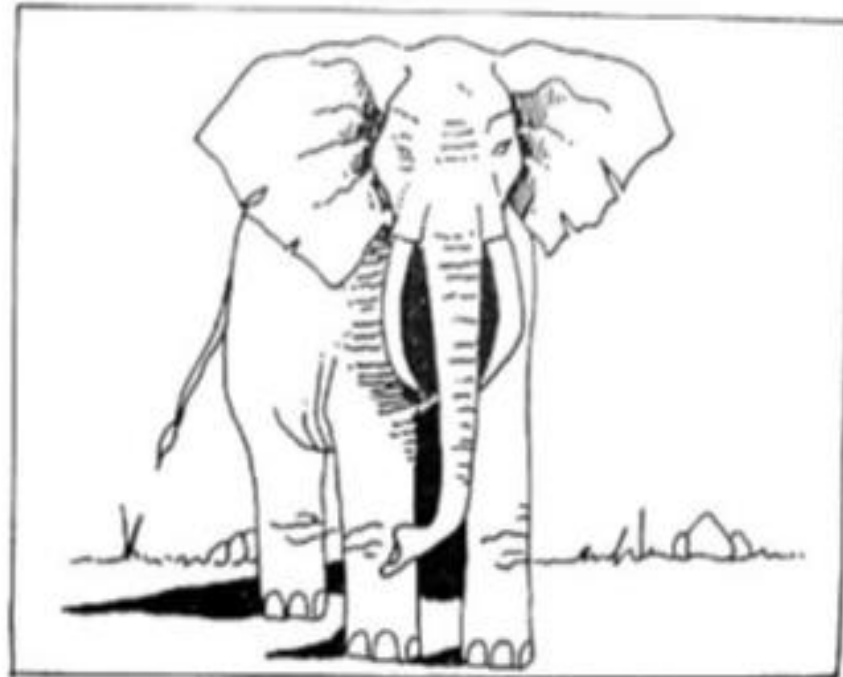
- Nouns (10)

- Verbs (10)



# Lexicon production

- **Verbs:** Τι κάνουν τα παιδιά; (γράφουν)/What are the children doing?
- **Nouns:** Τι είναι αυτό; (ελέφαντας)/What is this? (27 items: **13 common nouns** ranging from **high to low frequency** and **14 verb** phrases )



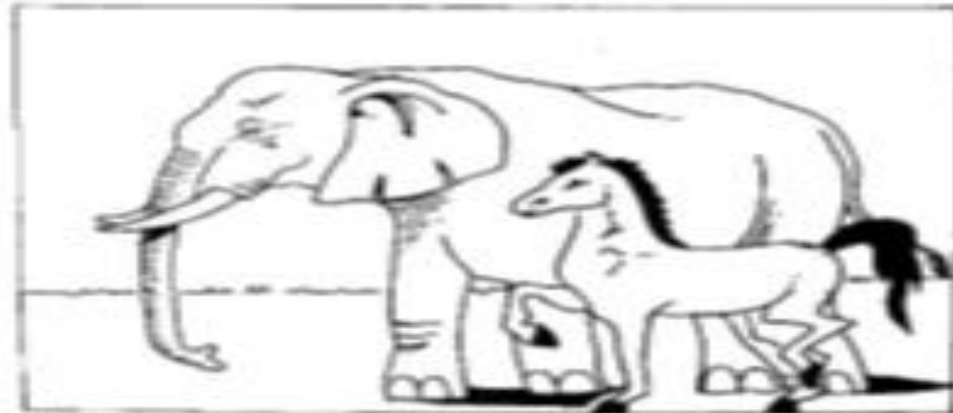
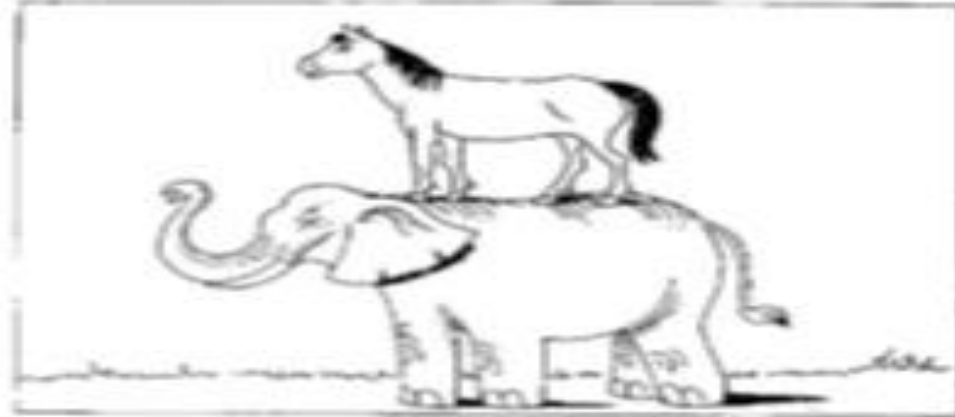
# Morphosyntax production

- Elicitation questions (24 test items: **agreement, regular and irregular plural forms, locative prepositions, possessive, demonstrative and reflexive pronouns, past, future and subjunctive, and subordinate clauses**).
- Τούτο το κορίτσι διαβάζει. Τούτα τα κορίτσι..... (παίζουν)./This girl is reading. These girls are.....(playing).



# Comprehension of metalinguistic concepts

- Δείξε το ελέφαντα που είναι δίπλα στο άλογο.
- Show me please the elephant which is near to the horse. **(25 test items)**

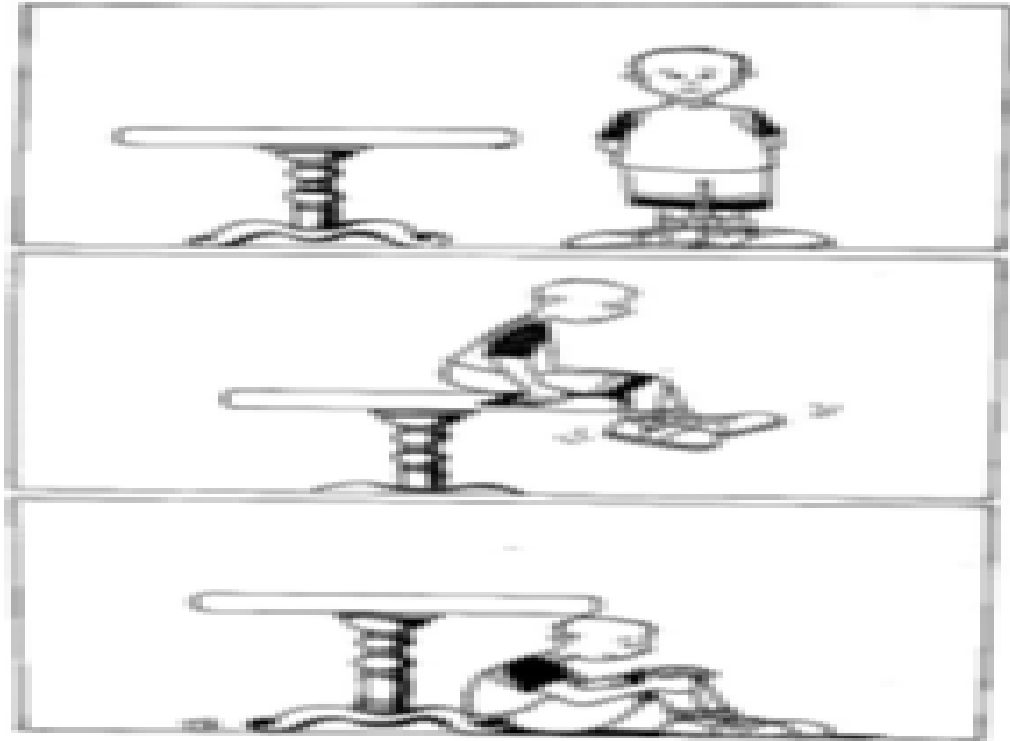




# Morphosyntax comprehension

Το παιδί είναι κάτω από τραπέζι.

The child is under the table: A B C (31 test items: **test similar structures as the expressive subtest as well as negation**)



# Sentence repetition task

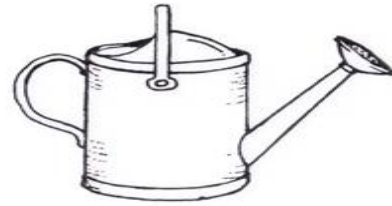
- Δεν διάβασα τα μαθήματα μου.
- I did not read/study my lessons.
- **(16 test items)**

# Word finding test

11



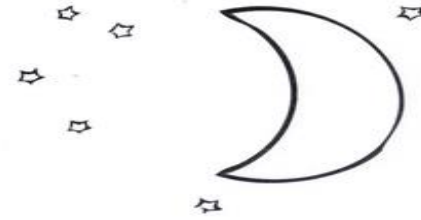
22



28



3



# Cypriot object and action test



# Lexicon production: types of errors

- **Phonological error**: using the word 'сосиска' *sosiska* sausage instead of 'сосать' *sosat* suck (R—CG16) for **verbs**.
- **Semantic coordinate error**: using the word 'тигр' *tigr* tiger instead of 'кошка' *koshka* cat (R—CG1) for **nouns**; using the word 'режет' *rezet* cut instead of 'пилит' *pilit* saw (R—CG9) for **verbs**.
- **Semantic superordinate error**: using the word 'птица' *ptica* bird instead of 'чайка' *chaika* seagull (R—CG2) for **nouns**; using the word 'мастерить' *masterit* make instead of the word 'шить' *shit* sew (R—CG19) for **verbs**.

# Lexicon production: types of errors

- **Semantic associative error**: using the word ‘олень’ *olen* deer instead of ‘рога’ *roga* horns (R—CG7) for **nouns**; using word ‘играть’ *igrat* play instead of ‘сидеть’ *sidet* sit (R—CG1) for **verbs**.
- **Visual errors**: using the word ‘ручка’ *ruchka* pen instead of ‘кисточка’ *kistochka* brush (R—CG16) for **nouns**; using the word ‘поцеловать’ *pocelovat* kiss instead of ‘танцевать’ *tancevat* dance (R—CG23) for **verbs**.
- **Grammatical word class substitution errors**: using the word ‘поливать’ *polivat* to water instead of лейка *leika* water can (R—CG17) for **nouns**; using the word ‘пожар’ *pozar* fire instead of ‘гореть’ *goret* burn (R—CG10) for **verbs**.

# Lexicon production: types of errors

- **Semantic circumlocutions errors**: using the phrase ‘которым поливать’ *kotorim polivat* with which you can water instead of the word ‘лейка’ *leika* water can (R—CG5) for **nouns**; using the phrase ‘дует свисток’ *duiet svistok* blows the whistle instead of the word ‘свистет’ *svistet* to whistle (R—CG22) for **verbs**.
- **Code-switching errors**: the use of Greek word ‘αχλάδι’ *ahladi* pear instead of the Russian word ‘груша’ *grusha* pear (R—CG23) for **nouns**; the use of Greek word ‘τσιμπάω’ *tsimprao* pinch instead of the Russian word ‘щипать’ *shipat* pinch (R—CG4) for **verbs**.
- **Unrelated errors**: the use of the word ‘мишка’ *mishka* bear instead of ‘кукла’ *kukla* doll (R—CG12) for **nouns**; the use of the word ‘видеть’ *videt* see instead of the word ‘щипать’ *shipat* pinch (R—CG6) for **verbs**.

# Case production

- ‘Кого ищет зебра?’ Kogo ishet zebra? Who is the zebra looking for?  
The use of ‘пантера’ *pantera* (nom) panther instead of ‘пантеру’ *panteru* (acc) panther (R—CG23) for **accusative case**;
- ‘Кому нравится тигр?’ Komu nravitsa tigr? Who does the tiger like?  
The use of ‘крокодил’ *krokodil* (nom) crocodile instead of ‘крокодилу’ *krokodilu* (dat) crocodile (R—CG17) for **dative case**;



# Production of verbal inflections

<b>Production: Verbal inflection</b>	<b>Target</b>	<b>Non-target</b>
1 <sup>st</sup> Productive verb class	43.11%	6.53%
Unproductive verb class	38.77%	11.59%
1SG present	40.22%	9.06%
2SG present	41.66%	9.06%

# Production of verbal inflections

Production: verbal inflection	non-target
Future tense	44%
Infinitive	24%
Imperative	4%
No production	14%
Past tense	4%
Error in person	4%
Grammatical word class substitution	6%

# Verbal inflections: type of errors

- The use of **future tense** 'буду играть' *budu igrat* I will play instead of present simple 'играю' *igrayu* I play (R—CG1);
- The use of **infinitive** 'читать' *chitat* to read instead of present simple 'читаю' *chitau* I read (R—CG5);
- The use of **imperative** 'закрывай' *zakrivai* close instead of present simple 'закрываешь' *zakrivaesh* you close (R—CG4);

# Verbal inflections: types of errors

- The use of **past tense** 'написал' *napisal* I wrote instead of present simple 'пишу' *pishu* I write (R—CG12);
- **Agreement error in person**: the use of 1<sup>st</sup> person instead of 2<sup>nd</sup> person singular 'ты закрою' *ti zakroiu* you I close instead of 'ты закрываешь' *ti zakrivaiesh* you close (R—CG9);
- **Grammatical word class substitution**: the use of a **noun** instead of a **verb** 'я письмо' *ia pismo* I am letter instead of 'я пишу' *pishu* I write (R—CG13).

# Grammatical constructions: types of errors

- **Lexical error:** the use of 'мышка спит' *mishka spit* the mouse is sleeping instead of 'кошка спит' *koshka spit* the cat is sleeping (R—CG13) for **the 2-element sentences**;
- **Lexical error:** the use of 'дядя солил суп' *djadja solit sup* the man is salting the soup instead of 'тетя солил суп' *tetja solit sup* the woman is salting the soup (R—CG5) for the **3-element sentences**.
- **Lexical error:** the use 'кошка входит' *koshka vhodit* the cat is coming in instead of 'кошка выходит' *koshka vihodit* the cat is going out (R—CG6) for **prefixing of verbs**;
- **Grammatical error:** the use of 'собака ела мясо' *sobaka ela mjaso* the dog was eating the meat instead of 'собака съела мясо' *sobaka s'jela mjaso* the dog has eaten up the meat (R—CG1) for **aspect**;

# Grammatical constructions: types of errors

- **Grammatical error:** the use of 'дядя читает' *djadja chitaet* the man is reading instead of 'дядя не читает' *djadja ne chitaet* the man is not reading (R—CG12) for **negation**;
- **Grammatical error:** the use of 'они едут на велосипеде' *oni edut na velosipede* they are riding bikes instead of 'только она едет на велосипеде' *tolko ona jedet na velosipede* only she is riding a bike (R—CG20) for **personal pronouns, nominative+number**;
- **Grammatical error:** the use of 'это мальчик которого обнимает девочка' *eto malchik kotorogo obnimaet devochka* this is the boy that the girl is hugging instead of 'это мальчик который обнимает девочку' *eto malchik kotoryi obnimaet devochku* this is the boy that is hugging the girl (R—CG6) for **relative clauses (nom/acc)**;
- **Grammatical error:** the use of 'девочка дает куклу мишке' *devochka daet kuklu mishke* the girl is giving the doll to the teddy bear instead of 'девочка дает мишку кукле' *ochka daet mishku kukle* the girl is giving a teddy bear to the doll (R—CG12) for **double object constructions**;

# Grammatical constructions: types of errors

- **Grammatical error:** the use of ‘собаку кусает кошка’ *sobaku kusaet koska* it is the dog that the cat is biting instead of ‘кошку кусает собака’ *koshku kusaet sobaka* it is the cat that the dog is biting (R—CG1) for **topicalisation**;
- **Grammatical error:** the use of ‘мальчик видит что девочка пьет воду’ *malchik vidit cto devochka piet vodu* the boy sees that the girl is drinking water instead of ‘девочка видит что мальчик пьет воду’ *devochka vidit chto malchik piet vodu* the girl sees that the boy is drinking water (R—CG2) for **subordination**;
- **Grammatical error:** the use of ‘девочка нарисована мальчиком’ *devochka narisovana malchikom* the girl is painted by the boy instead of ‘мальчик нарисован девочкой’ *malchik narisovan devochkoi* the boy is painted by the girl (R—CG8) for **passive voice**;

# Perception lexicon: type of errors

<b>Perception: Lexicon Errors</b>	<b>Noun</b>	<b>Verb</b>
phonological error	29.54%	28%
semantic error	59.09%	53%
unrelated error	11.36%	19%



# Perception lexicon: type of errors

- **Phonological errors**: the use of the word 'майка' *majka* undershirt instead of 'чайка' *chaika* seagull (R—CG9) for **nouns**; the use of the word 'щипать' *schipat* pinch instead of 'шептать' *sheptat* whisper (R—CG2) for **verbs**;
- **Semantic errors**: the use of the word 'шорты' *shorti* shorts instead of 'брюки' *bruki* pants (R—CG6) for **nouns**; the use of the word 'копать' *kopat* dig instead of 'сажать' *sazat* plant (R—CG10) for **verbs**;
- **Unrelated errors**: the use of the word 'птица' *ptica* bird instead of 'горка' *gorka* slide (R—CG13) for **nouns**; the use of the word 'разговаривать' *razgovarivat* talk instead of 'шить' *shit* sew (R—CG14) for **verbs**;

# Type of errors (1)

- **Code-switching error:** the use of the Russian word ‘скрипка’ *skripka* violin instead of the Greek word ‘βιολί’ *violi* violin (R—CG1) for **nouns**;
- **Phonological errors:** the use of the word ‘kalopardali’ instead of ‘καμηλοπαρδαλη’ *kamilopardali* giraffe (R—CG3) for **nouns**;
- **Semantic coordinate errors:** the use of the word ‘αεροπλάνο’ *aeroplano* airplane instead of ‘διαστημόπλο’ *diastimoplio* spacecraft (R—CG22) for **nouns**; the use of the word ‘βάζουν’ *vazun* put instead of ‘κατεβάζουν’ *katevazun* put down (R—CG20) for **verbs**;
- **Semantic superordinate errors:** the use of the word ‘ζώω’ *zoo* animal instead of ‘καμηλοπαρδαλη’ *kamilopardali* giraffe (R—CG20) for **nouns**;

# Type of errors (2)

- **Visual errors:** the use of the word 'δρόμος' *dromos* street instead of 'γέφυρα' *gefira* bridge (R—CG14) for **nouns**; the use of the word 'ζωγραφίζουν' *zografizun* draw instead of 'γράφουν' *grafun* write (R—CG8) for **verbs**;
- **Grammatical word class substitution errors:** the use of the word 'γυμναστήριο' *gimnastirio* gym instead of 'χωρεύουν' *horevun* dance (R—CG15) for **verbs**;
- **Semantic circumlocution errors:** the use of the phrase 'αγγίζει με τη μύτι του τη μύτι της γάτας' *angizi me ti miti tu ti miti tis gatas* he touches with his nose the nose of the cat instead of the word 'χαιδεύει' *haidevi* to pet (R—CG14).
- **Semantic associative errors:** the use of the word μάτια *matia* eyes instead of the word φρύδια *fridia* eyebrows (R—CG20) for nouns;

# Case production

- For **case production** task bilingual children had to **answer questions** and **produce accusative and dative case in singular number**.
- The analysis of the **case production** task showed that bilingual children had at chance performance: **50% target and 50% non-target**.
- **The target production was**: accusative case (61%) and dative case (39%), the **non-target production** was nominative case 100%.

# Production of verbal inflections

- Bilingual children had a **high rate of target production** of **verbal inflection** (81.88%), they did not have difference in production between **1<sup>st</sup> and 2<sup>nd</sup> singular forms** of verbal inflection, but they had slightly **better production for 1<sup>st</sup> productive verb class in comparison to unproductive**
- The **qualitative analysis** of non-target production showed that bilingual children mostly used **future tense, infinitive or no production** instead of **1<sup>st</sup> and 2<sup>nd</sup> person singular present tense forms**

# Cyprus: Interviews: excerpts

- *На каком языке вы говорите больше всего?*
- *...да, русский больше всего, так как я не работаю... и дети...и у меня и соседи все русские зыки...*
- *Which language do you use most of all?*
- *Yes, I use Russian most of all, as I do not work... and children... and my neighbours are all Russian...*

# Cyprus: Interviews: excerpts

- *Смешиваете ли вы два языка?*
- *...мое мнение, этого не стоит делать, если говорить на одном языке так на одном ...вот у меня подруга она с сыном, она запретила вообще всем общаться на русском языке, так как в школе сказали у него проблема с ελληνικά. Я говорю ей, что ты делаешь, сын не говорит на русском языке, а сейчас она стала смешивать языки и это не надо делать, но это мое мнение...*
- *Do you code-switch?*
- *In my opinion you should not do it, if you speak one language just speak one language... I have a friend, she has a son and she forbids everybody to speak Russian because teachers at school told her that her son has problem with Greek. I tell her, what are you doing, your son does not speak Russian at all, and now she has started mixing two languages and it shouldn't be done*

# Cyprus: Interviews: excerpts

- *Смешиваете ли вы два языка?*
- *иногда потому что я не могу правильно говорить на греческом, иногда что-то шучу, но сын нервничает и говорит, нет не надо, ты неправильно говоришь...*
- *Do you code-switch?*
- *Sometimes because I cannot speak Greek correctly, sometimes I try to joke, but I my son doesn't like it and tells me that I should not do it as I do not speak properly...*



# Cyprus: Interviews: excerpts

- *Хорошо на каком языке вы разговариваете со своими детьми и почему?*
- *на русском потому что я русская, для меня очень важно, когда сын говорил на греческом я порой спрашивала что сказали, мне переводили только на русском*
- *Well, which language do you use to speak with your children?*
- *Russian because I am Russian, it is important for me, when my son speaks Greek I often ask to translate in Russian*

# Cyprus: Interviews: excerpts

- *Когда вы используете русский на Кипре?*
- *...семья и мои знакомые, у меня во основном русские подруги, у меня нет подруг киприоток, вот у дочери больше друзей киприотов, она ближе к киприотам ... в школе очень много русских детей, они даже отдельно на лавочке сидят, когда кушают, моя дочь сидит с киприотами...*
- *When do you use Russian in Cyprus?*
- *...with my family and my friends, most of my friends are Russian, I do not have Cypriot friends, but my daughter has more Cypriot friends, she is closer to Cypriots... there are a lot of Russian children at school, they even sit separately during the break when they eat their lunch, my daughter sits with Cypriots...*