

# Speech and society A sociophonetic journey to Scotland

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Speech and Society: Lecture 3 ILGPA, Sourbonne Nouvelle, Paris 18 May 2022

# Speech and Society A sociophonetic journey to Scotland

- Wed 4<sup>th</sup> May: Lecture 1 preliminaries
- Thurs 12<sup>th</sup> May: Lecture 2 speech and identity
- Wed 18<sup>th</sup> May: Lecture 3 Sound change in a changing city
- Wed 25<sup>th</sup> May: Speech over time and space in Scotland

# Speech and Society resources

- Lecture powerpoint slides
- Reference lists
- Papers

• On google drive



## **Theoretical constructs**

#### modelling sound change

#### Phonetics

- phonetic biases in speech production and perception
  - phonetic variants

#### Sociolinguistics

 variants gain social meaning and propagate through individuals and communities

e.g. Ohala 1989; Harrington et al 2008; Garrett/Johnson 2012; Weinreich et al 1968

#### modelling sound change

... which carry and reflect social-indexicality for speakers and listeners

e.g. Strand 1999; Hay et al 2006; Foulkes 2010; Yu 2010; Coetzee et al 2018

#### Types of language change

- internal 'change from below'
- external 'change from above'

#### Factors motivating change:

- overt/covert prestige
- social networks
- dialect contact/ideologies (media)
- social practices/bricolage affiliation/differentiation

#### Propagation of change:

- transmission incrementation
- diffusion ('off the shelf' / 'under the counter')

Labov 1972; 2007; Trudgill 1986; Milroy 2002; 2007; Eckert 2018

# Observing language change in progress

'in real-time'

'to observe a speech community at two discrete points in time' (Labov, 1994: 73)

panel studies follow the same individuals
across time
trend studies require resampling the
community.'

# change 'in apparent time'

'that is, the distribution of linguistic variables across age levels' (Labov, 1994: 45-6)

**assumption:** speakers acquire their language system around the age of 7 years old, and this system persists as they age

- chronological age is used as a proxy for time depth
- different patterns of variation which correlate with age may indicate language change in progress

# change 'in apparent time'

'that is, the distribution of linguistic variables across age levels' (Labov, 1994: 45-6)

**assumption:** speakers acquire their language system around the age of 7 years old, and this system persists as they age

- chronological age is used as a proxy for time depth
- different patterns of variation which correlate with age may indicate language change in progress
- age grading!

Sankoff (2006); Sankoff/Blondeau (2007)

## Glasgow has changed over the 20<sup>th</sup> century



## Glasgow has changed over the 20<sup>th</sup> century



### Has Glaswegian also changed?



'and then there used to be a great big shop at the corner of the arcade in Glasgow, and eh, they bred, eh, Clydesdale horses, well they came about the house'

Elderly woman born in the 1890s, recorded in 1970s



'and getting Glasgow sprouced up, built up, aw the wasteland area, get things on it, don't just build houses and throw people intae it'

Middle-aged woman born in the 1940s, recorded in the 1990s





 extensive potential for geographical, social and demographic mobility over 20<sup>th</sup> century

does contact induce accent change = convergence and levelling?

(e.g. Trudgill 1986; Auer/Hinskens 2005; Milroy 2002; Andersen 1988)











#### Scottish Glasgow Standard Inver dialect Scotla English Perth Gla Edinburgh Londonderry. ited om<sup>o</sup>Sunderland nonstandard York Bog NHA oLeeds Hull Anglo effield Galwayo Ireland Englishes Standard Carlo Limerick Kilkenny Southern Iralee Clonmele Waterford Wales Cork **British** Cardiff Conigar Bog (Natural Heritage Area) Bris English Exeter Bournemou Plymouth © Torquay St. Ives





e.g. Milroy 2007

Supralocal



## materials



Fine phonetic variation and sound change

A real-time study of Glaswegian

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

> <u>https://ctpp.vectorgraphicdesigner.co.uk/</u>

Oct 2011-December 2014....

The Leverhulme Trus



## Sounds of the City real-time corpus

Decade of	Old	Middle-aged	Young
Recording	67-90	40-55	10-17
	(Decade of Birth)	(Decade of Birth)	(Decade of Birth)
1970s	3 f, 5 m (1890s)	7 f, 7 m (1920s)	4 f, 6 m (1960s)
1980s	6 f, 6 m (1900s)	4 f, 12 m (1930s)	2 f, 5 m (1970s)
1990s	6 f, 6 m (1910s)	6 f, 6 m (1940s)	6 f, 6 m (1980s)
2000s	6 f, 6 m (1920s)	6 f, 5 m (1950s)	6 f, 6 m (1990s)

Controlled-access, force-aligned, electronic LaBBCAT corpus of spontaneous speech, available for researchers, covering 100+ years of Glaswegian in **apparent- and real-time**.



# Berliner Lautarchiv British & Commonwealth Recordings



- Wilhelm Doegen
- recordings made in prisoner of war camps in Germany between 1916 and 1918









M876

6 speakers from western Central Belt of Scotland recorded during 1916 and 1917

# speaker from Glasgow, recorded in 1916

There was a man whae had twa son. The youngest of them said to his faither, 'Gie me that pairt of your guids that belangs to me'. So the faither gied him his share. No mony days efterwards, the young man gaithered aw his belangings together, and went away into a faur country. There he wasted aw that he had. When he had spent awthing, a great famine kam ower the country, and he began to be in waant.

## Time depth in the Glasgow corpora



#### **Decade of real-time recordings**

# Time depth in the Glasgow corpora



### Decade of real-time recordings Decade of birth: old; middle-aged; young



#### Stuart-Smith (1999), Urban Voices







(e.g. Stuart-Smith et al 2007; Stuart-Smith & Timmins 2006; Stuart-Smith et al 2013)

# Sample: TH-fronting



## One time point: 2000s middle-aged; young male/female speakers auditory analysis

e.g. <u>th</u>ink, Ca<u>th</u>erine, too<u>th</u>

48 speakers N = 3470


wordlists (n = 951)



TH-fronting emerged in 1950s (National Service) mobility for non-standard speakers

Stuart-Smith et al (2007)



Stuart-Smith et al (2007)



### Local

- social practices in close-knit networks
- class-based language ideologies

Supralocal

- strong engagement with TV dramas
- contact with English beyond Glasgow



Stuart-Smith et al 2007; Stuart-Smith et al (2013)















Anglo-English GOOSE/FOOT vowels have fronted over 20<sup>th</sup> century (e.g. Harrington 2007)

Has Glasgow BOOT followed a similar trajectory?



## Sample: BOOT over time



## Three time points: 1916/17, 1970s, 2000s middle-aged; young male speakers acoustic analysis

e.g. full, fool, goose, foot

38 speakers N = 7884

## Sounds of the City

- Search/extraction/automatic F1 & F2 measures in LABB-CAT (mean from 3 points across vowel)
- data reduction
- ≻7488 tokens

Berliner Lautarchiv

- hand-correction of all segment boundaries
- Search/extraction/automatic F1 & F2 measures
- hand-checked formant measures
- ≫396 tokens

Lobanov normalization; LME in R

Differences in recording quality in subsample of corpus e.g. Signal to Noise Ratio (SNR)



Influence of recording quality on formants

- Signal to Noise Ratio
  - F1 of all vowels is 0.42 Bark higher in poorer SNR-environments (SNR:  $\chi^2_{(1)}$  = 10.1, p= 0.002)
  - no effect of SNR on F2
- normalized vowels using Watt-Fabricius, Nearey and Lobanov methods
- Lobanov-normalized measures no longer show effect of SNR on F1

BOOT over time

1 = older speakers born in 1890s, recorded in 1970s

(n=265)



BOOT over time

2 = older-0 /i/ speakers born 1 2 9.9 0 in 1920s, normalized F1 (lobanov) le/ recorded in *lol* 0.0 2000s 9. 0 /oh/ (n=751) la/ <del>,</del> Ω. 1.0 0.5 0.0 -0.5 -1.0

3 = adolescent speakers born in 1960s, recorded in 1970s

(n=128)

BOOT over time



4 = adolescent speakers born in 1990s, recorded in 2000s

(n=226)

BOOT over time



X = young adult speakers born in 1890s, recorded in 1910s

(n=56)

BOOT over time



COT over time

1 = older speakers born in 1890s, recorded in 1970s

(n=278)



COT over time

2 = older speakers born in 1920s, recorded in 2000s

(n=568)



COT over time

3 = adolescent speakers born in 1960s, recorded in 1970s

(n=146)



COT over time

4 = adolescent speakers born in 1990s, recorded in 2000s

(n=237)



COT over time

X = young adult speakers born in 1890s, recorded in 1910s

(n=32)



GOAT over time

1 = older speakers born in 1890s, recorded in 1970s

(n=180)



GOAT over time

2 = older speakers born in 1920s, recorded in 2000s

(n=386)



GOAT over time

3 = adolescent speakers born in 1960s, recorded in 1970s

(n=169)



GOAT over time

4 = adolescent speakers, born in 1990s recorded in 2000s

(n=153)



GOAT over time

X = young adult speakers born in 1890s, recorded in 1910s

(n=25)



Glasgow BOOT vowel was already front, but lowered over 20<sup>th</sup> century

not like Anglo-English



Why?

BOOT lowering is part of a Glasgow-internal vowel pull chain

**BOOT lowered** 



BOOT lowering is part of a Glasgow-internal pull chain

**BOOT lowered GOAT raised** 



BOOT lowering is part of a Glasgow-internal pull chain

BOOT lowered GOAT raised COT raised

















e.g. Lawson et al (2011); Lawson et al (2018); Stuart-Smith/Lawson (2017); Soskuthy/Stuart-Smith (2020)

## social polarization in strong/weak coda /r/





## Covert (delayed) tongue gesture in weak /r/

weak /r/, e.g. *car* 



e.g. Lawson et al 2011

# Media makes Scots throw the R away

### Robin Henry

SCOTTISH nationalism may be in the ascendant but the country is beginning to lose one of its most distinctive features: its accent.

For centuries Scots have pronounced the "R" in words such as car, farm and sort but it is starting to be inaudible for some speakers north of the border, according to research by Scottish linguists.

Some blame the Anglicising influence of the media,



including BBC broadcasters who adopt English pronunciations. To use the technical term for the vanishing "R", it is the battle of "postvocalic rhoticity".

Most people in England sound the "R" in Robbie but not the one in Burns. Until recent years Scots had pronounced both but a change prompted sociolinguists at Glasgow University and Queen Margaret University in Edinburgh to investigate.

Experts used ultrasound on

### Continued on page 2

OVERSEAS PF	RICES	NEWS	3	2
WEATHER		NEWS	2	9
LETTERS		NEWS	2	6
SUDOKU	NEWS	S REVIEW	/	9
TV&RADIO		CULTURE	4	1



## 'the battle of postvocalic rhoticity'

The initial story – Sunday 19 July 2015 Sunday Times

# Rs on the way out as they stop rolling off our native tongues

#### By Fiona MacRae

IT IS as Scottish as Irn-Bru, tartan and porridge - but the rolling 'r' in our distinctive accent is dying out.

Research shows that many young Scots no longer emphasise the 'r' at the end of words such as car, bar and fur.

Working class youngsters are particularly likely to swallow the sound.

In contrast, middle-class counterparts favour an 'r' sound normally associated with American English.

What is more, the rolling 'r', associated with words such as 'broom', 'squirrel' and 'hurry' is now very rare.

Some say the change is being driven by a media saturated with English and American accents. But researchers from the

University of Glasgow and Queen Margaret University in Edinburgh say accents naturally evolve over time. They used ultrasound to reveal the tongue movements of a group of I2 and I3-year-olds as they said a range of words.

Lead researcher Professor Jim Scobble sald: "We found that some Scottish speakers delay the "r" gesture, so it's happening in silence afterwards.

'They're not losing it completely - they're still producing it. You just can't hear it the same.

'We found that one group of Scottish speakers are doing one thing with their

tongues and another group are doing something completely different.

"Speakers with a vernacular Scottish accent seem to delay their "r", making it hard to hear, and others with a less vernacular accent don't, but they also us a completely different tongue shape, one we usually associate with American English."

However, Michael Hance, director of the Scots Language Centre, said that the Angucising influence of the media is to blame. He said: 'Ninety-nine per cent of Scottish radio and TV is English and American accents, while the 88C in Scotland have a long tradition of sending people off for elocution issoars to soften their accents.

## THE RS HAS FALLEN OUT OF THE SCOTS LANGUAGE

Scientists say the younger generation are losing that rolling sound

>> PAUL WARD reporters@dailyrecord.co.uk

#### THE distinctive rolling "R" in Scottish accents is being lost, according to experts.

Older generations of Scots growled the "R" in words like "girl" and "farm" - but youngsters these days almost miss it out altogether.

Many people blame the change on TV but experts at the University of Glasgow and <u>Queen Margaret</u> <u>University</u> in Edinburgh believe it is a more natural occurrence.

They used ultrasound on a group of young Scots that allowed them to see how the tongue moves inside the mouth and shapes for words.

Sociolinguist Dr Eleanor Lawson said: "What we found is that some Scottish speakers are delaying the 'R' gesture, so it's happening in silence afterwards. "They're not losing it completely - you just can't hear it the same.

"We found that one group of Scottish speakers are doing one thing with their tongue, and another group are doing something completely different.

"Speakers with a more vernacular Scottish accent seem to delay their 'R' gesture, making it hard to hear.

"Others with a less vernacular accent don't but also use a different tongue shape, one that we usually associate with American English.

"It's not media or TV, it's a natural sound change. It seems to happen in languages all over the world over time, particularly at the end of words. There's no wrong way to say these words – just differences."
### Scottish accent doomed to extinction - and the Queen's English and BBC could be to blame

LINGUISTS claim Scots are losing their treasured accent as their distinctive rolling 'Rs' begin to vanish.

#### By OLI SMITH

PUBLISHED: 13:43, Mon, Jul 20, 2015 | UPDATED: 16:37, Mon, Jul 20, 2015



One of Scotland's treasured exports could face extinction

#### UK/national press: Anglo-Scottish identity; invoking the standard

#### Forget your Ps and Qs – what about your Rs?

#### PAUL WARD

THE distinctive rolling "R" in Scottish accents is being lost, according to experts.

Younger Scots are no longer, pronouncing the "R" in worths as forcefully as older generations, softening those such as "car", "bar" and "fur".

Older generations tended to roll the letter in words such as "girl" and "farm", but younger speakers now appear to miss the letter out altogether.

Some have suggested the change is due to softer accents on television, but experts at the University of Glasgow and Queen Margaret University in Edinburgh found it was a more natural occurrence.

Previous research found Scots had the same vocabulary and grammar as other English speakers but a different set of vowels and consonants,

Experts, led by Professor Jim Scabbie, from Queen Margaret University, investigated the latest changes by using ultrasound on a group of young Scots that allowed them to see how the tongue moves inside the mouth and shapes for words.

Sociolinguist Dr Eleanor Lawson said: "What we found is that some Scottish speakets are delaying the 'R' gesture, so it's happening in silence afterwards,

"We found that one group of Scottish speakers are doing one thing with their tongue, and another group are doing something completely different.

"Speakers with a more vernacular Scottish accent seem to delay their K' gesture, making it hard to hear, and others with a less vernacular accent don't but also use a completely different tongue shape, one that we usually associate with American English\*

Dr Lawson added 'It's not media or TV, it's more boring than that – it's just a natural sound change, It seems to happen in languages all over the world over time, particularly at the end of words."

### Scottish: correctness -> Anglo-Scottish identity



# Scottish accent changing with rolled 'R' at risk



The distinctive rolled 'R' in the Scottish accent could be on its way out, with younger Scots altering the pronunciation. Picture: Neil Hanna

#### Scotsman: 20 July (left); 22 July (right)

#### 21 juillet 2015

#### L'accent écossais se meurrrrrrrt



Les Ecossais rouleraient de moins en moins les "R". (REUTERS/Paul Hackett)

On Tuesday 21 July, the story crossed the Channel...

Une équipe de chercheurs des universités de Glasgow et Queen Margaret à Edimbourg est arrivée à la conclusion que l'accent écossais, caractérisé notamment par un roulement des "R" qui le rend parfois incompréhensible pour les étrangers,

http://bigbrowser.blog.lemonde.fr/2015/07/21/laccent-ecossais-semeurrrrrrt/?utm\_campaign=Echobox&utm\_medium=Social&utm\_source=Facebook weakened coda /r/ attributed to the 'degenerate Glasgow-Irish'



## Coda /r/ in Glasgow



# Sample Q1: when does coda /r/ weaken?



### Three time points: 1916/17, 1990s, 2000s middle-aged; young male speakers auditory analysis 38 sp

e.g. car, bett<u>er</u>

38 speakers N = 4058



... and takes off in 1980s in younger speakers

## Weakening of coda /r/



# Weakening of coda /r/



## Q2: How did the change progress?

# Sample Q2: How did the change progress?



Four time points: 1970s, 1980s, 1990s, 2000s older speakers

male; female

dynamic acoustic analysis

e.g. *car, bett<u>er</u>* 

24 speakers N = 840(Soskuthy & Stuart-Smith 2020)



## 'the drunken father'



- hand-corrected formant tracks taken in Praat
- weak /r/ shows raised F3 frequency

Lawson et al (2018)

# Q2: /r/ weakening over early 20<sup>th</sup> century



• especially in unstressed syllables in e.g. better

# Q2: /r/ weakening over early 20<sup>th</sup> century



• why is F3 high even in the **vowel** + /r/?

# Was there a change in **voice quality** over time?

## middle-aged man recorded in 1980s



boy recorded in 2000s



raised tongue body during speech production

Stuart-Smith (1999)

# Acoustic voice quality has changed over time in Glaswegian



• F3 rises over time in general in these speakers

# Original /r/ results



# /r/ results + speakers' overall F3



raising of F3 for /r/ disappears



In early 20<sup>th</sup> century, we have evidence for: weak /r/ in unstressed syllables **a shift in voice quality** 



new voice quality setting may have been parsed as weak /r/ in e.g. *bett<u>er</u>* 

e.g. Ohala (1989); Harrington et al. (2008)



# weak /r/ takes off as a segmental change, accelerated by social practices and engagement with TV

e.g. Speitel/Johnston (1983); Stuart-Smith et al (2014)





 extensive potential for geographical, social and demographic mobility over 20<sup>th</sup> century

does contact induce accent change = convergence and levelling?

- extensive potential for geographical, social and demographic mobility over 20<sup>th</sup> century
- does contact induce accent change = convergence and levelling? no
- contact seems to provoke change = divergence
- Glaswegian is becoming more, not less, distinctive, through (a few) supralocal features incorporated into a matrix of local features underoing dialect-specific changes

# and the 'fatted coo'?



# and the 'fatted coo'?



Bring forth the best claes, and pit them oan him, and put a ring on his haun, and shoes on his feet. And bring hither the fa**tt**ed coo and kill it, and let us eat and be merry, for this ma son was deid and is aleeve again.

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- Wed 25<sup>th</sup> May: Lecture 4 Speech over space and time (in Scotland)

# Speech and Society resources

- Lecture powerpoint slides
- Reference lists
- Papers

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# **Any questions?**