Contact effects on voice-onset time (VOT) in Patagonian Welsh
Morgan Sleeper • University of California, Santa Barbara • e: msleeper@umail.ucsb.edu // t: @zipmon

Background
- Welsh
  - Brythonic Celtic
  - Wales & Argentina
- Patagonian Welsh
  - Since 1865
  - Long-term Spanish contact
- Jones’ 1984 study on Welsh in Gaiman, Patagonia [7]
  - Young speakers: ‘Spanish unaspirated’ /p t k/
  - Older speakers: ‘Welsh aspirated’ /p t k/
  - Middle-aged speakers: split
  - No specific VOT values
- VOT (voice-onset timing)
  - Negative (voice leading) or positive (lag) [8]
  - Languages differ in how they contrast voiced and voiceless stops: [voiced], [voiceless unaspirated], [aspirated] [5]
- This study aims to:
  - Quantitatively investigate whether the contact-induced changes in VOT Jones noted have become a feature of modern Patagonian Welsh
  - Increase understanding of phonetic contact and of this unique, underdescribed variety of Welsh

Data/Methods
- Conversational corpus data: Bangor Siarad/Patagonia [6]
  - 36 speakers (18 from Wales, 18 from Patagonia)
    - 9 male and 9 female speakers from each
    - 3 each of Early (0-29), Middle (30-59), Older (60+)
- Tokens with word-initial /p t k/
  - Followed by /a/
  - Non-prominent, phrase-medial, initial-stress
- /p/: /’pam/ ‘why’ /’pabel/ ‘tent’
- /t/: /’tan/ ‘until’ /’tatus/ ‘potatoes’
- /k/: /’kani/ ‘to sing’ /’kastril/ ‘castle’
- 291 tokens total
- Statistical methods: linear mixed-effects model [2]
  - Dependent variable: VOT
  - Fixed effects: Country, Sound (/p t k/), Age, Sex
  - Random effects: Speaker, Word

Results
- Final model (R²m=0.36; R²c=0.43)
  - Highest level predictors of VOT:
    - Country (p=3.44e-06)
    - Sound*Age (p=0.015)
  - Random effects: Speaker kept, Word discarded
  - Fixed effects:
    - Country
    - Sound (/p t k/)
    - Age
    - Sex
  - VOT continuum points to phonetic influence from contact:
    - This unique, underdescribed variety of Welsh
    - Applies to all age-groups
  - No age-graded difference
    - No interaction between Age & Country; applies to all Patagonian speakers
    - Differences from Jones, where younger speakers had ‘Spanish’ (less aspirated) /p t k/
    - and older speakers had ‘Welsh’ (more aspirated) /p t k/
    - Less-aspirated /p t k/ reported in Jones’ younger and middle-aged speakers start of diachronic shift, rather than synchronically age-graded pattern
- Shorter VOT could point to possible shift in Voicing contrast
  - Standard Welsh contrasts /p t k/ and /b d g/ on aspiration, rather than voicing [1]
  - If Patagonian /b d g/ shift towards or into negative values, this contrast could change:

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- Older speakers in Patagonia & Wales produce /k/ with longer VOT than younger speakers
  - Pattern of contrasting /p vs. /t k/ acquired later in language development?

Discussion
- Patagonian speakers produce /p t k/ with significantly shorter VOT than Welsh speakers
  - VOT continuum points to phonetic influence from contact:
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Conclusions
- Patagonian Welsh speakers produce voiceless stops /p t k/ with significantly shorter VOT than Welsh speakers
  - Confirms & quantifies Jones’ [7] observations: less aspirated stops due to contact with Spanish
    - Applies to all age-groups; lower VOT values now a unique phonetic feature of Patagonian Welsh
  - Future research: /b d g/; changing sociolinguistic situation and increased contact from Wales

References