Does English pre-attachment matter?

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Pre-aspiration

- period of voiceless (primarily) glottal friction
Breathiness

- distinguished from period of voiced glottal friction = breathiness
Pre-aspiration & breathiness
Introduction

- pre-aspiration considered cross-linguistically rare (Silverman 2003; Clayton 2010)
- and rarely phonological (Clayton 2010: iii; Ladefoged & Maddieson 1996: 73)

“‘audio-phonetic dinosaur’ which ‘suffers from an accumulation of auditory handicaps’ (Bladon 1986: 7) and is doomed to rapid extinction whenever innovated, unless it succeeds in marking itself more perceptually prominent” (Clayton 2010: 19), a phenomenon which “could hardly be less suited for communicative purposes” (Helgason 2002: 35-6, paraphrasing Bladon 1986)

- (Tyneside) English pre-aspiration “considerably constrained and not likely to be phonologised as a contrastive feature” (Clayton 2010: 82)
- Scottish English pre-aspiration in fricatives “[serves as a local phonetic attribute] of phonological /-voice/ in Scottish English” (Gordeeva & Scobbie 2013: 266)
I would like to show that pre-aspiration is an important aspect of British English accents:

- based on its geographical occurrence
- participation in allophonic patterns
- its being one of the acoustic correlates of the fortis-lenis contrast
  - (/p/, /t/, /k/ vs /b/, /d/, /g/)
- forms two categories
Geographical distribution

- all over Wales
  - English (Morris 2010; Hejná 2015: 47-8)
  - Welsh (Morris 2010; Iosad in press)

- all over England
  - English (summary in Hejná 2015: 48, 166-7, 250-1; also Kettig 2015: 40)

- in Scotland and Ireland
  - English (summary in Hejná 2015)
  - Donegal Irish (Ní Chasaide 1985)
  - Scottish Gaelic (e.g. Ladefoged & Maddieson 1996: 73)
Geographical distribution

- Scottish Gaelic (e.g., Ladefoged & Maddieson 1996: 73)
Example 1:
Manchester English Laryngeal Allophony

• pre-aspiration participates at least in two patterns of laryngeal allophony

• one applies to plosives (/p/, /t/, /k/) and is conditioned prosodically

• another is conditioned segmentally - plosives vs fricatives (/f/, /θ/, /s/, /ʃ/)
Speakers:

- 3 females & 2 males
- 20-22 years
- parents also from Manchester
Data:

• words embedded in *That’s the word X.*

• plosive context: *pat, patter*
  • 36-72 tokens per speaker
  • 305 tokens in total

• fricative context: *mass*
  • 15-31 tokens per speaker
  • 105 tokens in total
Data:

- /æ/, /ɪ/, /ʊ/ combined with /p/, /t/, /k/
- /f/, /θ/, /s/, /ʃ/
Prosodically conditioned allophony in plosives

- word-medially pre-aspirated
  - *batter* \([\text{pa}^h\text{th}^h\text{ə}]\)

- word-finally (pre)glottalised
  - *bat* \([\text{pa}^\text{ʔt}] \sim [\text{pa}^\text{ʔ}]\)

(Fit Bayesian Models)
Prosodically conditioned allophony in plosives

pre-aspiration and position within word

- dark shade: absence of pre-aspiration
- light shade: presence of pre-aspiration

word-final

word-medial
Prosodically conditioned allophony in plosives
Segmentally conditioned allophony in fortis obstruents

- *mat* [maʰ(t)] vs *mass* [maʰs]
  - glottalisation obligatory in plosives (word-finally)
  - pre-aspiration obligatory in fricatives (word-finally)
    - with fricatives, glottalisation co-occurs with pre-aspiration
    - *mass* [maʰs] ~ [maʰʰs]
Example 2:
Aberystwyth English cues to the fortis-lenis contrast

• production data

• word-final (*cot*) and word-medial (*cotter*) pre-aspiration is a strong correlate of the contrast

• as are
  • breathiness
  • voicing
  • release duration
  • vowel duration

• word-initially pre-aspiration not a correlate
Example 2: data

10 females

 born & raised in Aberystwyth

 L1 Welsh speakers, proficient in English

 word-list data

  - $bap \sim pap$
  - $cabbie \sim capper$
  - $cab \sim cap$

 1997 tokens in total

 (Fit Bayesian Models)
Example 2:
word-initial pre-aspiration and voicing
(*pap vs bap*)
Example 2:
word-medial & -final pre-aspiration and voicing
(capper vs cabbie; cap vs cab)
Example 2:
word-medial & -final pre-aspiration and breathiness
(*capper* vs *cabbie*; *cap* vs *cab*)
Example 2:
release duration
Example 2:
release duration
Example 2:
vowel duration
Example 3: Aberystwyth English pre-aspiration categories

- AberE pre-aspiration forms two categories
- Lisker & Abramson 1964
- Scobbie 2002
Example 3: data

<table>
<thead>
<tr>
<th>12 females</th>
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<tbody>
<tr>
<td>born &amp; raised in Aberystwyth</td>
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<tr>
<td>L1 Welsh speakers, proficient in English</td>
</tr>
<tr>
<td>word-list data</td>
</tr>
<tr>
<td>• ‘CVP &amp; ‘CVPV words (pat, patter)</td>
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<tr>
<td>7082 tokens in total</td>
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</table>
Example 3:
Aberystwyth English pre-aspiration categories
Example 3:

Aberystwyth English pre-aspiration categories

- AberE pre-aspiration forms two categories

<table>
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<tr>
<th>ABE12</th>
<th>ABE14</th>
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<td><img src="image12.png" alt="Graph" /></td>
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egories
More evidence

- pre-aspiration involved in allophonic patterns in more accents of BrE (Birmingham, Kent)

<table>
<thead>
<tr>
<th></th>
<th>Birmingham</th>
<th>Manchester</th>
<th>Kent</th>
<th>North Wales</th>
<th>Aber</th>
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<tbody>
<tr>
<td>tat</td>
<td>[tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
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<tr>
<td>tatter</td>
<td>a. [tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
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<tr>
<td></td>
<td>b. [tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
<td>[tsʰ aʔ]</td>
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- this needs to be confirmed
- so far word-list data
Conclusion

• the presence of pre-aspiration seems to matter in the sound system in BrE accents

• also sensitive to social conditioning (Foulkes & Docherty 1999; Hejná 2015: chapter 7)

• pre-aspiration seems to be doing fine for a handicapped auditory dinosaur

• maybe not so handicapped

• maybe not exactly a dinosaur
References

Glottal replacement in Manchester English

- 25% of the plosive cases
- 7% of the fricative cases

- /k/ < /p/ < /t/
- /ʊ/ < /ɒ/
The more frequent the pre-aspiration in fortis, the more frequent the voicing in lenis.
Segmentally conditioned allophony in fortis obstruents

- Glottalisation more frequent with low vowels
  - Significant for /a/ vs /ɪ/
  - Not significant for /ɒ/ vs /ʊ/

![Diagram showing presence of glottalisation by vowel phoneme]
Segmentally conditioned allophony in fortis obstruents

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