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)

- **2nd grade:** 11 children (mean age: 8;8, range 7;7-9;8, SD 0.7), 5 female, 6 male
- **3rd grade:** 9 children (mean age: 9;9, range 8;11-12.5, SD 1.4), 5 female, 4 male
- **4th grade:** 8 children (mean age: 10;8, range 9;4-12, SD 0.8), 4 female, 4 male
- **5th 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 Tsimpi, 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)

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

- Production Lexicon: Nouns
- Production Lexicon: Verbs
- Production: Case
- Production: Verbal inflection
- Perception lexicon: Nouns
- Perception lexicon: Verbs

Years:
- 3-YEAR-OLD
- 4-YEAR-OLD
- 5-YEAR-OLD
- 6-YEAR-OLD
- 7-YEAR-OLD
- 8-YEAR-OLD
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

- Phonological
- Semantic
- Unrelated
- Omission
- Semantic coordinate
- Semantic superordinate
- Semantic associative
- Visual errors
- Grammatical word class...
- Semantic circumlocutions
- Code-switching

Graph showing the percentage of errors for nouns vs. verbs in each category.
Perception: grammatical constructions

- Target vs. non-target

- Grammatical errors vs. lexical errors
Perception: grammatical constructions type of errors
Perception lexicon: nouns vs. verbs

- Nouns target: 80%
- Nouns non-target: 10%
- Verbs target: 20%
- Verbs non-target: 50%
Perception lexicon: nouns vs. verbs type of errors

- Phonological error
- Semantic error
- Unrelated error

- Noun
- Verb
DVIQ test: Results

![Bar chart showing test results for different categories: Production lexicon (60%), Production morphology/syntax (50%), Comprehension metalinguistic concepts (70%), Comprehension morphology/syntax (80%), and Sentence repetition (90%).]
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

![Graph showing the comparison between nouns and verbs for target and non-target words. The graph indicates that verbs have a higher percentage for both target and non-target words compared to nouns.](image-url)
Noun vs verbs: types of errors

- Phonological
- Omission
- Semantic coordinate
- Semantic superordinate
- Visual errors
- Grammatical word...
- Semantic circumlocution
- Code-switching
- Semantic associative

The graph shows the percentage distribution of errors for nouns and verbs. The x-axis represents different types of errors, and the y-axis represents the percentage of errors. The colors blue and orange represent nouns and verbs, respectively.
DVIQ vs Russian proficiency test

![Bar chart comparing DVIQ scores and Russian proficiency test scores. The DVIQ scores bar is significantly higher than the Russian proficiency test scores.]
<table>
<thead>
<tr>
<th>Measures</th>
<th>CG</th>
<th></th>
<th>Russian</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>COAT nouns/ROAT nouns</td>
<td>19.16</td>
<td>7.14</td>
<td>18.34</td>
<td>7.65</td>
</tr>
<tr>
<td>COAT verbs/ROAT verbs</td>
<td>21.64</td>
<td>5.86</td>
<td>21.34</td>
<td>8.64</td>
</tr>
<tr>
<td>WFT Greek/WFT Russian</td>
<td>22.69</td>
<td>9.71</td>
<td>22.39</td>
<td>10.20</td>
</tr>
<tr>
<td>Fluency test Greek/Russian</td>
<td>14.75</td>
<td>3.62</td>
<td>6.51</td>
<td>3.49</td>
</tr>
<tr>
<td>Digit span test Greek/Russian</td>
<td>8.53</td>
<td>2.50</td>
<td>9.00</td>
<td>2.69</td>
</tr>
</tbody>
</table>
COAT vs. ROAT (nouns/verbs), WFT
Russian vs Greek fluency test mean

![Graph showing the comparison between Russian and Greek fluency test means. The x-axis represents different types of word lists: animal, supermarket, list of words 'p', and list of words 't'. The y-axis represents the mean score. The graph indicates that Greek fluency generally surpasses Russian fluency in these tests.](image-url)
Russian/Greek fluency test mean: semantic vs phonemic

- **Greek:**
  - Semantic fluency mean: [Value]
  - Phonemic fluency mean: [Value]

- **Russian:**
  - Semantic fluency mean: [Value]
  - Phonemic fluency mean: [Value]
Russian vs Greek digit span test

100,00%  90,00%  80,00%  70,00%  60,00%  50,00%  40,00%  30,00%  20,00%  10,00%

Greek digit span  Russian digit span
Digit span test: backward/ forward

- Greek digit span forward: 40,00%
- Russian digit span forward: 60,00%
- Greek digit span backward: 20,00%
- Russian digit span backward: 10,00%
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 (0.031); Russian fluency test (0.033);

- ROAT nouns (0.044); WFT Russian test (0.084)

- Russian proficiency test overall scores (0.007): noun production (0.050); verb production (0.010); case production (0.006); noun perception (0.009), verb perception (0.009);

- Greek DVIQ test: lexicon production (0.055); morphosyntax comprehension (0.007);
• 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** (2nd semester 2015-2016 school year):
  - **2nd grade**: mean 50.9 (range: 22-85, SD 19.21)
  - **3rd grade**: mean 56.8 (range: 41-70, SD 9.65)
  - **4th grade**: mean 65.87 (range: 46-106, SD 19.34)
  - **5th grade**: mean 77.12 (range: 36-128, SD 41.41)

• Overall, their reading speed is lower than L1 Russian monolingual norms
Reading speed (WPM)

2nd grade: 50 WPM
3rd grade: 60 WPM
4th grade: 70 WPM
5th grade: 80 WPM
Dictations: Orthography: Error analysis (1)

- **2nd grade**: 4 dictations analysed (throughout the year): overall mean errors: 28.72 (range 13-50, SD 12.83)

- **1st dictation** (15 words, 4 sentences): mean errors **10.81** (range 4-20, SD 4.55)
- **2nd dictation** (15 words, 5 sentences): mean errors **7.81** (range 2-14, SD 3.45)
- **3rd dictation** (16 words, 4 sentences): mean errors **6.18** (range 2-11, SD 3.5)
- **4th dictation** (19 words, 5 sentences): mean errors **3.9** (range 0-9, SD 2.87)
Диктант
Алёна испытала жуткую боль.
Вдруг в кустах замерли листья.
Малышка испугалась.
А это был еж.
Type of errors

- Substitution errors: 90.00%
- Omission errors: 10.00%
- Insertion errors: 0.00%
- Use of English instead of Russian: 0.00%
Substitution errors

- Substitution errors bar chart showing the percentage of errors for different substitutions.
- The x-axis represents various substitutions, while the y-axis shows the percentage of errors.
- The highest percentage of errors is for the substitution of 'о' to 'о', with a 30.00% error rate.
Dictations: Orthography: Error analysis (2)

- **3rd grade**: 3 dictations analysed (throughout the year): overall mean errors: 34.57 (range 23-52, SD 10.14)

- **1st dictation** (26 words, 6 sentences): mean errors **16.28** (range 9-25, SD 10.14)
- **2nd dictation** (27 words, 5 sentences): mean errors **11.14** (range 7-17, SD 3.62)
- **3rd dictation** (34 words, 6 sentences): mean errors **8.33** (range 3-15, SD 5.05)
Оля часто болела. Её школьная подруга Лена росла ловкой и сильной.
Девочки задумались. Почему так?
Каждый день Лена начинает с зарядки.
Зимой катается на лыжах и коньках.
Лена решила помочь Оле стать сильной.
Dictations: Orthography: Error analysis (3)

- **4th grade**: 2 dictations analysed (throughout the year): overall mean errors: 21.12 (range 6-36, SD 10.5)

- **1st dictation** (33 words, 8 sentences): **mean errors 15.5** (range 5-27, SD 7.42)
- **2nd dictation** (48 words, 6 sentences): **mean errors 5.62** (range 0-14, SD 4.4)
Диктант

Городское утро. Солнце заливает яркий светом широкий луч. Листья цветы. Птахи сохраняют ещё нужную свежесть. Станет удивительная тишина. Но вот пробежал лёгкий ветерок. Верхушки кустов завывались. Здраво жали капельки росы. С реки доносились голоса.
Dictations: Orthography: Error analysis (4)

- **5th grade**: 2 dictations analysed (throughout the year): overall mean errors: overall mean errors: 29.8 (range 1-69, SD 20.95)

- **1st dictation** (59 words, 9 sentences): **mean errors 19.5** (range 1-38, SD 11.86)
- **2nd dictation** (93 words, 12 sentences): **mean errors 12.55** (range 0-31, SD 13.81)
Жил у нас в доме один маленький чудак.

Жил у нас в доме озорной толстяк.

Жил у нас в доме озорной толстяк.

Иванчик любил учиться так, чтобы ему было хорошо и легко и мягко.

Погода на подушке угождает, но подушку забираете. А однажды вот что: Я сидел в комнате, и поставила на печку. Чтоб оно лучше поднялось, сверху слюй поил и платок прикрыл.

Травил два часа. Нача пошла постепенно. 

А в надумке, свернувши пакозного, как на перине, Иванчик смотрит. Вдруг туда пришел и сам весь изказал. Так не без пущена и осталися. И Иванчик воротил.
Димант

Вечер не верен

люди Валют про коняет и промыше рыба хорошо

Закранил и рыбина в про мояню, шумит, ловит руку

воду так чорту так рыба не любит. А шумит некий

рыбина, зацепит её как таина что при

я рот Вкусно
Диманом.
Выписку мы не поладили.
Вечером на своё место.
Утром сразу искал свой
какао на урон. Ему было аммио.
Dictations: Number of errors/number of words ratio

Overall
1st dictation
2nd dictation
3rd dictation
4th dictation

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), 1st dictation errors (.025), 2nd dictation errors (.009), overall error/word ratio dictation errors (.000), 1st dictation error/word ratio (.000), 2nd dictation error/word ratio (.000)

• **School grade** is correlated with:
  • reading speed in Russian (.005), age (.000), 1st dictation errors (.022), 4th dictation errors (.000), overall error/word ratio (.000), 1st dictation error/word ratio (.000), 2nd dictation error/word ratio (.000), 3rd dictation error/word ratio (.086), 4th dictation error/word ratio (.000)

• **Gender** is correlated with:
  • 4th dictation errors (.068), overall error/word ratio (.091), 1st dictation error/word ratio (.018), 3rd dictation error/word ratio (.012), 4th dictation error/word ratio (.065)

• **Age** is correlated with:
  • reading speed in Russian (.003), school grade (.000), overall error/word ratio (.002), 1st dictation error/word ratio (.001), 2nd 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 2nd to the 5th 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 ъ** (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, 1st and 2nd 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
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 ‘половат’ *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’ *tsimpao* 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

<table>
<thead>
<tr>
<th>Production:</th>
<th>Target</th>
<th>Non-target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal inflection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Productive verb class</td>
<td>43.11%</td>
<td>6.53%</td>
</tr>
<tr>
<td>Unproductive verb class</td>
<td>38.77%</td>
<td>11.59%</td>
</tr>
<tr>
<td>1SG present</td>
<td>40.22%</td>
<td>9.06%</td>
</tr>
<tr>
<td>2SG present</td>
<td>41.66%</td>
<td>9.06%</td>
</tr>
</tbody>
</table>
# Production of verbal inflections

<table>
<thead>
<tr>
<th>Production: verbal inflection</th>
<th>non-target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future tense</td>
<td>44%</td>
</tr>
<tr>
<td>Infinitive</td>
<td>24%</td>
</tr>
<tr>
<td>Imperative</td>
<td>4%</td>
</tr>
<tr>
<td>No production</td>
<td>14%</td>
</tr>
<tr>
<td>Past tense</td>
<td>4%</td>
</tr>
<tr>
<td>Error in person</td>
<td>4%</td>
</tr>
<tr>
<td>Grammatical word class substitution</td>
<td>6%</td>
</tr>
</tbody>
</table>
Verbal inflections: type of errors

- The use of future tense ‘буду играть’ budu igrat I will play instead of present simple ‘играю’ igrai 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’ zakrivaiesh 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\textsuperscript{st} person instead of 2\textsuperscript{nd} person singular ‘ты закрою’ *ti zakroiu* you I close instead of ‘ты закрываешь’ *ti zakrivaiesch* 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 солит суп’ *djadja solit sup* the man is salting the soup instead of ‘тетя солит 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 сьела 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

<table>
<thead>
<tr>
<th>Perception: Lexicon Errors</th>
<th>Noun</th>
<th>Verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>phonological error</td>
<td>29.54%</td>
<td>28%</td>
</tr>
<tr>
<td>semantic error</td>
<td>59.09%</td>
<td>53%</td>
</tr>
<tr>
<td>unrelated error</td>
<td>11.36%</td>
<td>19%</td>
</tr>
</tbody>
</table>
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’ *razgовариват* 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’ *violí* violin (R—CG1) for **nouns**;

- **Phonological errors:** the use of the word ‘kalopardali’ instead of ‘καμηλοπαρδαλή’ *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 ‘καμηλοπαρδαλή’ *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 ‘χωρέυον’ horevun dance (R—CG15) for verbs;

- **Semantic circumlocution errors**: the use of the phrase ‘αγγίζει με τη μύτη του τη μύτη 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 **1st and 2nd singular forms** of verbal inflection, but they had slightly **better production for 1st 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 **1st and 2nd 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 ззыки...

• 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 nor 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

• 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...