

What is happening to the Scottish Vowel Length Rule in Glasgow?

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What is happening to the Scottish Vowel Length Rule in Glasgow?

- Background
 - prosodic factors and sound change
 - the Scottish Vowel Length Rule
- Methodology
 - Glasgow real-time corpus
- Results
 - /i ʌ a/
 - /i ʌ/
 - /a/
- Discussion

Background

- Relatively few studies of real-time change (e.g. Sankoff 2006)
 - main focus of real-time studies on segmental change

Background

- Role of prosodic factors in phonological variation and change rarely investigated
 - speech rate and glottalling (Docherty 2007)
 - prosodic environment may facilitate some sound changes (Beckman et al 1992, extending Ohala e.g. 1989)
 - vowel quantity may be affected by speech prosody (e.g. Nakai et al 2012)

The Scottish Vowel Length Rule (SVLR)

- vowels are short except
 - before /r/, e.g. *beer*
 - before voiced fricatives, e.g. *bees, breathe*
 - before morpheme boundary, e.g. *bee, agree*

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Voicing Effect

Scottish Vowel Length Rule (SVLR)

- Originally, and in many Scots dialects
 - All monophthongs and /ai/ (e.g. Aitken 1981)
- Glasgow
 - Just /i ɪ ai/ (Scobbie et al 1999)

Variation and change and the SVLR?

- in situations of high contact with Anglo-English, SVLR is weakening, and shifting to Voicing Effect:
 - Children of Anglo-English parents in Edinburgh (Hewlett et al 1999)
 - Younger speakers in Berwick (Watt and Ingham 2000)
 - Speakers in Aberdeen (Watt and Yurkova 2007)
 - Younger Scottish speakers in Gretna and Eyemouth (Llamas et al 2010)

Research questions

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We might expect SVLR to be robustly maintained, and/or contact with Anglo-English to lead to weakening, and a shift to a Voicing Effect patterning

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We would expect SVLR to be implemented differently in different prosodic contexts. If the SVLR is changing, do prosodic factors play a role?

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Changes to the cityscape seem to have helped innovation and change in the consonant system. Is this also a factor in the implementation of the SVLR over time?



SOUNDS OF THE CITY



Fine phonetic variation and sound change: A real-time study of Glaswegian

<http://soundsofthecity.arts.gla.ac.uk/>

Oct 2011-Sept 2014



The Leverhulme Trust

A real-time corpus of Glaswegian vernacular – ideal structure

<i>Decade of recording</i>	<i>Old 67-90</i>	<i>Middle-aged 40-55</i>	<i>Young 10-15</i>
1970s	6 m, 6 f	6 m, 6 f	6 m, 6 f
1980s	6 m, 6 f	6 m, 6 f	6 m, 6 f
1990s	6 m, 6 f	6 m, 6 f	6 m, 6 f
2000s	6 m, 6 f	6 m, 6 f	6 m, 6 f

Sample for this paper

<i>Decade of recording</i>	<i>Old 67-90</i>	<i>Middle-aged 40-55</i>	<i>Young 10-15</i>
1970s		4 m (sociolinguistic interview)	4 m (sociolinguistic interview)
1980s			
1990s			
2000s		4 m (conversation)	4 m (conversation)

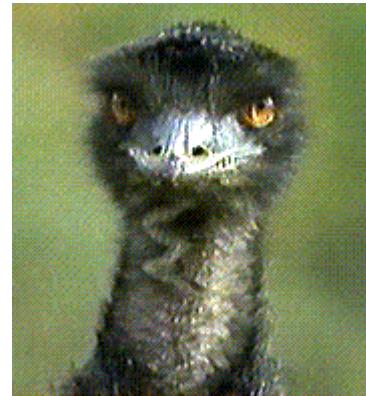
Sources (with thanks): Ronald Macaulay; Glasgow Media Project

Corpus software

- LABB-CAT (Fromont and Hay; previously ONZEMiner)
- <http://labbcats.sourceforge.net/>
- Storage of time-aligned transcripts
- Detailed contextualized searches

Vowels

- All prominent tokens of
 - /i ɪ/ (SVLR expected)
 - /a/ (SVLR not expected)
- N = 1520
(not in words before /r/)
- Segmented and labelled in EMU (Cassidy and Harrington 2001; Harrington 2010)



Segmentation and labelling

- Segmental environment
 - place, manner of articulation, voicing of following consonant
- Following boundary
 - morpheme, word, phrase, none

Factors affecting duration

- ‘high level’ prosodic factors:
 - phrasal position
 - initial, medial, final
 - phrasal prominence
 - metrical stress; pitch accent; nuclear
- ‘low level’, affecting timing:
 - lexical frequency; number of syllables in word; number of segments per syllable

Social factors and 'time'

- Contact: all speakers coded according to 'high' or 'low' contact with Anglo-English
- (inferred) network structure/social circumstances

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Year of recording		00M	00Y
	70M	70Y	
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apparent- and real-time: 'group'

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WW II

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**urban
regeneration**

Social factors and 'time'

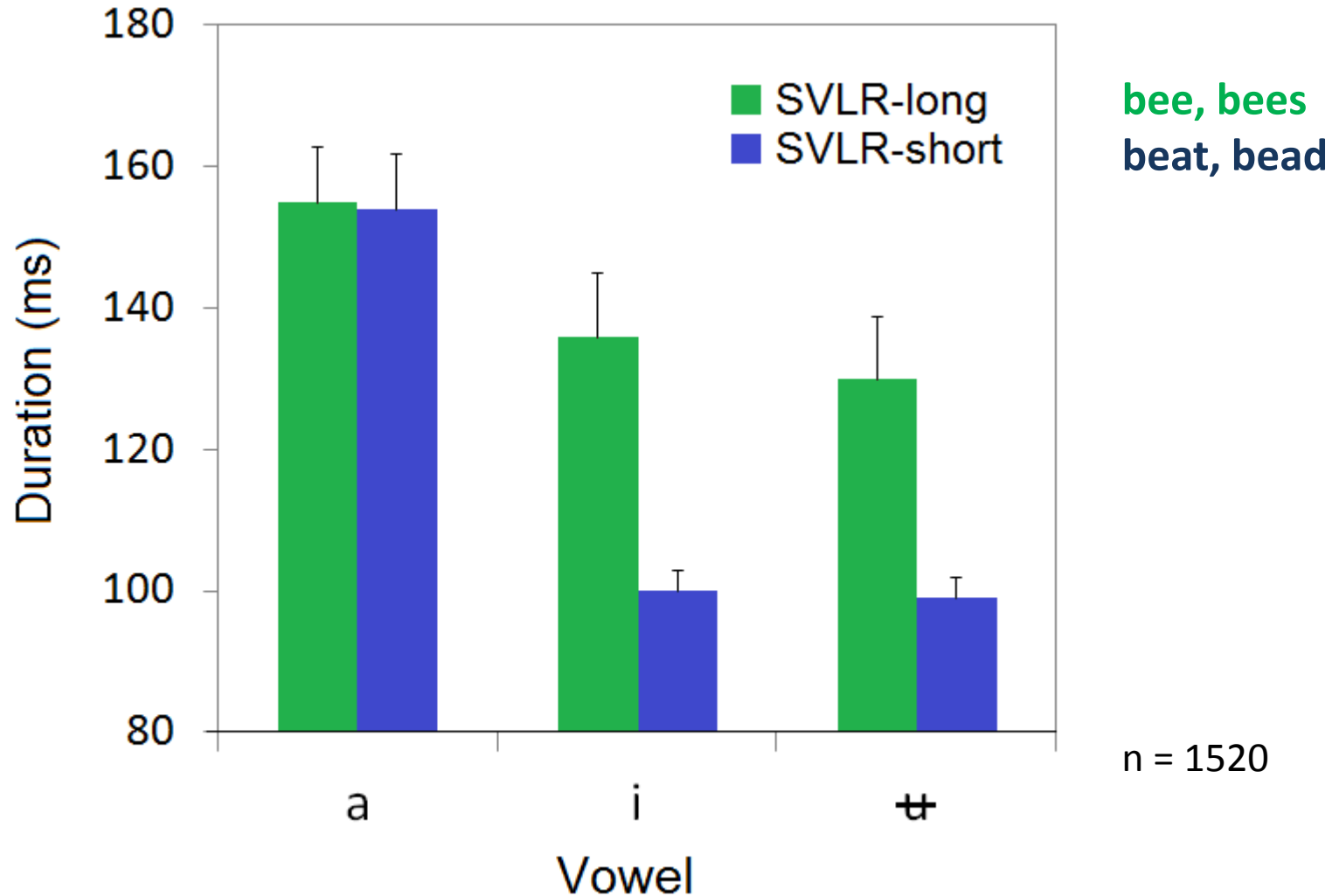
- Contact: all speakers coded according to 'high' or 'low' contact with Anglo-English
- (inferred) network structure/socio-spatial change

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		urban		
		regeneration		

Data analysis

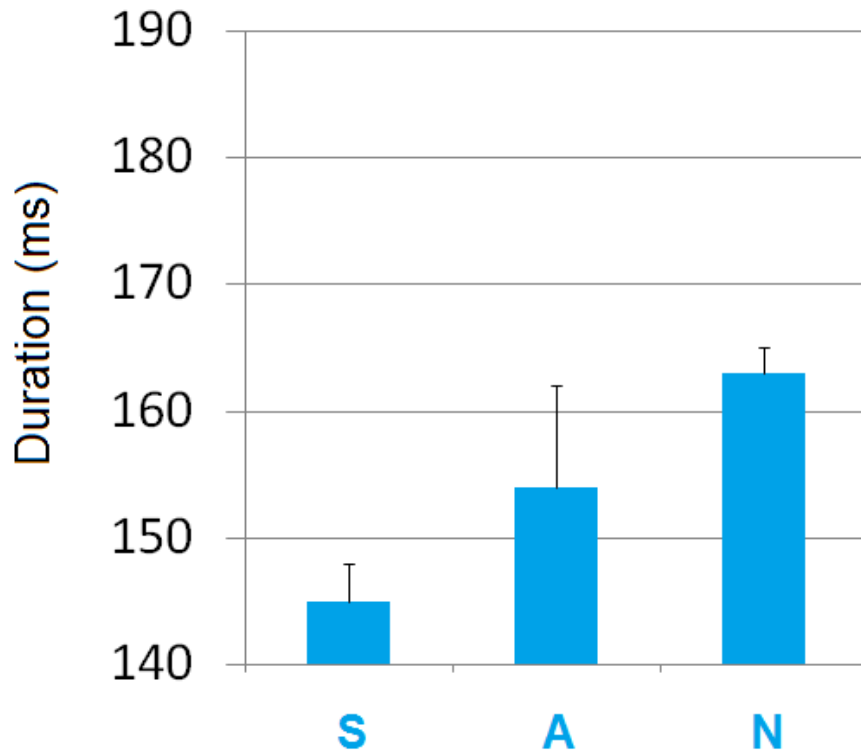
- effective normalization by reporting estimates from Linear Mixed Effects modelling
- three sets of modelling:
 - /i ʌ a/ full model
 - /i ʌ/ SVLR vowels only
 - /a/ non-SVLR vowel

all three vowels and the SVLR

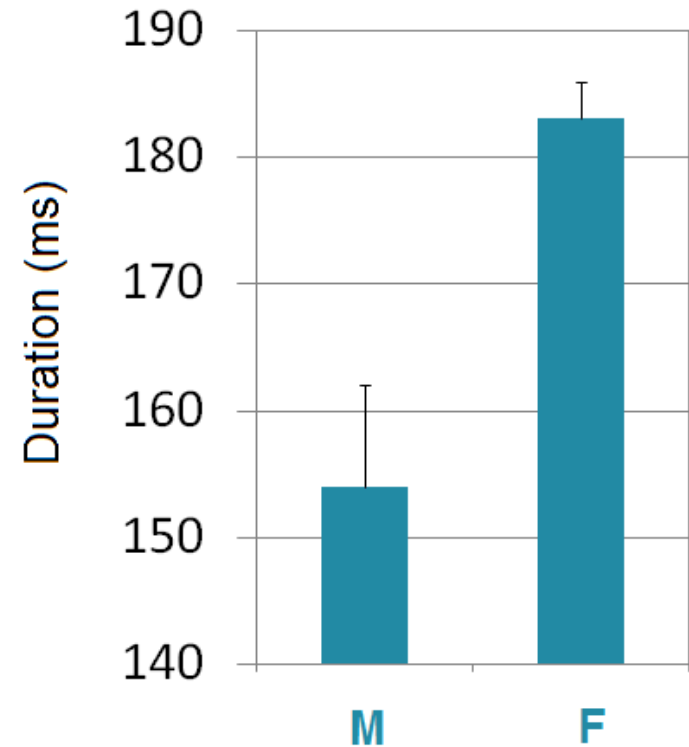


Prosodic effects on /i ʊ a/

Prominence

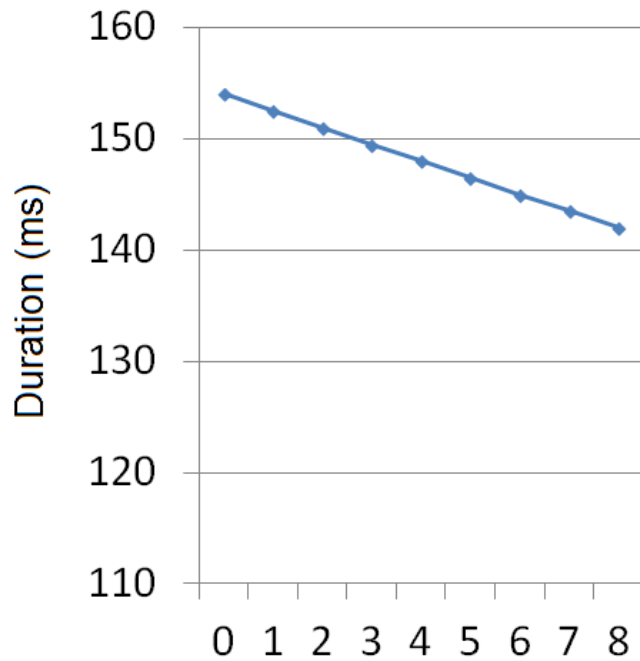


Phrasal position

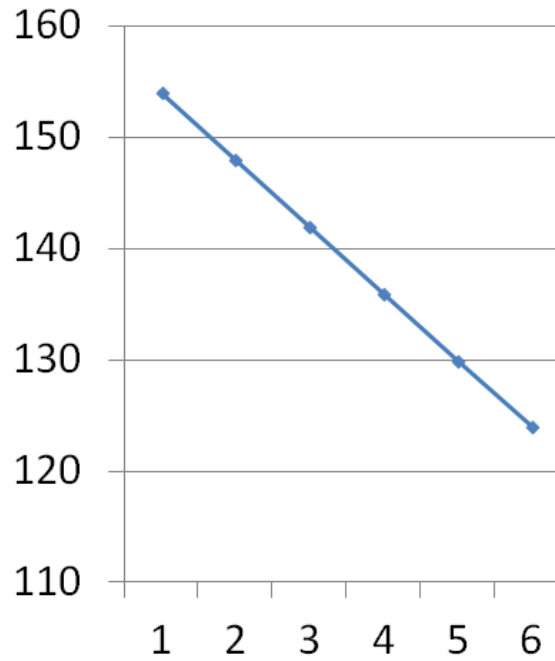


Low-level timing effects on /i ʌ a/

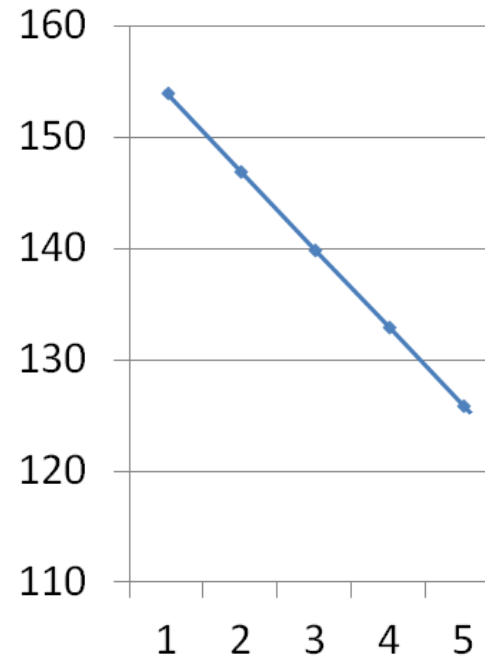
Log frequency



N segments / syllable



N syllables / word



Social factors and 'time' for /i ʌ a/

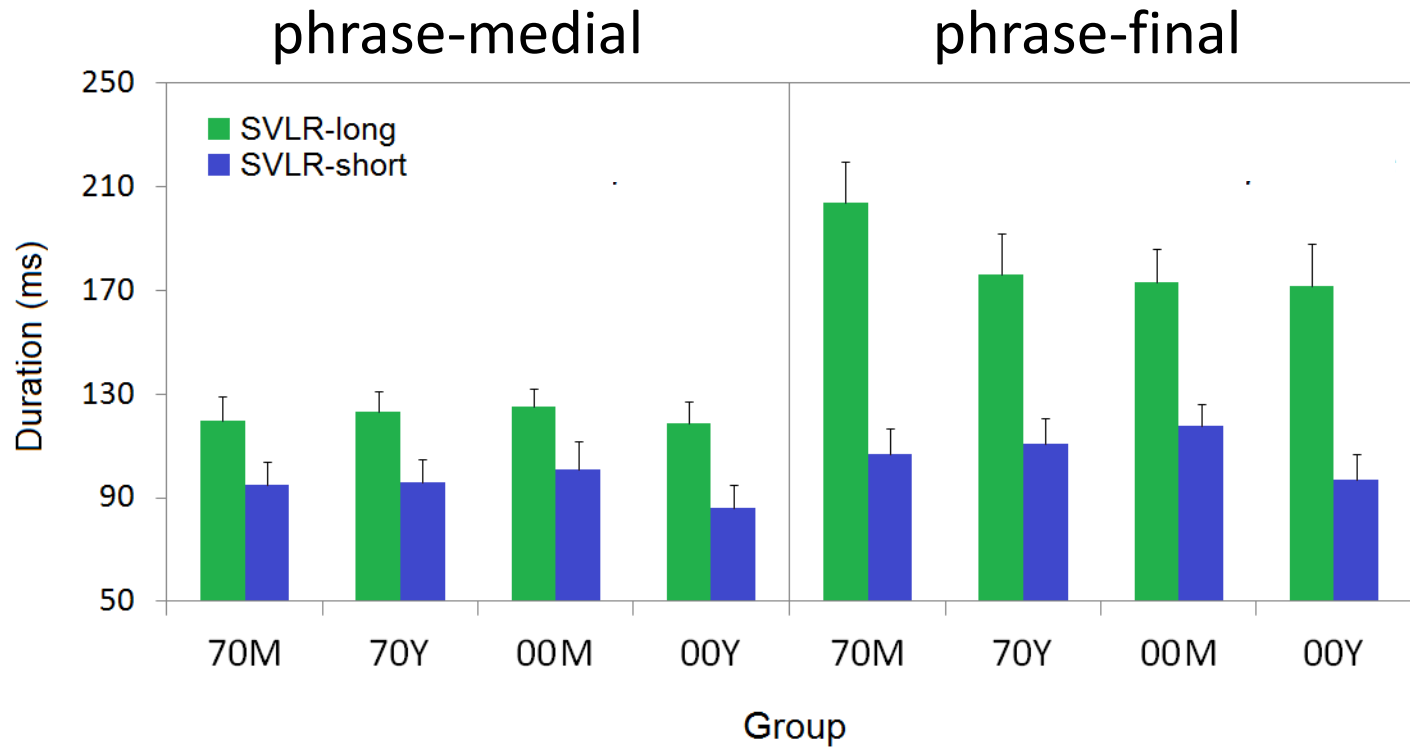
- Speakers with more contact with Anglo-English have significantly longer /a/ (but not /i ʌ/)
- 'group' is not significant in the full model

Social factors and 'time' for /i ʌ a/

- Speakers with more contact with Anglo-English have significantly longer /a/ (but not /i ʌ/)
- 'group' is not significant in the full model
- Voicing Effect is not significant in the full model

/i ʌ/, the SVLR, and phrase position

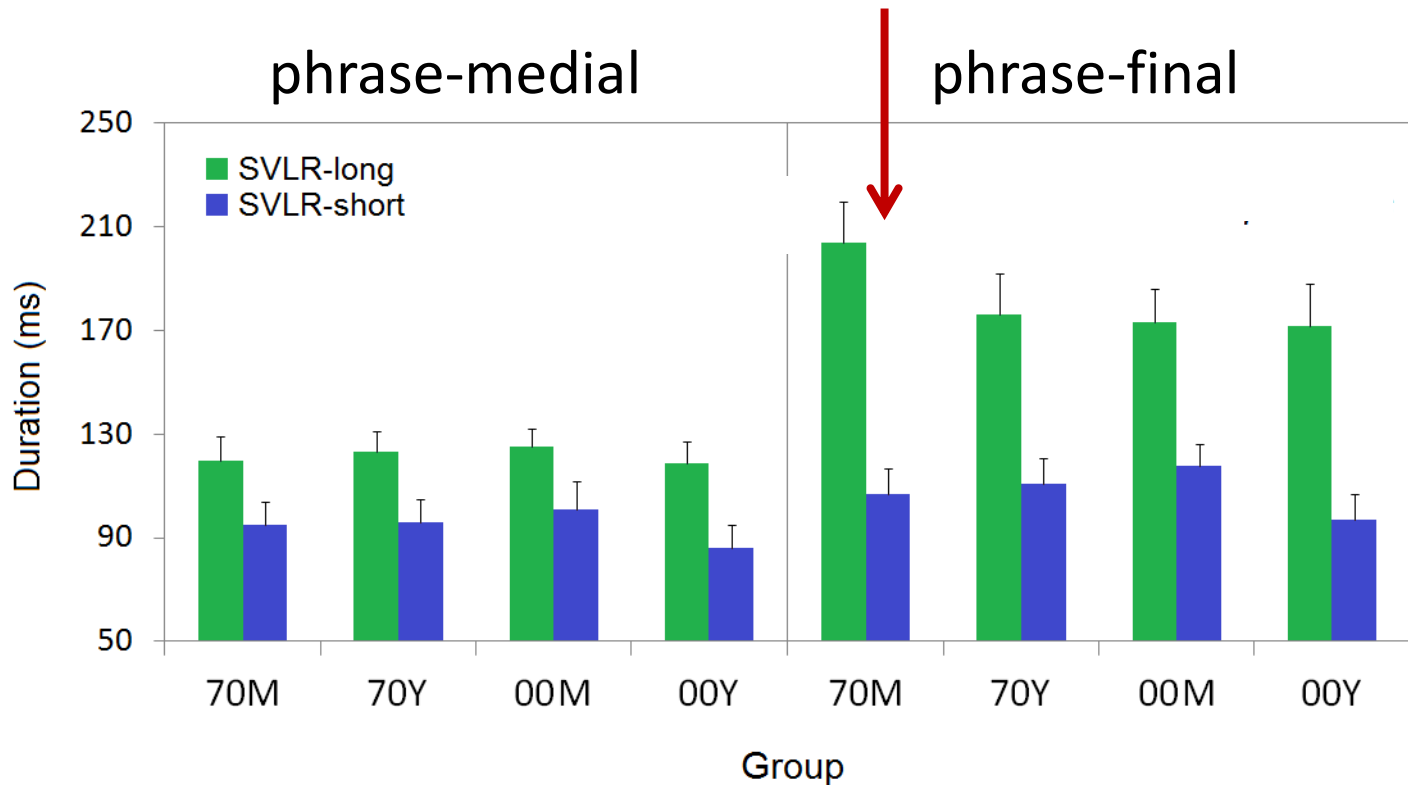
bee, bees
beat, bead



n = 982

/i ʌ/, the SVLR, and phrase position

bee, bees
beat, bead



n = 982

70M show longer SVLR 'long' vowels than other groups in phrase-final position

/i ʌ/, the SVLR, and phrasal prominence

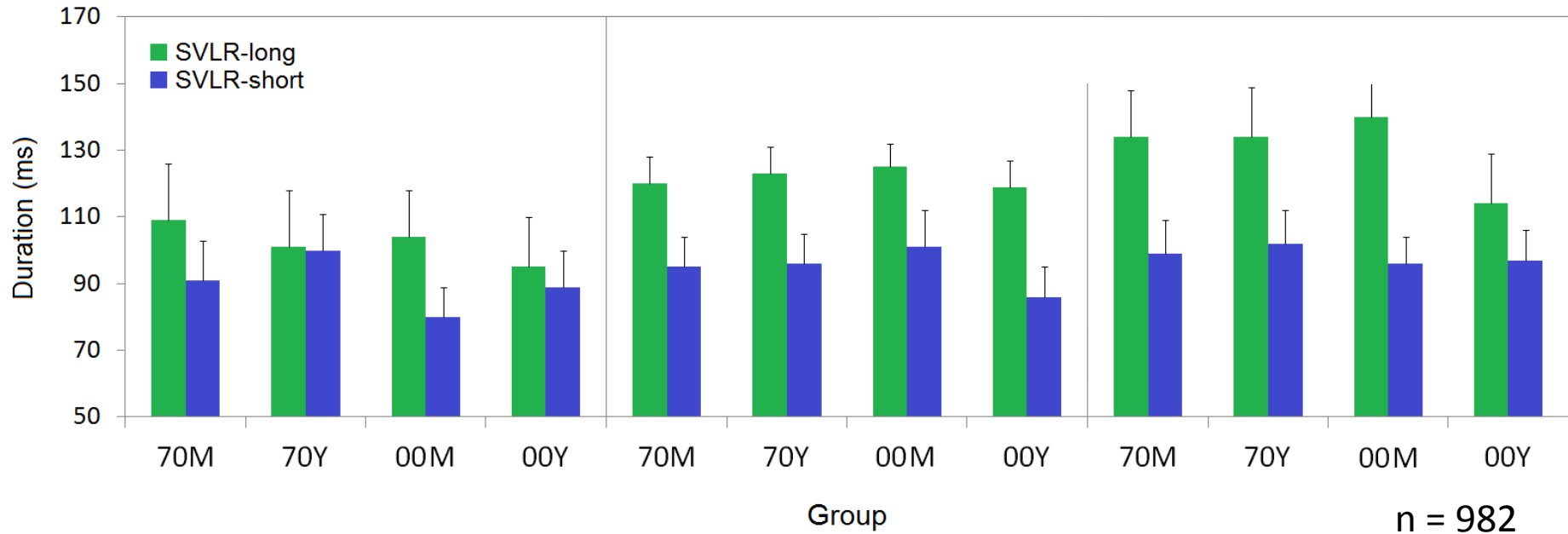
bee, bees

beat, bead

stressed

accented

nuclear



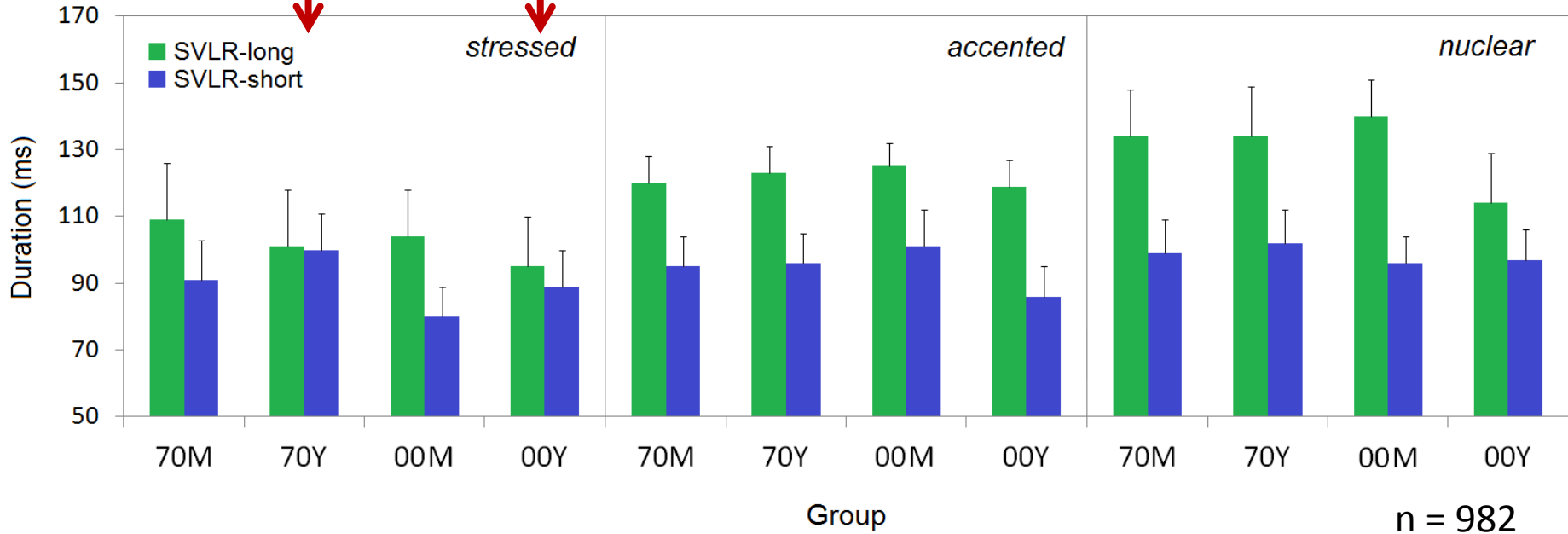
/i ʌ/, the SVLR, and phrasal prominence

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beat, bead

stressed

accented

nuclear



Weak effect: younger speakers show very little SVLR contrast in stressed position

/i ʌ/, the SVLR, and phrasal prominence

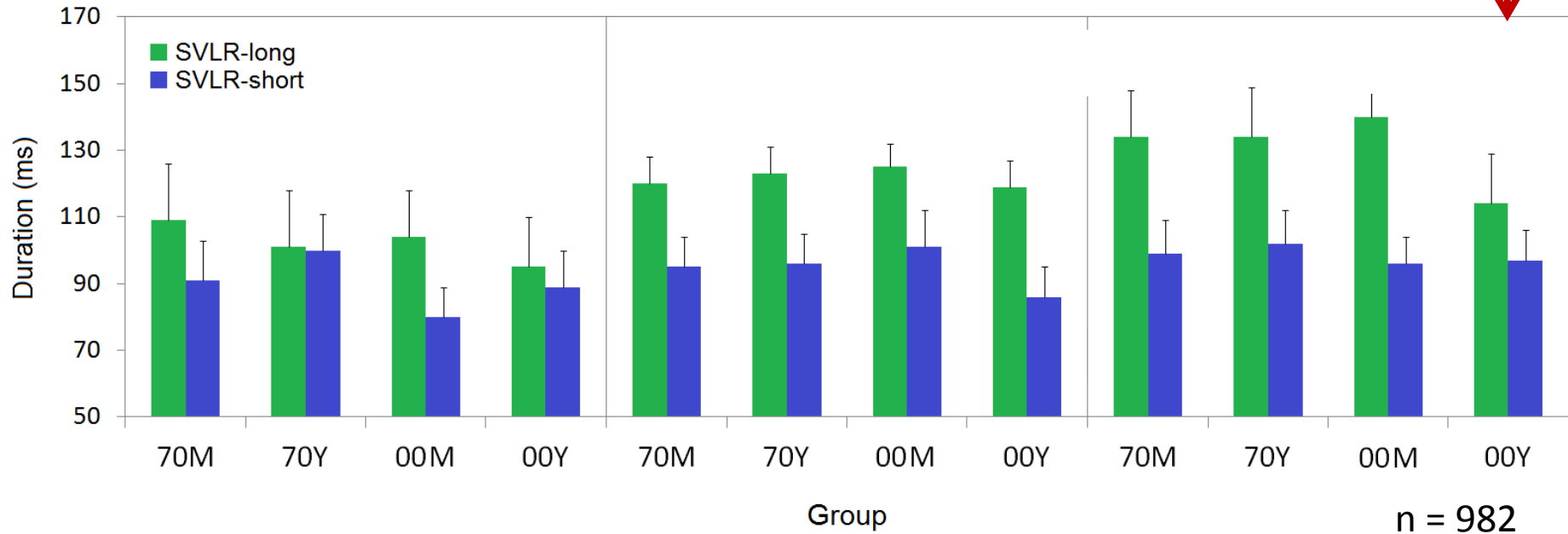
bee, bees

beat, bead

stressed

accented

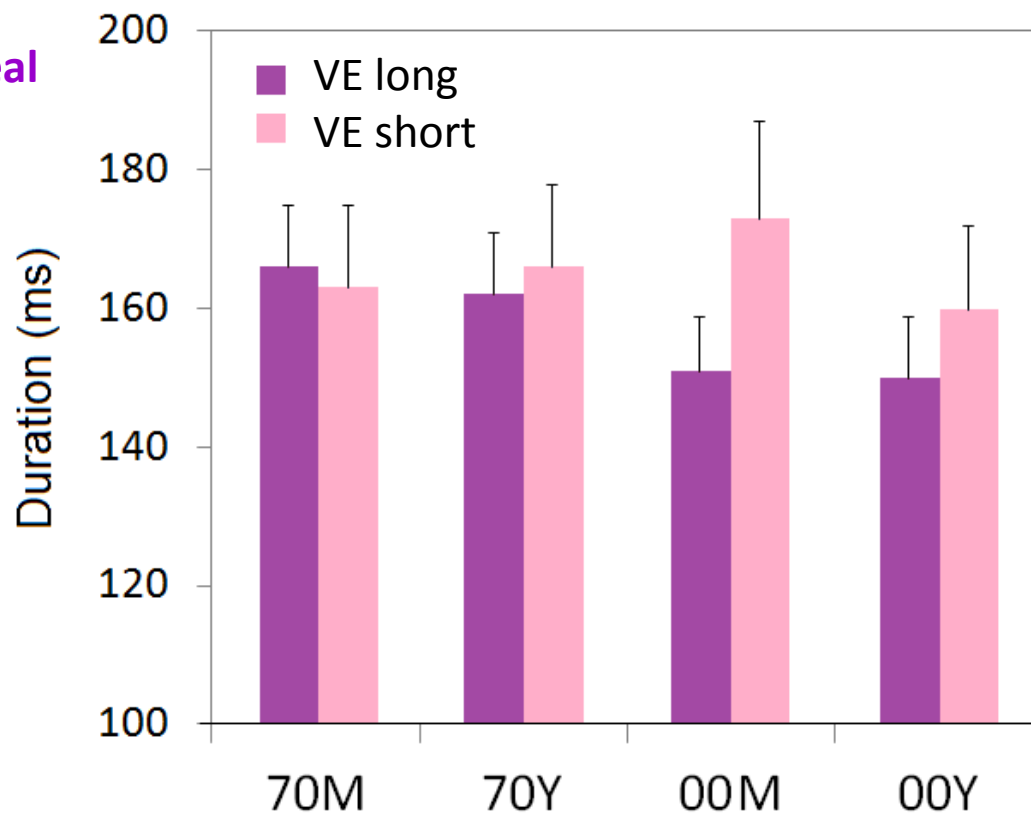
nuclear



00Y show shorter SVLR 'long' vowels than other groups, but only in nuclear position

/a/ and the Voicing Effect

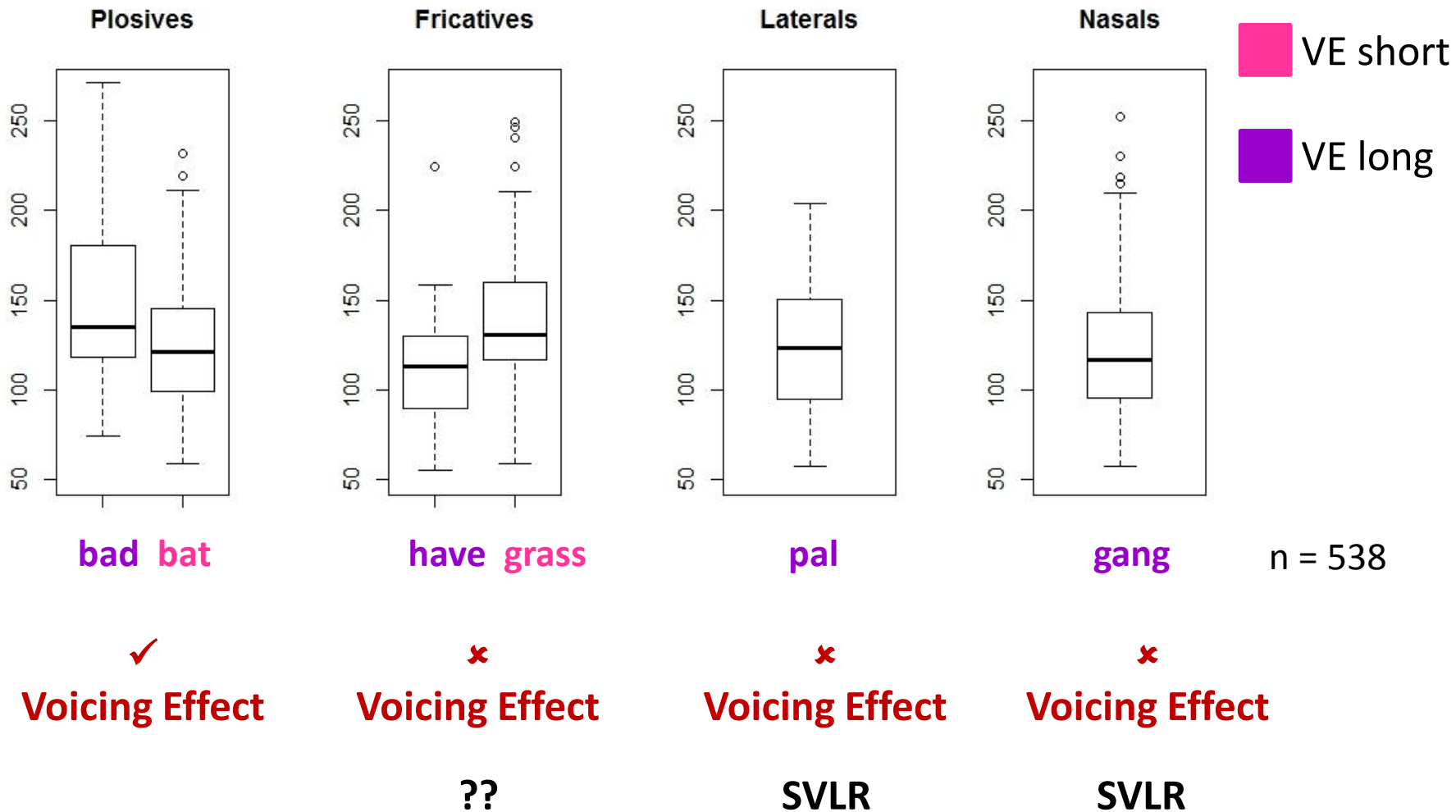
bead, bean, beal
beat



n = 538

/a/ is longer in VE 'short' environments, but not in 70M

Duration of /a/ by voicing/manner of articulation of following consonant



Discussion

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- shifts in SVLR are not accompanied by shifting to Voicing Effect in these two vowels
 - no inferred evidence for contact
 - no statistical evidence for contact

Discussion

- SVLR is present in Glaswegian /i ʌ /
- also potential evidence for real-time change
- in conjunction with (high-level) prosodic factors

- Shifts in SVLR may relate to shifts in social network structure/social circumstances in Glasgow

Year of recording

00M

00Y

70M

70Y

Decade of birth

1930s

1950s

1980s

**longer SVLR long vowel in
phrase-final position**

Year of recording

00M

00Y

70M

70Y

Decade of birth

1930s

1950s

1980s

**shorter SVLR
'long' vowel in
nuclear position**

Discussion

- as expected /a/ doesn't show SVLR
- but it does show an effect relating to voicing of following consonant, emerging over time
- but not as we would expect it for Anglo-English, since it is an inverted effect, with shorter vowels where Anglo-English has longer ones, and vice versa
- and interesting patterning according to following voicing/manner of articulation

Conclusions

- these results may reflect real-time shifts in the realization of the SVLR in Glaswegian
- including prosodic factors allows them to be observed
- and suggests that higher level prosodic factors play a role in these changes (Beckman et al 1992; Nakai et al 2012)

Conclusions

- unlike change in SVLR in other (Eastern) varieties, no evidence of shift to Voicing Effect
- suggests this may be another system-internal change in Glasgow (cf derhoticization)
- but one which does not (?yet) lead to an English-English looking outcome



SOUNDS OF THE CITY

GULP

Thank you!



University of
Kent



The Leverhulme Trust
