Effects of parental input on heritage language development:
A comparison across linguistic categories

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Workshop on Heritage Language Acquisition
Input effects in bilingual language acquisition

• **crucial importance of input** for monolingual and bilingual language acquisition underlined in different theoretical approaches (cf., among others, Guelzow & Gagarina 2007, Tomasello 2003, 2006)

• Input defined as linguistic material offered to the child by his/her environment (cf. Szagun et al. 2006)

  - cf. different sources of input: **mother**, father, grandparents, **siblings**, **peers**, **television** (de Houwer 2000)

• Parental input patterns, degree and types of language mixing as well as relative/absolute amount of exposure to (minority) language significantly affect children’s language use and proficiency in minority language (cf. Pearson 2007, Klassert & Gagarina 2010, Paradis 2011 and many others)

  - but: extent of knowledge of the heritage language is related to a complex interaction of many factors
Input effects in bilingual language acquisition

• Most studies deal mainly with **quantitative aspects** of input in the minority language (cf. Paradis & Grüter 2014, De Houwer & Bornstein 2003, de Houwer 2009, 2011, 2014 and Unsworth’s research)

  > Reduced quantity of input in minority language impact an individual's processing and representation of that language (cf. Paradis 2011)

• **Qualitative aspects** clearly underresearched

  > potential impact of parental qualitative input on the children’s output, especially with regard to cross-linguistic influence apparent in the children’s output (Paradis & Navarro 2003, De Houwer 1997)

  > “HS [heritage speakers] may be subject to language input from the first generation which has already undergone changes under the influence of the (L2) majority language.” (Kupisch 2013: 207)

  > Cf. **missing-input competence divergence hypothesis** (Pires & Rothman 2009)
Input effects in bilingual language acquisition

• “(...) the relationship between bilingual input and bilingual outcomes is not one-to-one, it is neither linear, nor does it generalize evenly across linguistic domains and constructions, or across populations of bilinguals in diverse socio-linguistic contexts. (...) Bilingual development is both sensitive to and resilient against variation in input and experience.” (Paradis & Grüter 2014: 11, emphasis ours)

• choice of outcome measures matters when looking at the effects of input on language development (cf. Thordardottir 2014 on differences among bilinguals in morphosyntactic ability as a function of variation in home language input)
Research question

• **RQ:** Is parental input variability regarding the heritage language (HL) meaningfully related to HL outcomes in children?

➤ Are there differences in the extent to which parental input variation affects HL development of children with regard to different linguistic domains?

➤ Which innovations in children’s HL can be traced back to deviant parental input, which can be characterized as results of internal processes in the child’s speech (e.g. individual attrition and/or incomplete acquisition or individual transfer from majority language)?
Data

- Research project **Russian and Polish heritage languages as a resource in the German classroom** (Joint Project: University of Greifswald & University of Leipzig)
- Funded by German Ministry of Education and Research (BMBF), 2013-2016
- Greifswald Project focuses on
  - testing bilingual language development in heritage language and German, 49 informants, 12-14 year old teenagers (6th/7th grade), 26 HS of Russian, 23 HS of Polish
  - different proficiencies (oral proficiency, reading and listening comprehension, writing skills, pronunciation, grammatical and lexical knowledge, style shifting abilities; focus on production)
  - evaluation of the input received by informants in the heritage language and German in each of the selected families by including parents (esp. mothers) in testing
## Data

<table>
<thead>
<tr>
<th>Russian Heritage Speakers</th>
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<tbody>
<tr>
<td>Number</td>
<td>26</td>
</tr>
<tr>
<td>Sex: male : female</td>
<td>14 : 12</td>
</tr>
<tr>
<td>Average age at testing</td>
<td>13,6</td>
</tr>
<tr>
<td>Average AO German</td>
<td>1,65 (SD 1,32)</td>
</tr>
<tr>
<td>Born in Germany</td>
<td>13</td>
</tr>
<tr>
<td>communication between parents only in Russian</td>
<td>12</td>
</tr>
<tr>
<td>mother &gt; child only Russian</td>
<td>9</td>
</tr>
<tr>
<td>father &gt; child only in Russian</td>
<td>10</td>
</tr>
<tr>
<td>child &gt; mother only in Russian</td>
<td>4</td>
</tr>
<tr>
<td>child &gt; father only in Russian</td>
<td>6</td>
</tr>
<tr>
<td>schooling in HL</td>
<td>15</td>
</tr>
</tbody>
</table>
Results I

Input and acquisition of phonetic features:

Voice Onset Time (VOT)

Tatjana Kurbangulova
Rus+Ger: *phonological* voiceless stop consonants /p/, /t/, /k/ vs. voiced stop consonants /b/, /d/, /g/  
*different phonetic* basis for the voicing distinction

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**Voice Onset Time (VOT)**

Reetz 2003, 143
Russian

German

(Truly) voiced

/unaspirated voiceless

/aspirated voiceless

\(/b/, /d/, /g/\)

\(/p/, /t/, /k/\)

\(/b/, /d/, /g/\)

\(/p/, /t/, /k/\)

POS VOT

NEG VOT

release

40ms
Test VOT

| Informants Σ | 42 |
| Families     | 21 |
| - heritage speakers | 13f, 8m |
| - parents    | 21f |

Minimal pairs
- par - bar
- tam - dam
- kum - gum

<table>
<thead>
<tr>
<th>Stimuli</th>
<th>62</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokens</td>
<td>2593</td>
</tr>
</tbody>
</table>

sound recordings were analyzed using Praat (Boersma/Weenink 2015)
Results: VOT measures /k/

- **Germ.monol**
- **Rus.monol**

The graph shows the VOT in ms for different subjects labeled with codes like RU HH_02, RU L_06, etc. The data is divided into four sections labeled I, II, III, and IV.

- **P**
- **HS**
Results II

Input and acquisition of inflectional morphology

Bernhard Brehmer
Test

- **Cloze-Test**: 74 gaps, focus on inflectional morphology of nouns (30 gaps) and verbs (32 gaps)

Жили-были Маша и медведь. Маша – ____________ (маленький) девочка. Она __________ (жить) с родителями в _____________ (деревня).

- performed orally by the children (n=26), parents mostly preferred written form of testing

- Score: correctly filled gaps (orthographical errors neglected)
Input and the acquisition of null subjects

Bernhard Brehmer
Test: Map Task
Results III

Ratio of null vs. pronominal subjects (%)
Results IV

Input and vocabulary acquisition

Bernhard Brehmer
Test I: Semantic mapping

- Adapted from a German standardized version (CFT-20R, Weiß 2007)
  - given item, informants had to select another item from a list of 5 that semantically matches the target item best (mostly synonyms)
  - n= 30 items, mostly nouns, but also three verbs and one adjective
  - ordering according to frequency of target item
  - score: number of correctly matched items
  - Data from 25 HS of Russian
Results IV: Semantic Mapping

Correctness score (%)

Children vs. #REF!
Test II: Vocabulary Translation Task

50 items to be translated from HL to German, 50 items to be translated from German to HL

- selection of items according to word frequency bands and semantic fields
- 1/3 high-frequent items, 2/3 low-frequent items, taken from different semantic fields
- items representing all word classes
- self-paced administration of task
- score: relative number of correctly translated items
- N= 26 HS of Russian
Test III: Category Fluency Task

• six different categories tested (in different sessions)
  – noun categories: fruits, vegetables
  – adjectival categories: colours, human properties
  – verbal categories: verbs of movement and household activities
• Time span: 60 seconds, 1-2 items given as an illustration
• Score: number of semantically correct items mentioned by the informants
• Here: only two categories analyzed: vegetables and colours
• N= 25 HS of Russian
Results IV: Category Fluency Tasks

Number of mentioned items

Children (blue) vs. Parents (red)
Conclusions

• For some of the investigated domains parental input clearly differs from the (proposed) baseline of monolingual speakers of Russian (esp. VOT and ratio of null subject use)

➢ 2nd generation speakers are already exposed to deviant input

• Data show that parental input (inter alia) seems to play a crucial role for HL development for most (although not all) of our children

➢ children’s outcomes mirror parental input variability or at least developmental tendencies extant in the data taken from the parents

• However, not all investigated domains are reliant on parental input quality to the same extent
Conclusions

• **Phonetics/VOT:** half of the tested children fall into the range of VOT measures recorded for the parents or even approximate the norms reported for Russian monolinguals to a higher degree than the parents themselves
  - holds at least for voiceless stops series
  - VOT highly sensitive to input variability

• **Null subjects:** on average the second domain where children’s outcomes reflect parental input quality
  - However, children use null subjects to a significant lesser degree than their parents ($\chi^2=37.701$, $p<0.001$)

• **Inflectional morphology:** parents exhibit ceiling effect in the task, i.e. input quality seems to approximate baseline
Conclusions

- Clear difference between parents and children: great degree of variability in children contrasts to more or less stable results of parents in the morphology task.

  - **Vocabulary**: task-dependent results

- Translation task: task where most children approximate parents’ scores

- Category fluency task: overall similar results for children and parents, although children score on a much lower level than parents

- Semantic mapping task: huge differences between results of parents and their children
What remains to be done

- Clustering of informants according to their proximity to parental input patterns across all investigated linguistic domains
- Include (reported) data on quantity of input in HL as well as other factors that could account for individual differences with regard to (mis)match between parental input and children’s outcomes
  - Exposure to schooling in HL („Saturday schools“)
  - Attitudes towards HL
Thank you for your attention!!!!

Hoping to receive some (qualitative) input from you......