New Laryngeal Allophony in Manchester English

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Research question

- Manchester English well-known for glottalisation
- we found pre-aspiration in the variety
- glottalisation is an adducting laryngeal gesture
- pre-aspiration is an abducting one

What is the relationship between the two?

- ‘CVP (bat), ‘CVPV (batter)
- ‘CVF (mass)
Pre-aspiration

- period of voiceless (primarily) glottal friction
Pre-aspiration

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Glottalisation

- irregularity in the glottal pulses
- sudden drop in $f_0$
Glottalisation

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Glottalisation

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- sudden drop in $f_0$
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/
Results: plosives

- word-medially pre-aspirated *batter*  [paʰθʰə]
- word-finally (pre)glottalised *bat* [paʔt] ~ [paʔ]
- other aspects no effect
  - vowel backness
  - vowel height
  - place of articulation of the plosive
Results: fricatives

- **Fricatives**
  - pre-aspiration obligatory
  - glottalisation co-occurs with pre-aspiration
  - *mass* [maʰh] ~ [maʰs]

- glottalisation more frequent with low vowels
  - significant for /a/ vs /ɪ/
  - not significant for /ɒ/ vs /ʊ/
Results: fricatives

- Fricatives
- Pre-aspiration obligatory
- Glottalisation co-occurs with pre-aspiration
- Mass 
  [maʔ] ~ [mah]
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Results: fricatives

- Fricatives
- pre-aspiration obligatory
- glottalisation occurs with pre-aspiration
- mass [mah] ~ [mah]
- glottalisation more frequent with low vowels
- significant for /a/ vs /ɪ/
- not significant for /ɒ/ vs /ʊ/
Implications

• diachronic processes assume:
  • pre-aspiration > glottalisation
  • glottalisation > pre-aspiration

• but exactly how does this happen?

• pre-aspiration and glottalisation can co-occur
Further questions

• connection between the pre-release and post-release gestures?

• pre-aspiration and post-aspiration perceptually confusable

• not borne out by preliminary analyses
Further questions

- The connection between the pre-release and post-release gestures?
- Pre-aspiration and post-aspiration perceptually confusable?
- Not borne out by preliminary analyses.
Further questions

• Does the relationship change in different styles?
• Is it the same in older speakers?
• What relationships exist in other English accents?
• How old is English pre-aspiration?
• Is it as old as glottalisation?
A thank you
to Sarah Mahmood

For her help with data collection and further data processing
Glottal replacement

- glottalisation not followed by acoustically visible oral gesture
- treated as cases of glottalisation
- but differentiated in further analyses
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Glottal replacement

- 25% of the plosive cases
- 7% of the fricative cases
- /k/ < /p/ < /t/
- /ʊ/ < /ɒ/