

# The impact of higher education on local phonology

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# Outline

## Background

- Previous work
- The variables
- The speakers

## Methodology

- Data
- Analysis

## Results

- Stable features: Split short-a and the low-back distinction
- Changes in progress: /uw/-fronting and /ey/-raising

## Discussion

- The role of social evaluation

## Higher education and sound change

- ▶ De Decker 2006
  - ▶ Speakers who leave home for college accommodate to new community norms
- ▶ Wagner 2008
  - ▶ Speakers continue to participate in local sound changes after high school
- ▶ Bigham 2010
  - ▶ Accommodation to new norms *and* continued participation in local change

# Four Philadelphia dialect features

We consider four features of the Philadelphia vowel system:

## Stable features

- ▶ The split short-a system
- ▶ The low-back distinction

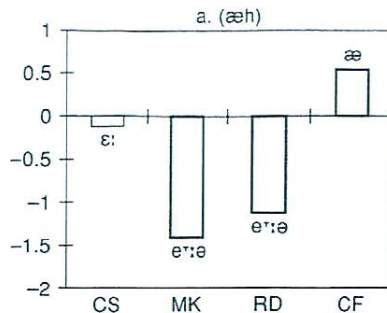
## Changes in progress

- ▶ The raising of /ey/ in checked syllables
- ▶ The fronting of /uw/ after coronal consonants

## Split short-a

- ▶ Phonemic distinction between tense /æh/ and lax /æ/ (Ferguson 1972)
- ▶ Phonetically, ranges from lax lower-mid [æ] to tense upper-mid ingliding [eə]
- ▶ Largely predictable from the phonological environment, but shows lexical and morphological irregularity
- ▶ The phonetic peripheralization of the tense /æh/ class behaves like a stable sociolinguistic variable (Labov 2001:160) and bears negative social evaluation (Wagner 2008)

# Split short-a



**Figure 1:** The negative evaluation of tense /æh/ in Philadelphia (from Labov 2001:210, Figure 6.6)

## Low-back distinction

- ▶ /oh/ in “caught” distinct from /o/ in “cot”
- ▶ Phonetically, [ɔ] in the THOUGHT class and [ɑ] in the LOT class
- ▶ In New York, extremely tense /oh/ is a recognizable and negatively-evaluated stereotype (Becker 2010, 2011)
- ▶ In Philadelphia in the 1970s, such evaluation was “directed almost entirely at the front vowel” (i.e., /æh/) (Labov 1994:343) but it’s unclear if this is still true

## Raising of /ey/

- ▶ Raising of /ey/ nucleus in Philadelphia, so that “plate” sounds more like “pleat” (Labov 2001)
- ▶ Does not occur in word-final or pre-hiatus positions, so “say” doesn’t raise towards “see”
- ▶ Typical change from below, failing to attract overt commentary



# Raising of /ey/

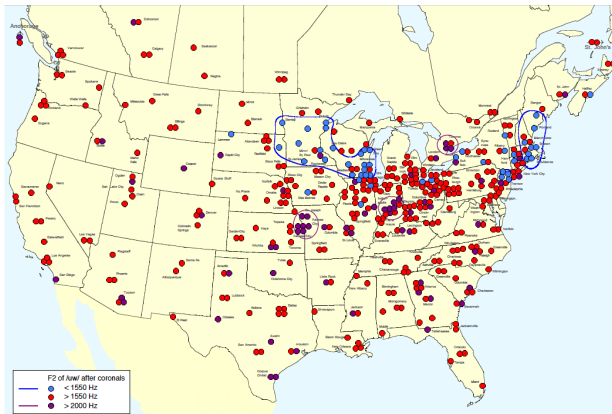


Figure 2: The raising of /ey/ in apparent time, from Fruehwald 2011

## Fronting of /uw/

- ▶ Dramatic fronting of /uw/ nucleus after coronal consonants in most North American dialects (Labov et al. 2006)
- ▶ Fronting after non-coronal consonants also occurs, but is less advanced and more idiosyncratic
- ▶ Change from below like /ey/-raising, but not localized to Philadelphia

# Fronting of /uw/



**Figure 3:** The geographic distribution of /uw/-fronting after coronals (from Labov et al. 2006:154, Map 12.1)

# The speakers

We interviewed eight speakers from two blocks in the same upper-working-class neighborhood in South Philadelphia.

## Block A

- ▶ Barbara
- ▶ Patricia
- ▶ Raymond
- ▶ Nicole

## Block B

- ▶ Michelle
- ▶ Michael
- ▶ Matt
- ▶ Dan

# Speaker classification

We'll group our speakers by the decisions they made in pursuing higher education.

We consider four categories of higher education:

- ▶ No higher education (high school diploma only)
- ▶ Community college
- ▶ Regionally-oriented university
- ▶ Nationally-oriented university

## High school education

Two participants who did not pursue higher education:

- ▶ Barbara: 42-year-old female, high school graduate
- ▶ Patricia: 65-year-old female, high school graduate

# Community college

One participant who is a current student at community college:

- ▶ Raymond: 19-year-old male, current student at the Community College of Philadelphia

## Regionally-oriented university

Three participants who attended or are attending regionally-oriented universities:

- ▶ Michelle: 22-year-old female, current student at Drexel University
- ▶ Dan: 46-year-old male, graduate of Peirce College
- ▶ Matt: 22-year-old male, spent one year at Shippensburg University



## Nationally-oriented university

- Two participants who attended a nationally-oriented university:
- ▶ Nicole: 30-year-old female, BA and MA from University of Pennsylvania
  - ▶ Michael: 20-year-old male, current student at University of Pennsylvania

# Interviews

## Interviews:

- ▶ took place in participant's homes or in quiet study rooms at university libraries
- ▶ lasted 30-60 minutes depending on the participant's availability
- ▶ used the thematic conversational modules of the Philadelphia Neighborhood Corpus (2010)
- ▶ included minimal pair tests for vowels of interest

# Data collection

Interviews were orthographically transcribed in ELAN. Vowels were measured using the FAVE suite (Rosenfelder et al. 2011):

- ▶ FAVE-align for forced phonemic alignment
- ▶ FAVE-extract for automatic formant measurement

## FAVE output

Total token counts from the eight speakers are as follows:

Feature	Total N
Short-a	862
Low-back	1,172
/ey/-raising	838
/uw/-fronting	568

With this amount of data we can accurately assess both the concentration and dispersion of our speakers' vowel classes.

# Normalization

Using the formula from the NORM suite (Thomas and Kendall 2007), vowel measurements were:

- ▶ Lobanov-normalized and
- ▶ rescaled back to Hertz-like values

# Results

We'll begin with an examination of the stable features, then look at the changes in progress.

Stable features: Split short-a and the low-back distinction

## The traditional system

We expect traditional Philadelphia speakers to have strong phonetic distinctions between /æh/ and /æ/ and between /oh/ and /o/.

Stable features: Split short-a and the low-back distinction

# The traditional system

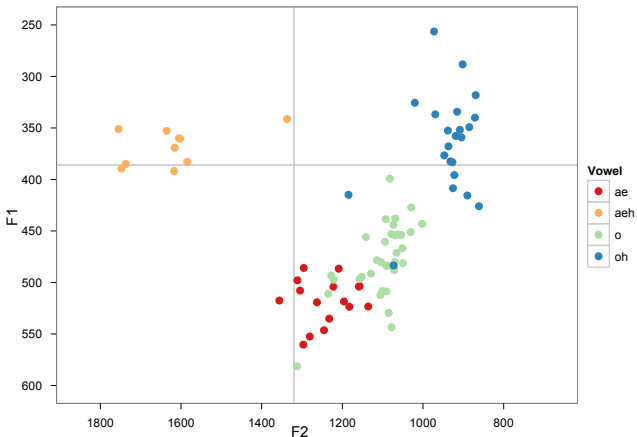


Figure 4: Barbara's short-a and low-back distinctions.



# The traditional system

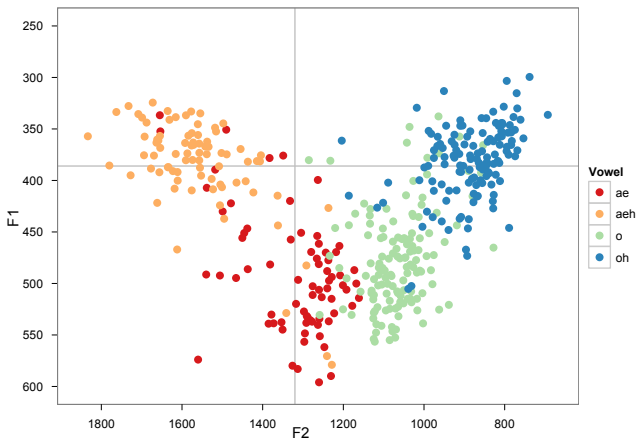


Figure 5: Patricia's short-a and low-back distinctions.

Stable features: Split short-a and the low-back distinction

## Community college

The speaker attending community college follows the traditional pattern exactly.

Stable features: Split short-a and the low-back distinction

## Community college

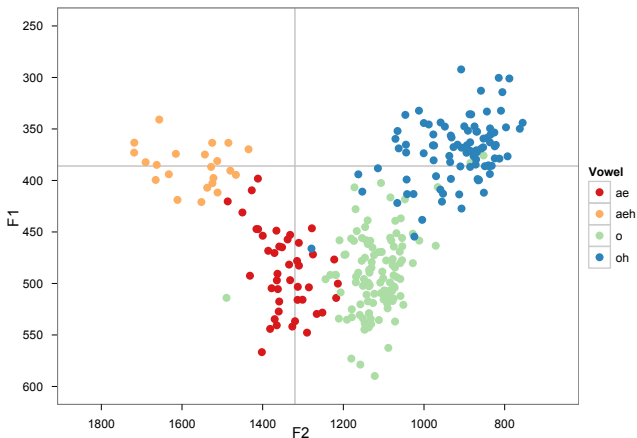


Figure 6: Raymond's short-a and low-back distinctions.

Stable features: Split short-a and the low-back distinction

## Regionally-oriented university

Among the speakers who are attending or attended regionally-oriented universities, the short-a classes show a moderate degree of overlap. The distinction between /oh/ and /o/ is maintained.

Stable features: Split short-a and the low-back distinction

# Regionally-oriented university

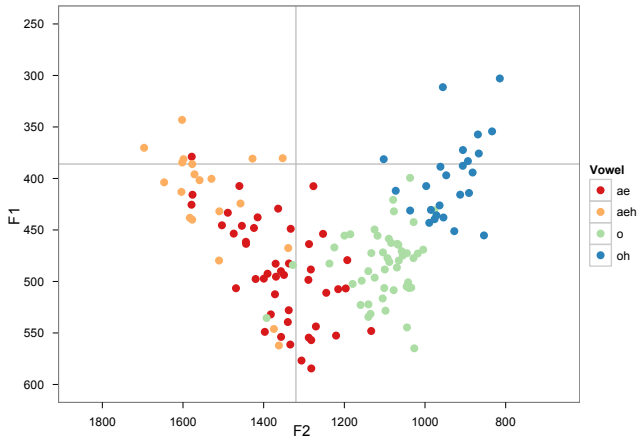


Figure 7: Michelle's short-a and low-back distinctions.

Stable features: Split short-a and the low-back distinction

## Regionally-oriented university



Figure 8: Matt's short-a and low-back distinctions.

Stable features: Split short-a and the low-back distinction

## Regionally-oriented university

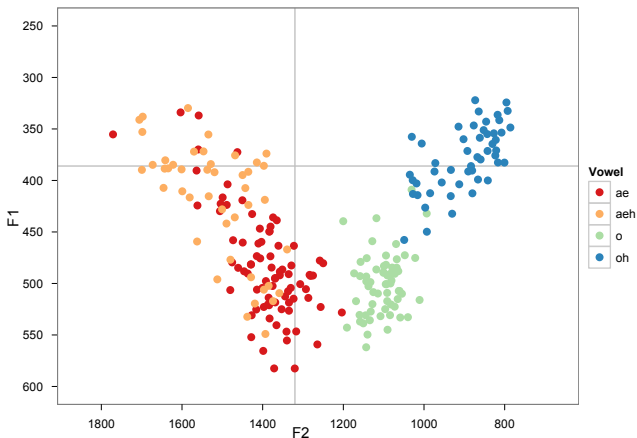


Figure 9: Dan's short-a and low-back distinctions.

Stable features: Split short-a and the low-back distinction

## Nationally-oriented university

Finally, the speakers who are attending or attended a nationally-oriented university show nearly complete overlap between /æh/ and /æ/. Even more surprisingly, the low-back distinction shows the same degree of overlap.

T-tests and minimal pair tests indicate that this overlap is phonetic, with the speakers maintaining the phonemic distinction.



Stable features: Split short-a and the low-back distinction

## Nationally-oriented university

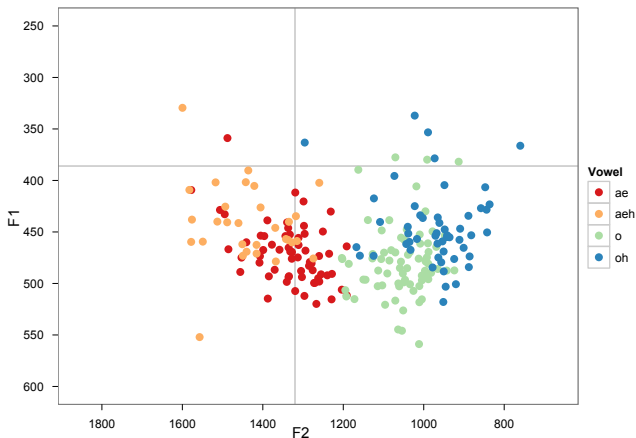


Figure 10: Michael's short-a and low-back distinctions.

Stable features: Split short-a and the low-back distinction

## Nationally-oriented university

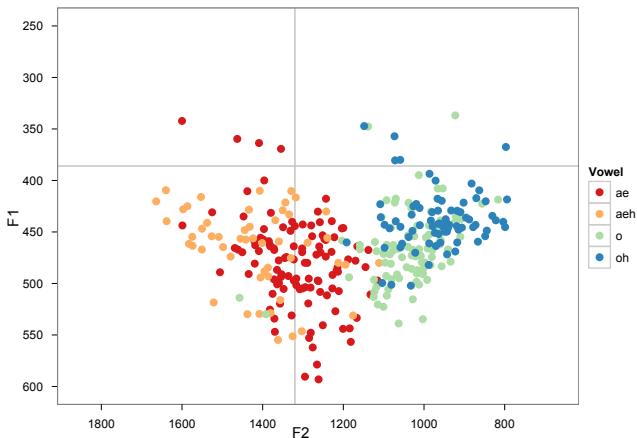


Figure 11: Nicole's short-a and low-back distinctions.

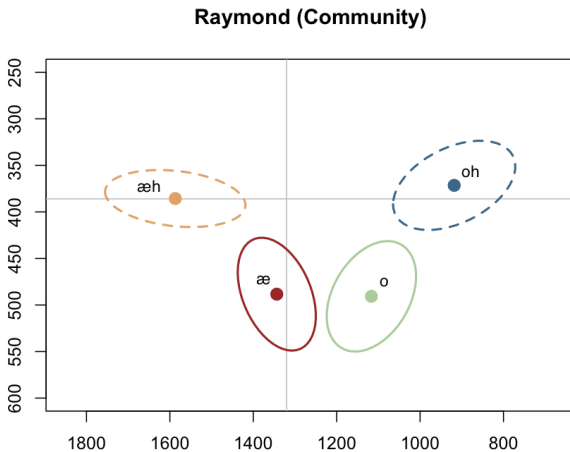


Figure 12: Stable features; means & 95% confidence ellipses.

Stable features: Split short-a and the low-back distinction

### Michelle (Regional)

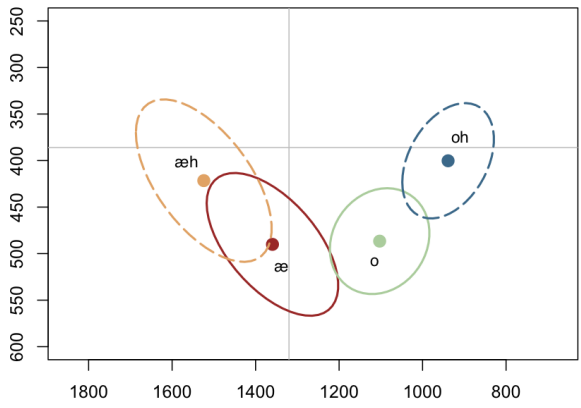


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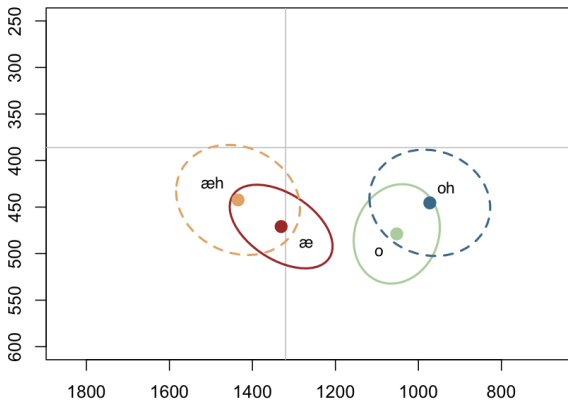
**Michael (National)**

Figure 12: Stable features; means & 95% confidence ellipses.

## Stable features: Split short-a and the low-back distinction

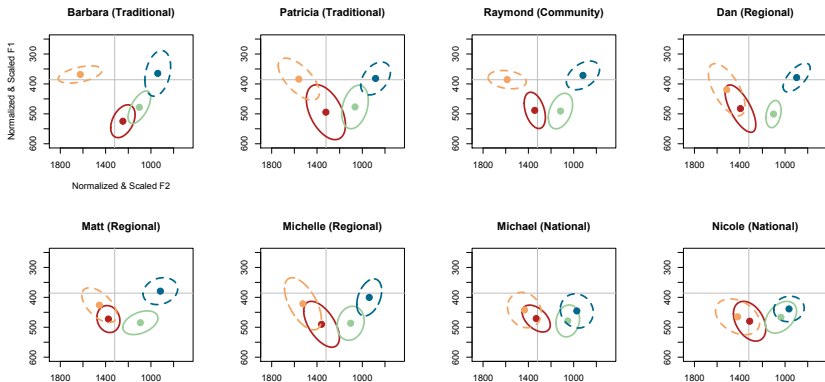


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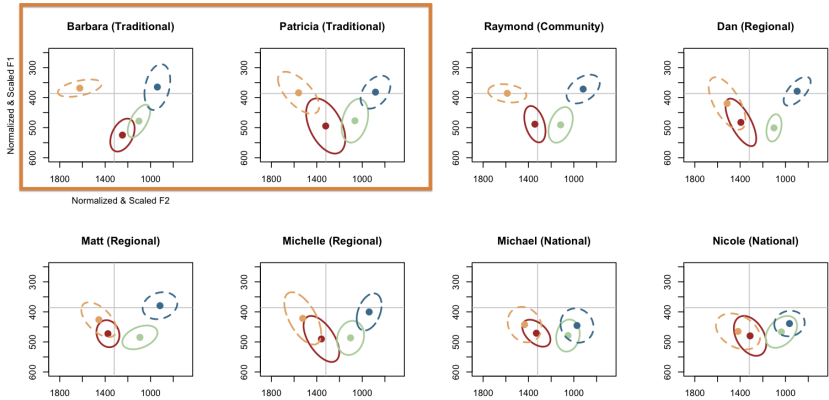


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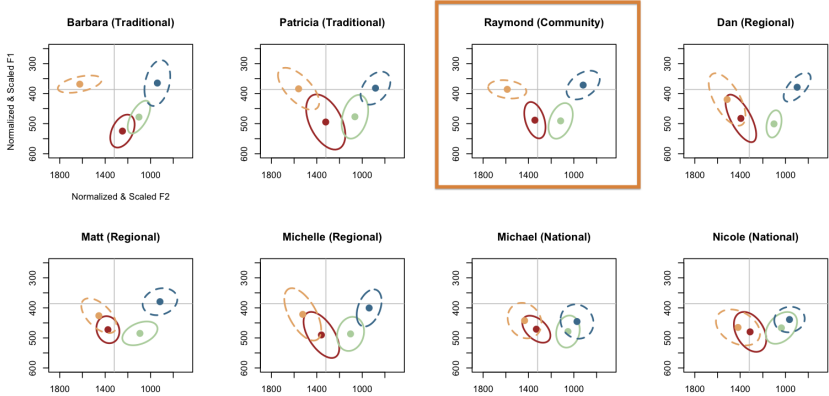


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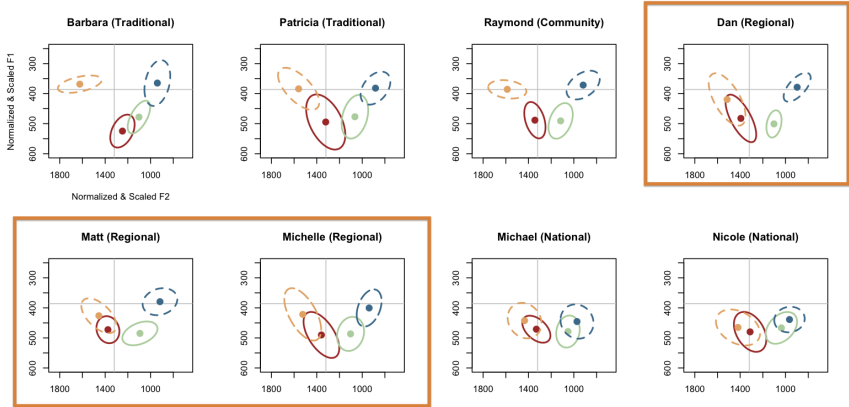


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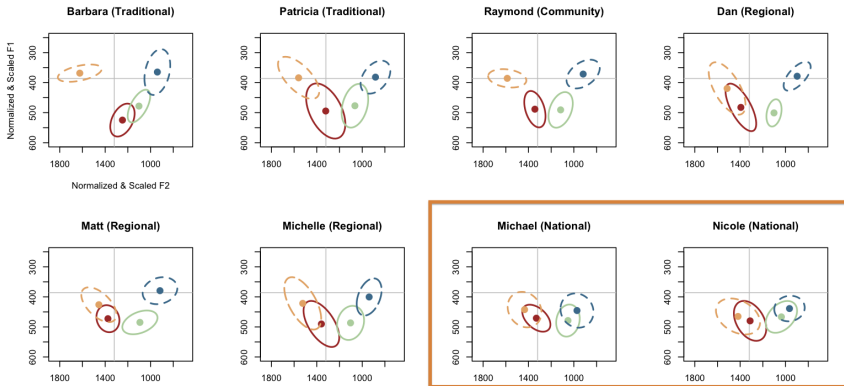


Figure 13: Stable features; means & 95% confidence ellipses.

# Speaker means

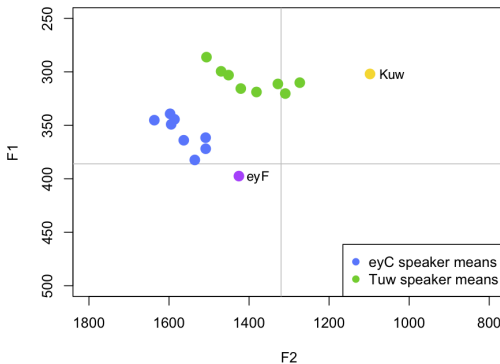


Figure 14: Changes in Progress: /uw/-fronting and /ey/-raising.

# Speaker means

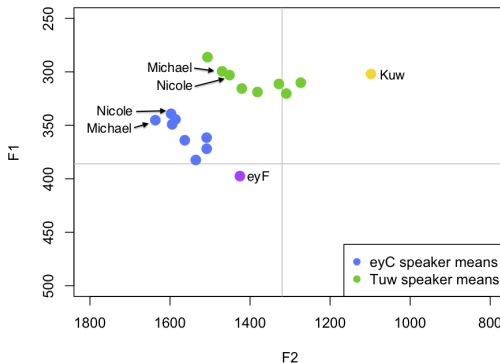


Figure 14: Changes in Progress: /uw/-fronting and /ey/-raising.

# Discussion

How can we account for the fact that higher education affects different variables differently?

# The role of social evaluation

Social awareness plays an important role in determining which variables are subject to correction.

Speakers at higher levels of higher education modulate their speech away from Philadelphia features that have a negative social evaluation (/æh/), but not from features below the level of consciousness (/uw/ and /ey/).

# The role of social evaluation

It appears that in the case of /æh/ the retreat from marked local features is not a wholesale rejection of the local accent, but rather a gradient sociolinguistic phenomenon.

Different degrees of attenuation of the short-a distinction are associated with different types of institutions. This is consistent with the stylistically-induced correction that has been observed for /æh/ (Labov 2001:79) and indicates a social motivation.

# The role of social evaluation

Although Nicole and Michael show correction of /oh/ just as extreme as for /æh/, the speakers affiliated with regional universities do not correct /oh/ in the same way.

We suggest that /oh/ has only recently acquired social salience and is therefore slower to respond to socially-motivated correction than /æh/.



## The role of social evaluation

In contrast, /ey/-raising and /uw/-fronting are not sufficiently salient to invite correction, just as they do not attract overt commentary.

Nicole and Michael, who correct /æh/ so thoroughly, are in the vanguard of these changes, just as we expect given their age.

This is consistent with Wagner's conclusion that "when speakers have no social incentive to withdraw from a change, they will continue to move along with the rest of the community" (2008:208).

# Conclusion

Measures of SEC generally differentiate education in terms of years of schooling, and sociolinguists have tended to follow suit.

We refine our understanding of the impact of higher education on local features by differentiating between different types of educational institutions to show that the effect of a college education is not uniform.

## Conclusion

We've shown that socially-salient features of the local dialect are subject to correction under the influence of higher education, particularly at less locally-oriented institutions.

We've also shown that, similar to Wagner's (2008) findings, speakers continue to participate in local changes from below after high school.

So, as in Bigham 2010, speakers are able to simultaneously accommodate towards supralocal norms and participate in ongoing changes in their local speech community.

# Acknowledgements

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