Pushing the Envelope of Variation
Listener Perceptions of the TRAP/BATH Split

Martha Austen
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Speakers follow complex constraints in producing sociolinguistic variants.

Both categorical constraints...

(ING)
- talking ~ talkin'
- king ~ *kin'

the envelope of variation
see also the principle of accountability (Labov 1972)
Speakers follow complex constraints in producing sociolinguistic variants.

Both categorical constraints...

(ING)
- talking ~ talkin'
- king ~ *kin'

... and gradient ones

He won't stop talkin' > Talkin' is his favorite activity.

the envelope of variation
see also the principle of accountability (Labov 1972)
Listenners are sensitive to these constraints across various tasks...

Ranbom & Connine 2007 – lexical decision task

- nasal flapping

\textbf{center} \textit{frequently flapped}
\textbf{mental} \textit{less frequently flapped}

\begin{itemize}
  \item ce[ ě ]er
  \item me[ ě ]al
\end{itemize}
Listeners are sensitive to these constraints across various tasks...

Ranbom & Connine 2007 – lexical decision task

- nasal flapping

center

\textit{frequently flapped}

\texttt{ce[\textipa{\textalpha}]er}  faster!

mental

\textit{less frequently flapped}

\texttt{me[\textipa{\textalpha}]al}
Listeners are sensitive to these constraints across various tasks...

Vaughn & Kendall 2018a – ratings of surprisal

- (ING)

![Graph showing ratings of reported surprise to hear different grammatical categories. The x-axis represents grammatical categories such as Pronoun-3, Adjective, Noun, Gerund, Progressive, and Pronoun-2. The y-axis represents ratings of reported surprise, ranging from 0 to 6. The graph includes labels for different categories such as anything, everything, and something, noting nothing as well.]
Listeners are sensitive to these constraints across various tasks...

 Vaughn & Kendall 2018a – ratings of surprisal

- (ING)
... but it's unclear whether these constraints matter for social perception.
... but it's unclear whether these constraints matter for social perception.

Vaughn & Kendall 2018b – matched guise task for “accentedness”

- (ING)
And they might matter differently depending on who's listening.

Bender 2000 – matched guise task

• copula absence in African American English
  - more frequent: *She teachin' me piano*
  - less frequent: *She my piano teacher*

• Black participants: 
  *She teachin' me piano* > 
  *She my piano teacher*

• white participants: 
  no difference
This Study

How sensitive are listeners to linguistic environment when assigning social meaning?

– (How) does this sensitivity vary based on listener experience?
The TRAP/BATH split

general US English

TRAP → æ
BATH → æ

RP and the south of England

TRAP — æ, a
BATH — a:
The TRAP/BATH split

This split is largely phonologically conditioned:
æ > ɑ: /_ voiceless fricatives*
e.g. grass, bath, laugh, classy, castle
The TRAP/BATH split

This split is largely phonologically conditioned:
\( \text{æ} > \text{ɑ}: / _ \text{voiceless fricatives}^* \)
- e.g. grass, bath, laugh, classy, castle

But some lexical exceptions:
- e.g. gas, asp, classic, hassle
The TRAP/BATH split

**Social meaning:**

backed $b[ə:]th$ associated with the south of England → posh, higher social class, more educated

(e.g. Gupta 2005; Lawrence 2014)
When your duck is actually really posh
A joke

When your duck is actually really posh

quack = [kwak]
<quark> = [kwaːk]
A joke

quack = [kwak]
<quark> = [kwa:k]

But posh people say [kwak], not [kwa:k]!
How sensitive are listeners to linguistic environment when assigning **social meaning** to the TRAP/BATH split?

- (How) does this sensitivity vary based on **listener experience** with the split?
Methods
Paradigm: Character Selection Task

Lawrence 2017
Participants

- Americans w/ less experience (n=21)
- Americans w/ more experience (n=14)
- northern Brits (n=20)
- southern Brits (n=28)
Participants

- Americans w/ less experience (n=21)
- Americans w/ more experience (n=14)
- northern Brits (n=20)
- southern Brits (n=28)

divided based on:
- visits to UK
- British friends/family
- British media consumption
Auditory Stimuli

- 6 talkers reading [a] & [ɑ:] guises
  - 4 southerners, 2 northerners
  - perceived as middle class, except for “Cockney” southerner

- 6 BATH
  - b[a]th ~ b[ɑː]th

- 12 TRAP
  - tr[a]p ~ tr[ɑː]p
  - *6 lexical exceptions (cl[a]ssic ~ cl[ɑː]ssic)

- fillers
  - 6 (ING) listening ~ listenin'
  - 6 (TH) [θ]ink ~ [f]ink

- words extracted from sentences
- vowels cross-spliced
Characters

- posh
- social climber
- working class

+ male versions
Step 1: Read Vignettes

Jane Wimbledon comes from Manchester, although nowadays she tries to hide her northern accent. Her childhood was somewhat rough, as her parents were often unemployed and living only on benefits. At age 20, she seduced a wealthy man and convinced him to marry her. Now they live in a large house in an upscale suburb of London. As her neighbors all come from upper-class backgrounds, she tries to hide her lower-class roots and can act snobbish towards those she perceives to be 'beneath her'. When she goes home to visit her family, she likes to show off her wealth by carrying designer handbags.
Step 2: Attention Check

- 5 questions
- excluded participants who missed 2 or more (n=4)
Step 3: Select Characters

CLASSIC
Predictions
Predictions: Sensitive to Linguistic Environment

- posh
- social climber
- working class
Predictions: Sensitive to Linguistic Environment

southern B[ɑː]TH

posh

social climber

working class
Predictions: Sensitive to Linguistic Environment

- **southern** 
  - B[aː]TH
  - posh

- **northern** 
  - B[a]TH
  - working class

- **social climber**
Predictions: Sensitive to Linguistic Environment

- **southern** B[ɑː]TH
- hypercorrect TR[ɑː]P
- **northern** B[ɑ]TH

**posh**

**social climber**

**working class**
Predictions: Sensitive to Linguistic Environment

- southern B[ɑː]TH
- hypercorrect TR[ɑː]P
- unmarked TR[ɑ]P
- northern B[a]TH

Images:
- posh
- social climber
- working class
Predictions: NOT Sensitive to Linguistic Environment

posh

social climber

working class
Predictions: NOT Sensitive to Linguistic Environment

southern B[ɑː]TH

posh
social climber
working class
Predictions: NOT Sensitive to Linguistic Environment

- **southern** B[ɑː]TH
- **northern** B[a]TH

**posh**
- Images of a woman, a university building, and a clock

**social climber**
- Images of a woman, a dress, and a handbag

**working class**
- Images of a woman, houses, and an Aldi sign with a cash register
Predictions: NOT Sensitive to Linguistic Environment

- southern 
  - B[a:]TH
- hypercorrect
  - TR[a:]P
- northern
  - B[a]TH

- posh
- social climber
- working class
Predictions: NOT Sensitive to Linguistic Environment

- southern B[aː]TH
- hypercorrect TR[ɑː]P
- unmarked TR[a]P
- northern B[ɑ]TH

- posh
- social climber
- working class
One more prediction

more listener experience

= 

more sensitive to linguistic environment
Results
Posh vs. working class

% 'posh' selections in [ɑː] trials

% 'posh' selections in [ɑ] trials

BATH words

TRAP words
Posh vs. working class

% 'posh' selections in [ɑː] trials
% 'posh' selections in [ɑ] trials

southern Brits

-100
-50
0
50
100

BATH words
TRAP words
Posh vs. working class

% 'posh' selections in [ɑː] trials
% 'posh' selections in [a] trials

southern Brits
northern Brits

BATH words
TRAP words
Posh vs. working class

% 'posh' selections in [aː] trials

% 'posh' selections in [a] trials

southern Brits
northern Brits
high-experience Americans
low-experience Americans

BATH words
TRAP words
Posh vs. social climber

% ‘posh’ selections in [ɑː] trials

% ‘posh’ selections in [ɑ] trials
Posh vs. social climber

% ‘posh’ selections in [ɑː] trials

% ‘posh’ selections in [a] trials

southern Brits

BATH words

TRAP words
Posh vs. social climber

% 'posh' selections in [ɑː] trials

% 'posh' selections in [a] trials

southern Brits

northern Brits

-100
-50
0
50
100

BATH words
TRAP words
Posh vs. social climber

% 'posh' selections in [ɑː] trials

% 'posh' selections in [a] trials

southern Brits

northern Brits

high-experience Americans

low-experience Americans

BATH words

TRAP words
Social climber vs. working class

% 'social climber' selections in [ɑː] trials

% 'social climber' selections in [a] trials

-100

0

50

100

BATH words

TRAP words
Social climber vs. working class

% 'social climber' selections in [ɑː] trials
% 'social climber' selections in [a] trials

southern Brits

BATH words
TRAP words
Social climber vs. working class

% 'social climber' selections in [ɑː] trials

% 'social climber' selections in [a] trials

southern Brits

northern Brits

- 50
- 100

BATH words

TRAP words
Social climber vs. working class

% 'social climber' selections in [ɑː] trials - % 'social climber' selections in [a] trials

southern Brits  northern Brits  high-experience Americans  low-experience Americans

BATH words  TRAP words
<table>
<thead>
<tr>
<th></th>
<th>sensitive to TRAP/BATH distinction?</th>
<th>associate hypercorrect TR[ɑː]P with...</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>southern Brits</strong></td>
<td>yes</td>
<td>no characters</td>
</tr>
<tr>
<td><strong>northern Brits</strong></td>
<td>yes</td>
<td>'actually posh' characters</td>
</tr>
<tr>
<td><strong>Americans</strong></td>
<td>no social meaning for these characters :(</td>
<td></td>
</tr>
</tbody>
</table>
Conclusions

• Social meaning is “leaky” (for northerners)
  - spreads beyond the phonological/lexical environment in which variation actually occurs
  - phoneme = basic unit of social meaning?
Conclusions

• Social meaning is “leaky” (for northerners)
  – spreads beyond the phonological/lexical environment in which variation actually occurs
  – phoneme = basic unit of social meaning?

• Some wild speculation:
  – This leakiness could explain why sound change often starts in just a few words or narrow phonological environments, but expands to broader environments.
Th[a:]nks!

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Posh vs. working class

% 'posh' selections in [ɑː:] trials
% 'posh' selections in [a] trials

southerners northerners high-exp. Am. low-exp. Am.

- BATH words
- TRAP - lexical exceptions
- TRAP - not exceptions
Posh vs. social climber

% 'posh' selections in [ɑː] trials

% 'posh' selections in [a] trials

southerners northerners high-exp. Am. low-exp. Am.

Orange: BATH words
Purple: TRAP - lexical exceptions
Teal: TRAP - not exceptions
Social climber vs. working class

% 'social climber' selections in [ɑː] trials

% 'social climber' selections in [a] trials

southerners
northerners
high-exp. Am.
low-exp. Am.

- BATH words
- TRAP - lexical exceptions
- TRAP - not exceptions