Seeing stress? Temporal reduction in Russian sign language mouthing

Anastasia Bauer (University of Cologne, Germany) anastasia.bauer@uni-koeln.de

Reduced mouthing

- Mouthing is the most frequent mouth action type in RSL (Bauer 2019).
- Mouthing usually occurs temporarily reduced.
- Mouthing is reduced when its parts are invisible, as in the DGS example wi(cht)ig 'important' or in the RSL example Novosibirsk (1) (Boyese Braem 2001: 104; Bauer 2019: 22).

• Previous studies suggested that the stressed part of the spoken language item is the most important one for the mouthing; all mouthings in NGT contain at least the stressed syllable, which indicates that signers have access to the rhythmic structure of spoken words (Bank, Crasborn & van Hout, 2011:264; Bank 2014: 40-42).
- It is possible, because a stressed syllable is longer and more strongly articulated, with less vowel reduction than an unstressed syllable (Grice & Baumann 2006).

We test this view with the RSL data and ask:

- How does temporal reduction of RSL mouthing occur?
- Is the stressed part of the spoken Russian word always mouthing in RSL?

Why RSL?

- RSL - a sign language surrounded by a spoken language with a different word stress pattern as hitherto analyzed.
- Spoken Russian is a free-stress language, i.e. the stress can fall on any syllable in a word: cf. printer ‘printer’, professor ‘professor’, inženér ‘engineer’.

The stress is movable in the sense that different morphological forms of a lexeme may have different syllable structures: stol ‘table-NOM’, stolá ‘table-GEN’.

Russian Sign Language Corpus

The online corpus of RSL (http://rsl.nstu.ru, Burkova 2012-2015) was made during the project “Corpus-Based Research on Morphosyntax and Vocabulary of the Russian Sign Language” funded by Russian Foundation for Basic Research.

- over 180 texts filmed from 59 RSL signers – men and women (18 to 63 years) with varying degrees of deafness: deaf, hard-of-hearing and CODA.
- Novosibirsk & Moscow.
- spontaneous speech (narratives and dialogues), texts on the basis of stimulus materials (cartoons retelling, picture based storytelling) & some elicitation data.

Methods

- 30 randomly selected RSL signs with the three-syllable citation form in spoken Russian
- ca.1400 tokens

<table>
<thead>
<tr>
<th>RSL sign</th>
<th>Russian citation form</th>
<th>full mouthing</th>
<th>1st syllable mouthed</th>
<th>2-2 syllables mouthed</th>
<th>other syllables mouthed</th>
<th>Stressed syllables</th>
</tr>
</thead>
<tbody>
<tr>
<td>stol</td>
<td>stol ‘table-NOM’</td>
<td>93%</td>
<td>79%</td>
<td>65%</td>
<td>6%</td>
<td>93%</td>
</tr>
<tr>
<td>stolá</td>
<td>stolá ‘table-GEN’</td>
<td>93%</td>
<td>79%</td>
<td>65%</td>
<td>6%</td>
<td>93%</td>
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<td>...</td>
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</tr>
</tbody>
</table>

*Stressed syllables in spoken Russian are in red and underlined.

Total

- 65%
- 18%
- 4%

Results

- The most common type of temporal reduction is pronouncing only the first syllable (65% of all cases) independent of the word stress.
- Two first syllables are articulated in 19%.
- Mouthing is fully pronounced in 4%.
- Stressed syllables are not consistently mouthing.
- Emphasis lies on the first syllable.
- Signers have no access to the rhythmic structure of Russian spoken words, but appear to be influenced by the written modality.

References

Bank, Richard, Crasborn, Onno and Roelant van Hout. 2011. ‘Variation in mouth actions with manual signs in Sign Language of the Netherlands (NGT).’ Sign Language & Linguistics 14:2
Boyese Braem, Penny. 2001. Functions of the mouthings in the signing of Deaf early and late learners of Swiss German Sign Language. Penny Boyese-Braem & Rachel Sutton-Spences (Eds.), The hands are the head of the mouth: The mouth as articulator in sign languages, 99–132. Hamburg: Signum.