Phonetic factors influencing /l/-rhoticisation in Greek

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1. Background

• Rhotics and laterals tend to alternate cross-linguistically [1,2].
• Alteration of the two sounds, i.e. rhotisation and lambdacisation, occurs preferentially in perceptually weak positions – codas, intervocalic position, unstressed syllables.
• Rhotisation seems to be much more frequent than lambdacisation.
• All Greek dialects show /l/-rhotisation in word-initial codas (§3): «οδήγιος» - «οδερμός» - «ηλία» - «ηλόος», etc.

2. Method

a) Speaker and listeners

• young male speaker of Standard Thessaloniki Greek, highly educated
• 21 native Greek listeners from Greece and Cyprus (age 18-37)

b) Stimuli

Non-sense words with VLV or VCLV structure containing
- /l/ or /r/;
- /l/ or /r/ in a symmetrical vowel context;
- /l/ or /r/ in intervocalic position;
- stress on the first or last syllable.

All words were presented in Greek script in a word list read three times.

Table 1: non-sense words used in the experiment

<table>
<thead>
<tr>
<th>VLV</th>
<th>VCLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>/vl/</td>
<td>/v/l</td>
</tr>
<tr>
<td>/rl/</td>
<td>/r/l</td>
</tr>
<tr>
<td>/l/</td>
<td>/r/</td>
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</tbody>
</table>

3. Results

a) Rhotisation

Realisation as either tap or approximant (only in intervocalic codas). See fig. 2.

Fig. 2: Spectrograms of the nonsense word «arká» realised with a) a tap, b) an approximant

• Approximants were more likely to appear in /l/-context (58%), than in /l/ and /l/-context (28% each).
• Duration: intervocalic tap: 28.5 ms (± 10.2 ms), coda tap 21.9 ms (± 6.7 ms), coda approximant 83.5 ms (± 11.5 ms). Taps in the intervocalic position tended to be longer than in the codas, but this difference only reached marginal significance for the context vowels /l/ and /l/ (Student's t-test, p < 0.05 and p < 0.1, respectively).

b) Lambdacisation

Misperception of /l/ as /l/ occurred predominantly with the approximant rhotics. See fig. 6.

4. Discussion

• Duration seems to be the prime factor in /l/-rhoticisation.
• In spontaneous speech, laterals may be short enough to undergo rhoticisation.
• The smaller percentages of /l/-lambdacisation in the data are in line with their greater cross-linguistic rarity compared to rhoticisation of laterals.
• Lambdacisation seems to depend not only on duration, but also on gestural reorganisation, inducing lengthening of the segment: from a tap (+ aravahlaktov referring to an approximant realisation.
• Variation in rhotic realisation (approximants, taps, zero) has been reported for dialects with lambdacisation such as Andalusian Spanish [6].

5. References