What is typicality? Salience and the vernacular

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Introduction

- Coupland (2016: 414) Labov's determining sense of the vernacular, referring to a particular, community-specific, bounded, baseline, class-linked, stigmatised, urban variety

> This word [the vernacular] is commonly used to mean low, uneducated or low prestige speech, but I have tried to stabilize it as a technical term to signify the language first acquired by the language learner controlled perfectly, and used primarily among intimate friends and family members. Thus every speaker has a vernacular, some quite close to the network standard, some quite remote from it. (Labov 2006 [1966]: 86)

Vernacular and typicality

- Notion of 'typical' – can be traced back to Fischer's (1958) pre-Labovian study of use of [ɪn] or [ɪŋ] by New England schoolchildren
  - Differentiated between 'model' boy and 'typical' boy
  - 'typical' boy higher usage of [ɪn]

- Is a typical speaker one who uses more features associated with the vernacular?

Project

Vince Hughes

Thomas Kettig

Humans & Machines: Novel methods for assessing speaker recognition performance

Arts and Humanities Research Council

(AH/T012978/1)

Project aims

- Forensic interest in performance of lay listeners at speaker recognition
- Limited amount of work on recognition of unfamiliar voices
- *Humans and Machines* project aims:
  - To compare and combine human and automatic speaker recognition judgements and evaluate them on the same scales
  - To explore how human judgements are affected by cognitive biases related to criminal trials

Project aims

- Previous work has often elicited binary/Likert scale responses, which aren't comparable with e.g. automatic systems
- Requires responses in terms of both **similarity** and **typicality**
    - sociolinguistic strand of the project

- Elicit data through bespoke game-like tool, where participants are immersed in a 'jury of the future' context

JURY OF THE FUTURE

It's 2071. The justice system is now delivered by machines.

The robots are highly efficient, but errors have recently come to light.

A new trial is being held to test bringing back human juries.

Can you beat the machine and prove that justice belongs in human hands?

Continue

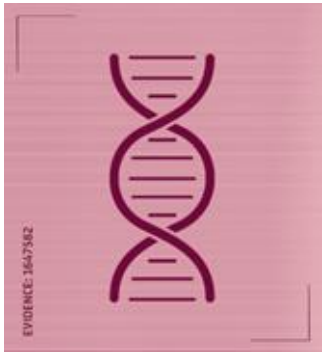
Methods

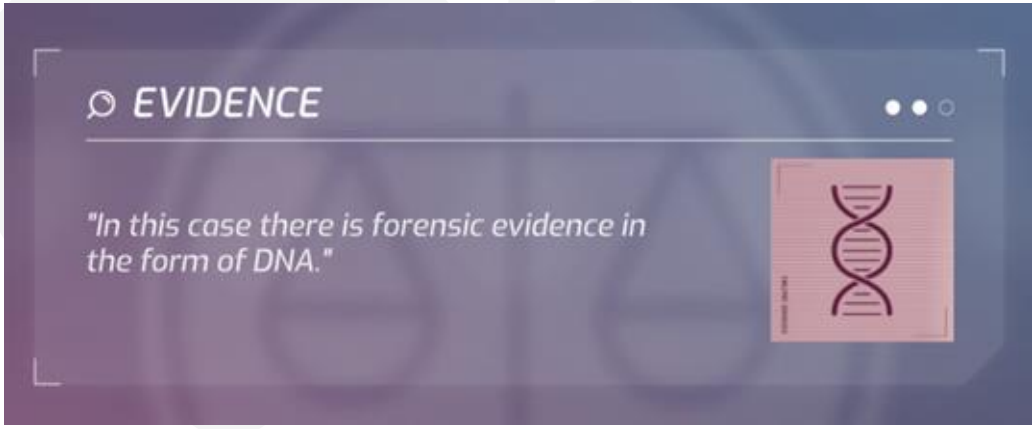
- Immersive jury game
- Participants encounter pairs of sound samples - judged:
  - Typicality of the first stimulus
  - Similarity and sameness rated after heard second stimulus
  - First gave us self-declared accent familiarity ratings / demographic info

1:100 scale for each response

Methods

1. Training level (Qualtrics style)
2. Immersive jury level
3. (a) Jury level + additional evidence





Methods

1. Training level (Qualtrics style)
2. Immersive jury level
3. (a) Jury level + additional evidence
3. (b) Jury level + expert conclusion

Verbal	Numerical
Limited	10
Moderately strong	1000
Very strong	100000

Stimuli

- Samples from **Standard Southern British English** (DyViS) & **Newcastle** and **Middlesbrough** men (TUULS)

- Newcastle- economic and cultural centre of gravity
- Middlesbrough – sub-regional centre of gravity
- People likely to be less familiar with M'b than N'c

ap 1. The North East of England (from Buchstaller et a
11:3, based on two outline images: UK and Ireland

Stimuli

- Forensically-realistic quality
  - Pairs of samples compared
  - First sample = landline phone quality (actual or noise/filter added)
  - Second sample = high quality
  - Short (10-11s)

Stimuli

- 120 pairs created

	Different speaker pairs	**Same Speaker pairs**	Total
SSBE	15	15	30
Newcastle	15	15	30
Middlesbrough	15	15	30
N'c and M'b	30	-	30

- Distributed into 15 blocks containing 8 pairs each (5 DS, 3 SS)
- 1 block presented per level
- 1505 participants

Accentedness ratings

Samples rated on 1-4 scale for accentedness (NE samples only)

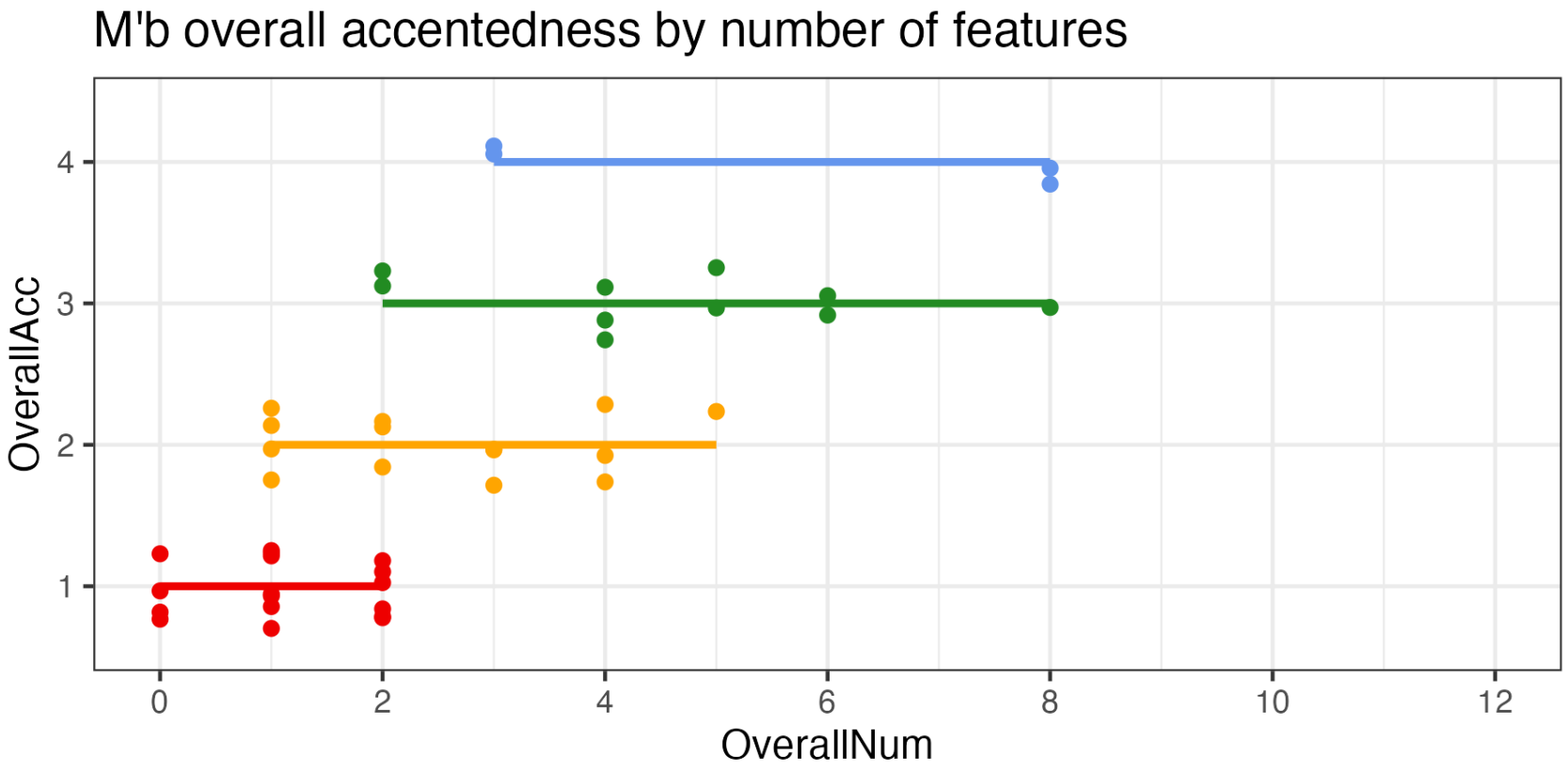
- 1-4 scale the collapsed into:
  - High (salient accent features – rating 3 and 4)
  - Low (few, if any, salient accent features – rating 1 and 2)

Not a straightforward one-to-one mapping of number of features. Other factors:

- Position, stress, loudness in sample
- Regional (but features not specially NE not included)

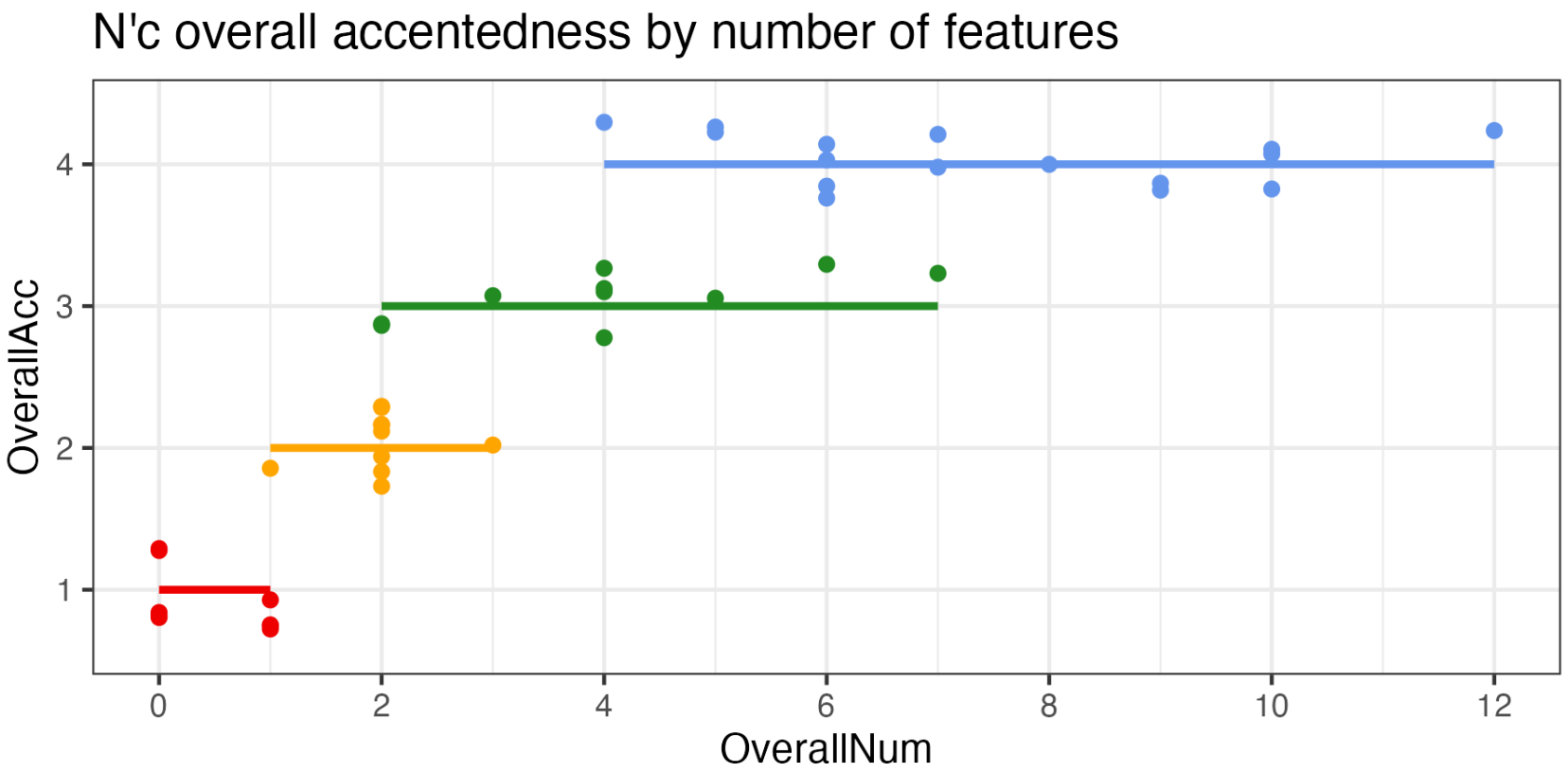
Number of features

Middlesbrough



Number of features

Newcastle



Example linguistic features

Regional features

- glottalised /p,t,k/
- t-to-r
- pre-aspirated /t/
- aye, hoyed

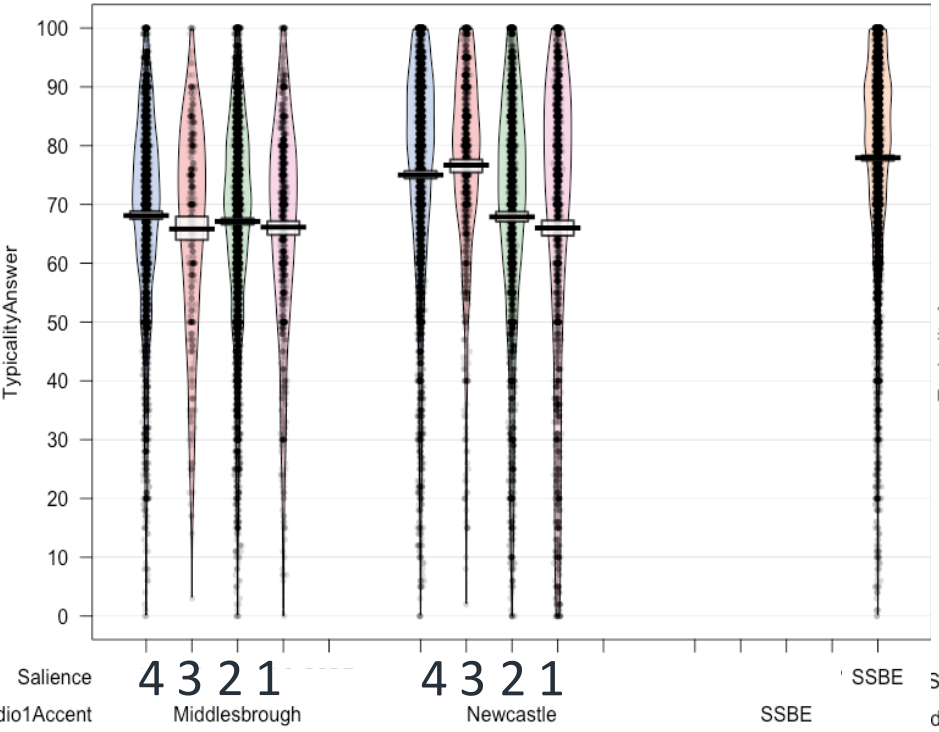
Local features

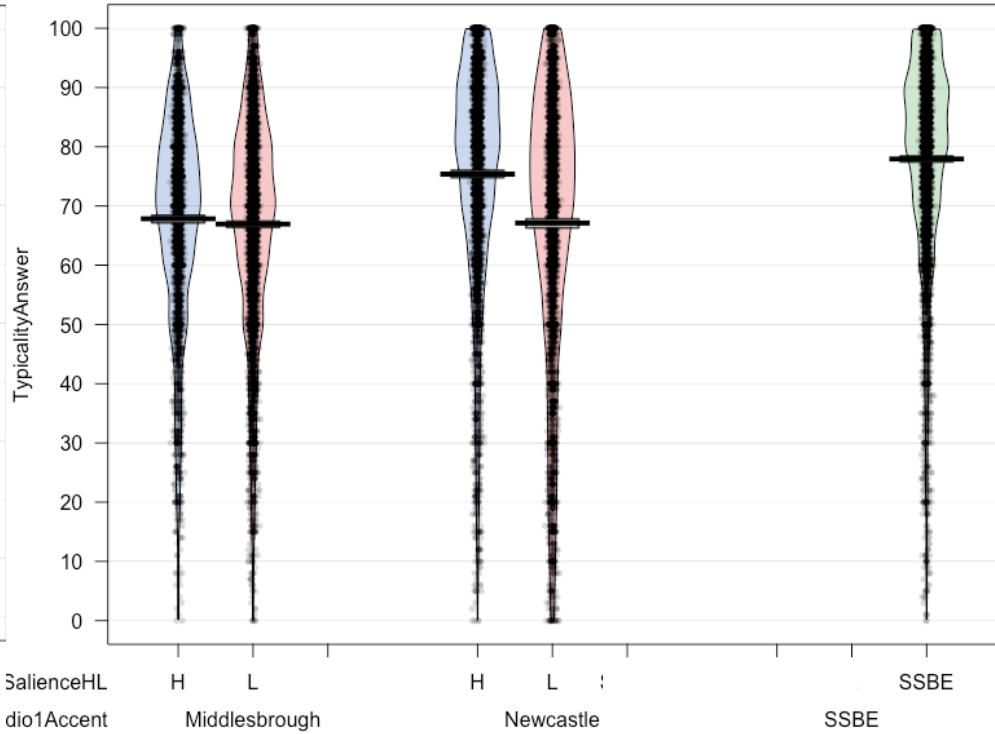
- NURSE
- START
- PRICE
- lettER
- MOUTH
- THOUGHT

Research questions

- What are the distributions of typicality responses for N'c and M'b accents compared with SSBE?
- To what extent are typicality responses affected by listener familiarity with the accent?
- To what extent are typicality responses affected by the presence/absence of regionally salient phonetic features?

Typicality


TypicalityAnswer
100
90
80
70
60
50
40
30
20
10
0
Salience
4 3 2 1
4 3 2 1
SSBE
dio1Accent
Middlesbrough
Newcastle
SSBE


TypicalityAnswer
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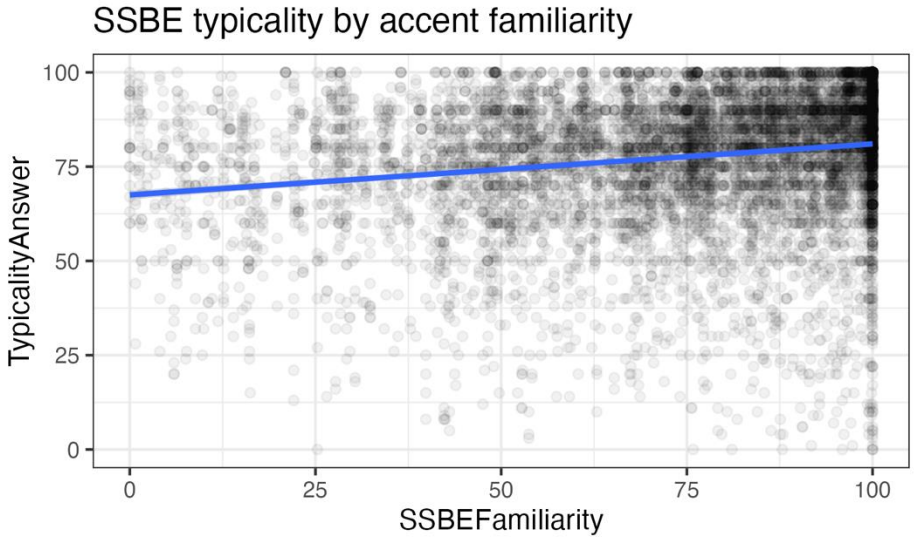
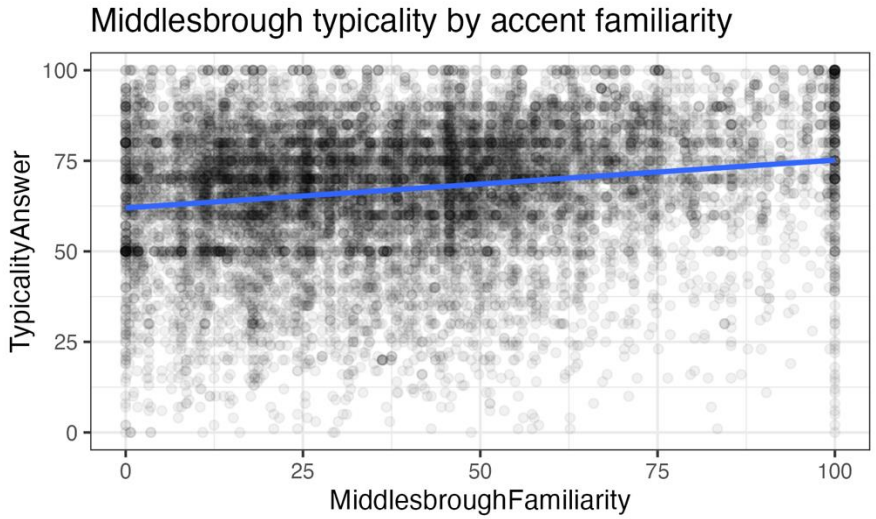
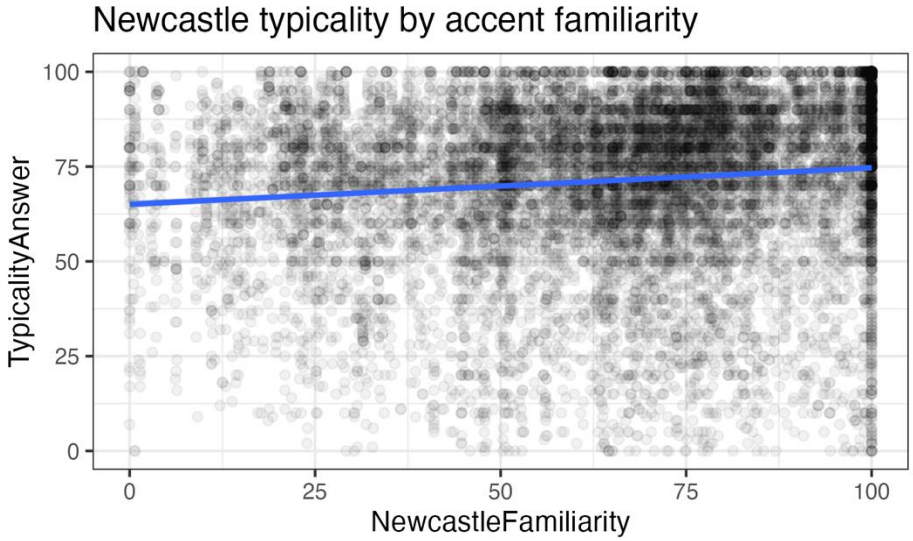
10
0
SalienceHL
H
L
H
L
SSBE
dio1Accent
Middlesbrough
Newcastle
SSBE

Typicality vs familiarity

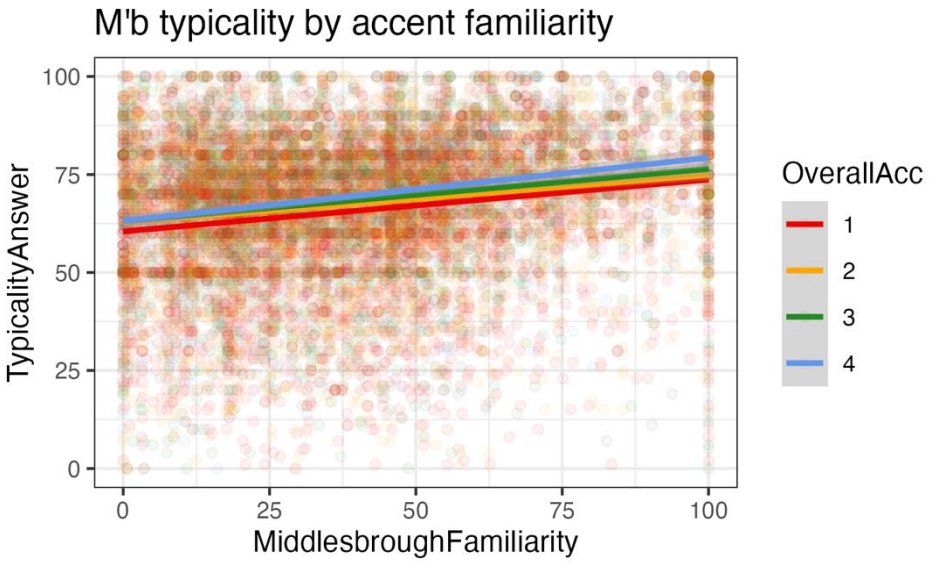


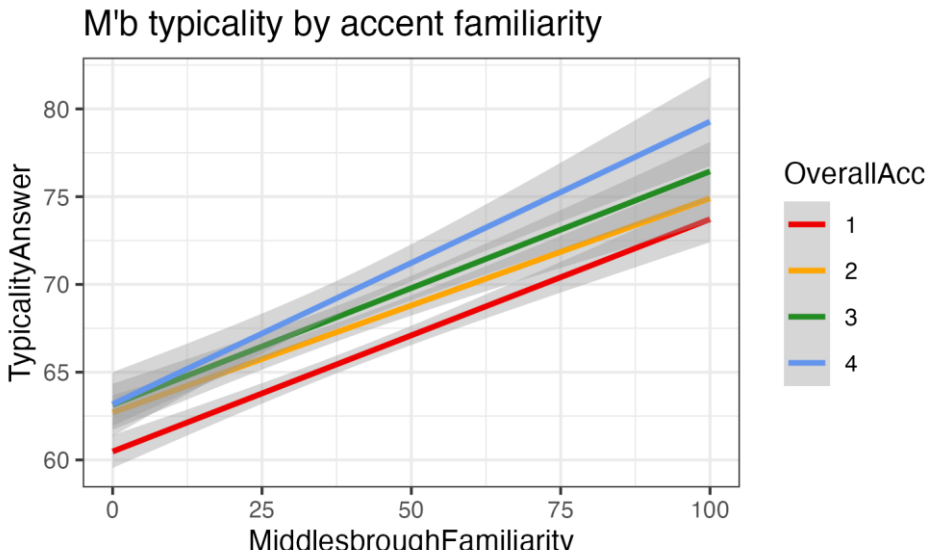


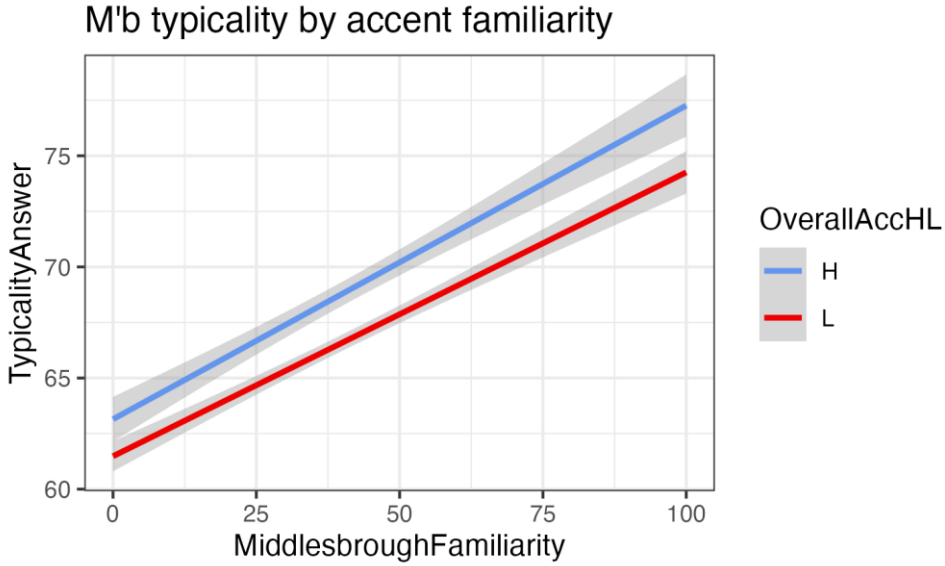


Effects of accentedness

Middlesbrough

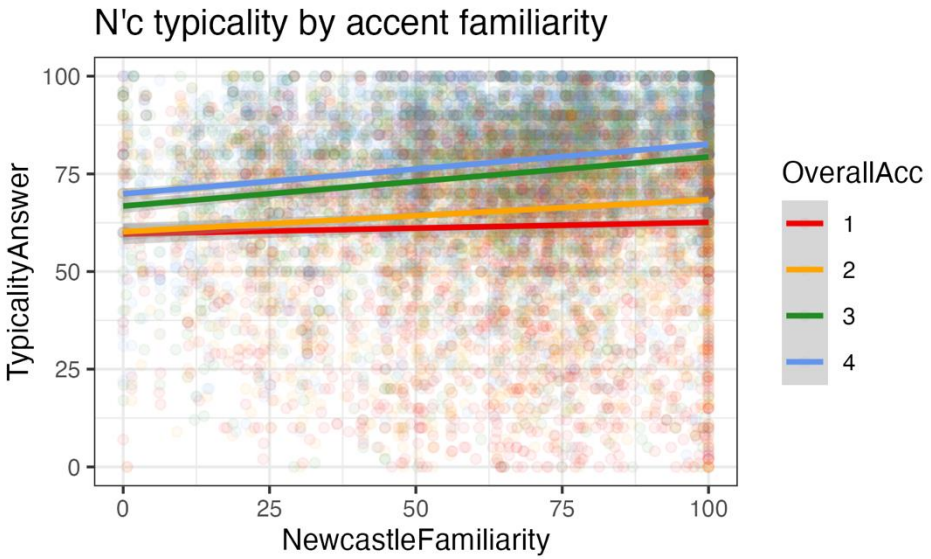


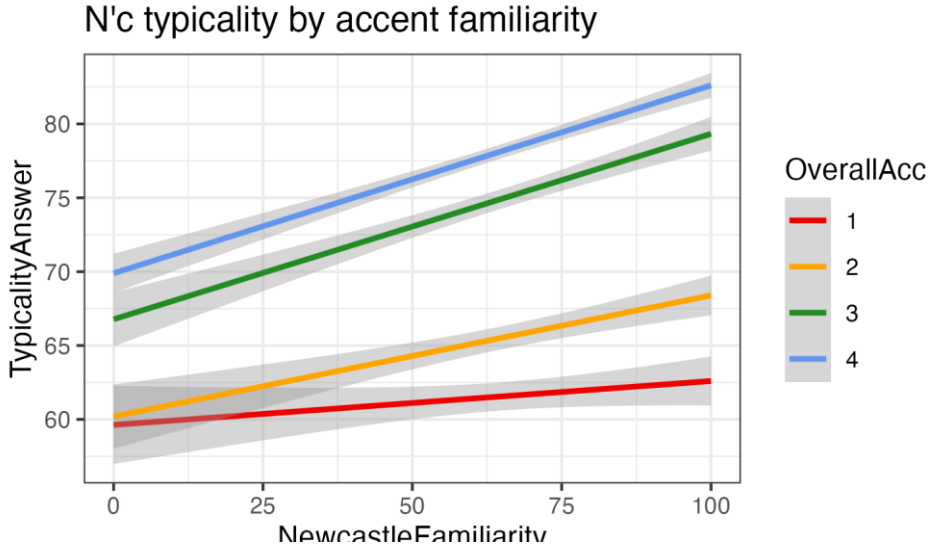


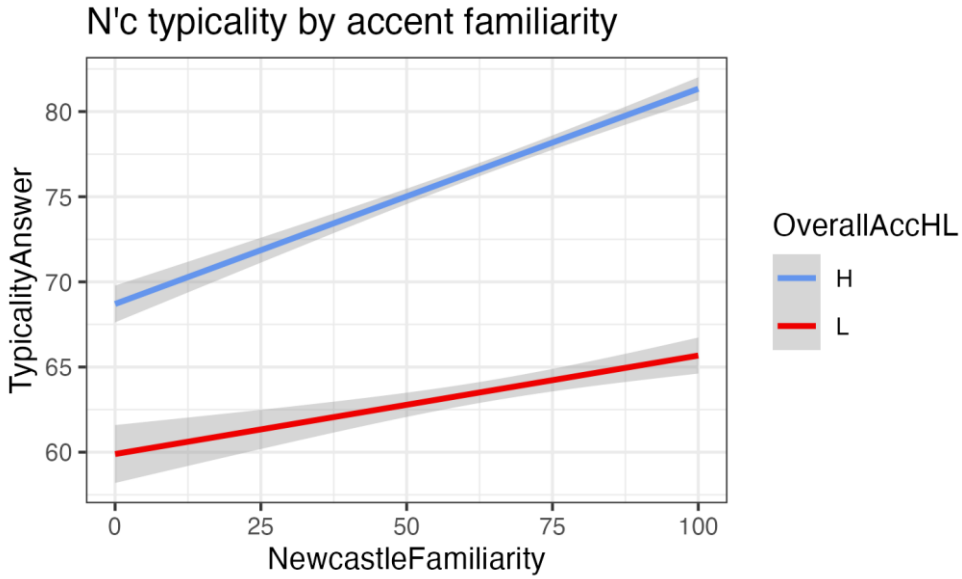


Effects of accentedness

Newcastle







Summary NE varieties

- Number of features clear relation with accentedness rating, but not a one-to-one mapping
- Clear difference in the number of features in N'c samples compared with M'b
- Helps account for differences in the perception of typicality (N'c higher rates than M'b)
- Familiarity also a factor
  - cultural dominance of N'c in the North-East contributes to general familiarity of accent and dialect nationally
  - greater general awareness of features associated with N'c than M'b, hence different responses to H and L samples for N'c, but not for M'b

SSBE

- SSBE samples
- Very homogeneous group
- Only one sample judged to have noticeable feature
- Sample also has the lowest rating for typicality

Discussion

- We have to notice features in speech in order to make an assessment of typicality

- The more features that are noticed in the regional accents, the more typical they are perceived to be

- The fewer features that are noticed in the standard accent, the more typical it is perceived to be

- 'Vernaculars' are diametrically opposed in terms of typicality

thanks

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