Question: Can corpus data reveal gestural factors behind Turkish onset cluster repair?

Vowel intrusion vs. epenthesis
- Vowel insertion is typically assumed to be phonological epenthesis.
- The perception of an inserted vowel can also result from gestural timing – this is vowel intrusion (Hall 2003).

1. a. English sport → more overlap → [spɔrt] quiet transition
   b. Turkish spor → less overlap → [sɐpɔɾ] vowel intrusion
- Epenthetic vowels have natural targets; intrusive vowels do not.

Method

Data
- 1973 tokens of the form CC in spelling, in 5 morphological conditions.
- 1395 tokens were transcribed with an inserted non-lexical [v+]: C+[v+]
  Taken from the Turkish Electronic Lexicon [10]: 2 speakers, 30k lexemes, broad phonetic transcriptions by a Turkish linguist

Modeling
- Generalized mixed effects linear regressions using R and lme4 [13, 1].
- Chi-squared tests for apparent harmony

Predictions
If transcribed vowels are intrusive, they will be:
1) more likely when the ICI is longer: after dorsal C1s [3, 16]
2) more likely when context promotes voicing in the ICI: after voiced C1s.
3) affected by the place and manner of C1/C2.

Quality of the transcribed vowel
- Transcribed palatal and rounding harmony under applied (Table 2)

Transcribed insertion in TELL
Non-lexical [v+] was transcribed in 71% of CC tokens
* 74% of tokens with [-son] C2: 30% with [-son] C2.

Table: Ins-transcription of [v+] vs. [v-]
<table>
<thead>
<tr>
<th>V1</th>
<th>V2</th>
<th>[v+]</th>
<th>[v-]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+front]</td>
<td>[+front]</td>
<td>0.47</td>
<td>0.53</td>
</tr>
<tr>
<td>[-front]</td>
<td>[-front]</td>
<td>0.62</td>
<td>0.38</td>
</tr>
<tr>
<td>[+round]</td>
<td>[+round]</td>
<td>0.58</td>
<td>0.42</td>
</tr>
<tr>
<td>[-round]</td>
<td>[-round]</td>
<td>0.63</td>
<td>0.37</td>
</tr>
</tbody>
</table>

Table: Analysis of transcribed and untranscribed [v+]
s
<table>
<thead>
<tr>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>S4</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>C2</td>
<td>C1</td>
<td>C2</td>
</tr>
<tr>
<td>[v+</td>
<td>[v+]</td>
<td>[v+]</td>
<td>[v+]</td>
</tr>
<tr>
<td>C1</td>
<td>C2</td>
<td>C1</td>
<td>C2</td>
</tr>
<tr>
<td>[v-</td>
<td>[v-]</td>
<td>[v-]</td>
<td>[v-]</td>
</tr>
</tbody>
</table>

Discussion
- Onset cluster repair applies ~70% of the time, varies by speaker
- More likely with a sonorous C2, voiced C1 – primes voicing in the ICI
- More likely with a dorsal C1 – promotes longer ICI [16]
- Spreading of [+front] or [+round] to [v+] only occurs ~1/3 of the time.
- [V1] C1 and C2 affect the frontness of [v+], sometimes more than lexical V.
- Round [v+] only occurs with a high lexical V

References: