L1 intonational categories as "perceptual attractors" during L2 imitation
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To cite this version:
Caterina Petrone, Leonardo Lancia, Cristel Portes. L1 intonational categories as "perceptual attractors" during L2 imitation. 7th International Conference on Speech Motor Control, 2017, Groeningen, Netherlands. halshs-01793255

HAL Id: halshs-01793255
https://halshs.archives-ouvertes.fr/halshs-01793255
Submitted on 12 Apr 2019

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INTRODUCTION

○ In L2 learning, native (L1) phonological representations act as “perceptual attractors” to which similar non-native sounds are assimilated [1, 2];

○ Competition with the inventory of the language/dialect of origin modulates segmental imitation by selective processes [3]

○ Phonological properties of a speech sound replace its phonetic properties with the passing of time [4], e.g., by matching to exemplars or by rehearsal of articulatory programs [1, 5].

INTONATION?

○ Speakers reproduce the phonological form of an utterance, not its phonetic details [6];

BUT: When imitating non-native dialects, the f0 contour is partly modified to approximate the target dialect [7].

<table>
<thead>
<tr>
<th>Questions (Q) [8, 9]</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Northern Standard)</td>
</tr>
<tr>
<td>German L* H- H% Steep rise right after the f0 valley</td>
</tr>
<tr>
<td>Lecce Italian L* L- H% Shallow rise, late rise onset</td>
</tr>
<tr>
<td>Neapolitan L*+H L-L% 10 Rise-fall</td>
</tr>
</tbody>
</table>

Hypotheses

H1: Lecce speakers will be less accurate in imitation since they perceive German contours as variants of their native dialect contours

H2: Less accurate reproduction when imitation is delayed/rehearsal is reduced because of a delay of detailed f0 memories.

CORPUS & METHODS

○ Shadowing:

<table>
<thead>
<tr>
<th>Baseline Task</th>
<th>Main Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pende've la nave? Did she travel by ship?</td>
<td>Er rudi: 'ne Blume? Does he paint a flower?</td>
</tr>
<tr>
<td>Guardavo il mare? Did she look at the sea?</td>
<td>Er trinkt 'ne Limon. Does he drink a lemonade?</td>
</tr>
<tr>
<td>Stringeva la mano? Did she shake hands?</td>
<td>Sie ist 'ne Mütze? Does she eat a carrot?</td>
</tr>
<tr>
<td>Splugava la neve? Did she shovel snow?</td>
<td>Er baut 'ne Mühle? Does he build a mill?</td>
</tr>
<tr>
<td>Brecava il legno? Did she burn wood?</td>
<td>Er mag Salami? Does he like pepperoni?</td>
</tr>
<tr>
<td>Chamava la moglie? Did she call the wife?</td>
<td>Er spielt Violin? Does he play violin?</td>
</tr>
<tr>
<td>Compriava la lama? Did she buy the sword?</td>
<td>Sie hatten 'ne Waage? Do they have a balance?</td>
</tr>
<tr>
<td>Cambiava lavoro? Did she get a new job?</td>
<td>Er sucht Maroni! Does he look for chestnuts?</td>
</tr>
</tbody>
</table>

○ Imitators with no knowledge of German

○ “Memory” conditions: Speaking onset at the end of Q (Immediate), after a silent pause of 4 s. (Delayed) or an answer of 4 s. to Q (Filled).

○ No memory effects:

- no rehearsal for continuous f0?
- too simple task?

○ Increase cognitive load by increasing linguistic (i.e. syllabic) complexity (in progress)

RESULTS

Language interference:
- Neapolitan: Imitation of German Qs not mediated by grammar 
- Leccese: Phonological ambiguity 
- Speakers rely on phonetic implementation rules of their own variety.

○ No effects of memory

DISCUSSION

○ Similarity to the segmental level, intonation is anchored by native prosodic representations.

○ Functional mixed models: New paradigm for exploring intonation.

CONCLUSION

○ Evaluate effects of experimental factors on the f0 contours within the target words:

1. Discrete Wavelet Transform (DWT) to obtain a set of wavelet coefficients;
2. Markov chain Monte Carlo simulation to get the posterior samples for quantities in the wavelet space version of the functional mixed model;
3. Inverse DWT to convert these quantities back to data space.

○ Fixed factors: Variety, language, memory, repetition;

○ Full random structure.

• Capture changes of f0 in time without assumptions about f0 shape.

References

3. Lecce It. * L* L- H% Shallow rise, late rise onset
4. Chia ma va la mo glie?
5. L*+H L-L% 10 Rise-fall
6.战略布局。