#go awn: Sociophonetic Variation in Variant Spellings on Twitter

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Outline
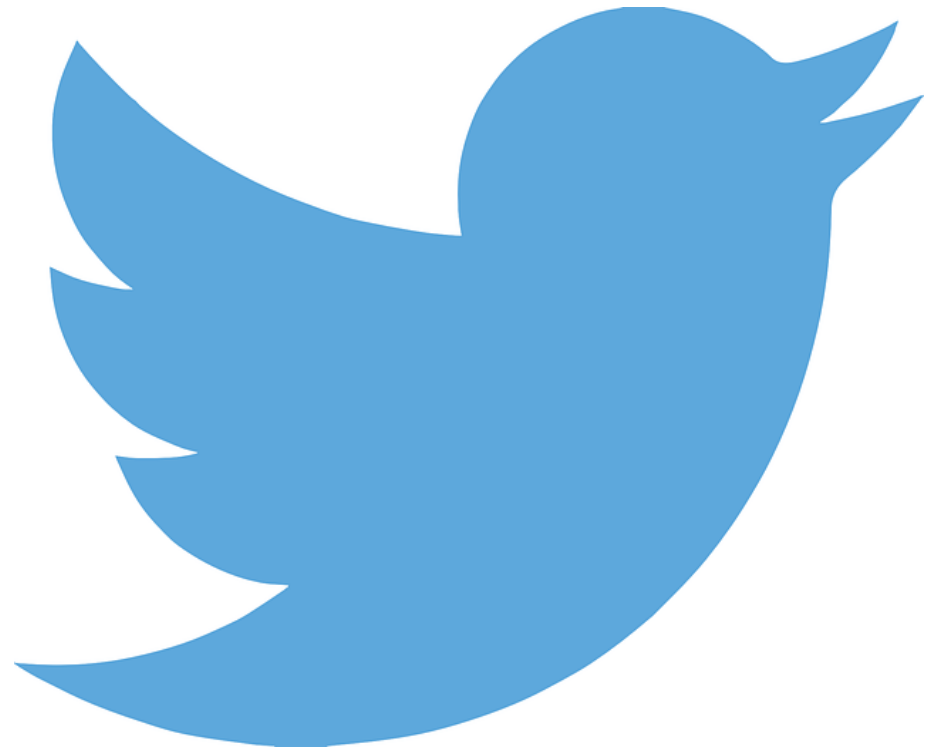
1) Research Questions

2) Background

3) Southern American English

4) Scottish English

5) Conclusion

Outline

1) **Research Questions**

2) Background

3) Southern American English

4) Scottish English

5) Conclusion

Research Questions

- Can we apply variationist methods to Twitter data?

- Do Twitter users use variant spellings to encode sociophonetic variation?

- How do variant spellings interact with style?

Outline

1) Research Question

2) **Background**

  – Computer Mediated Communication & Variationist Sociolinguistics

  – Advantages of Twitter Data

  – Variant Spellings

3) Southern American English

4) Scottish English

5) Style

6) Conclusion

CMC &
Variationist Sociolinguistics

- Relatively few variationist studies of computer mediated communication (CMC)

- Two main reasons (Androutsopoulos 2006)

  – Unreliable or missing demographic information

  – Lack of phonetic/phonological information

- But...

CMC & Variationist Sociolinguistics

- Variation in computer mediated communication is systematic and mirrors that found in speech

- This has been shown for:

  - Text messaging (Thurlow & Brown 2003)

  - Internet Relay Chat (IRC) (Siebenhaar 2006)

  - Blogs (Herring & Paolillo 2006)

  - Instant messaging (Tagliamonte & Denis 2008)

  - Twitter (style accommodation) (Danescu-Niculescu-Mizil et al. 2010)

- Linguistic variation can also be used to identify user demographic information (Rao et. al 2010)

Using Twitter Data

Pros:

- Large quantity of data already available
- Fast data collection
- Reproducible research
- Limits the effects of the Observer's Paradox (Labov 1972)

Cons:

- Limited demographic information
- Limited control over data production
- Too much data ("firehose")
- No phonetic data available

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Variant Spellings

- Non-standard orthographic representations of words

- Also called "dialect orthography" (Krapp 1919)

- Spelling in CMC contexts is more variable, allowing for identity construction using variant spellings (Sebba 2003)

- Does it encode sociophonetic variation?

Advertising image used by the Center for the Psychology of Women in Seattle. Image retrieved from http://psychologyofwomen.com/wings/ on April 21, 2015.

Variant Spellings

- Possibilities:
- Variant spellings are treated like lexical items with a different meaning than the standard spelling
  - Examples:
    - "go awf": expression of approval and solidarity, used mainly by African American women (author's impression)
    - "hawt": note that /hɑt/ is not produced as /hɔt/ by speakers without the low back merger (Labov, Ash & Boburg 2005)
- Variant spellings are used during style shifting as a way of encoding sociophonetic variation and can be extended to new lexical items
  - Examples:
    - "spelunkin": used as song title: "Monster Spelunkin" (Tran & Velema 2014) . Unlikely to be a separate lexical item.

Outline

1) Research Question

2) Background

3) **Southern American English**

   – Methodology

   – Findings

4) Scottish English

5) Conclusion

Methodology

- One well-studied sociophonetic variable with a clear alternate spelling chosen

- High frequency words with that variable selected

- TwitteR package (Gentry & Gentry 2014) and Twitter public API used to find tweets which contained variant spellings of selected variable in high-frequency words

- Tweets sorted by hand

- Other variant spellings marked by hand

  - Do they contain other sociophonetic variables?

  - Do they pattern together in the same way they have been observed to in speech?

Methodology

- One well-studied sociophonetic variable with a clear alternate spelling and unpredictable distribution chosen
  - Distinction between /ɑ/ and /ɔ/, with /ɔ/ spelled "aw"
  - For merged speakers, not possible to guess which is /ɔ/, as in "hawt"
  - Low back merger is a sociolinguistic marker of Southern American English and African American English (Labov, Ash & Boburg 2005)
- High frequency words with that variable selected
  - All of the 100 most-frequent English words with /ɔ/ form slected using the CMU pronouncing dictionary (Weide 1998)
- Twitter public API used to find recent tweets which contained variant spellings of selected variable in high-frequency words
 - Code available on author's github page
- Continued...

Methodology

- Tweets sorted by hand
  - Removed tweets where the search variable occurred in the following:
    - Foreign words
    - Names/proper nouns
    - Universal resource locater (URL)
    - Clear typos:
      - "Awn thanks Merleen" for "Aww thanks Merleen" rather than "On thanks Merleen"
  - 74 tweets remained
- Other variant spellings marked by hand
  - Do they contain other sociophonetic variables?
  - Do they pattern together in the same way they have been observed to in speech?

Results

- 50% of tweets contained more than one sociolinguistics variables

- Other variables:
  - Th-stopping
  - G-dropping
  - R-lessness
  - Cluster reduction
  - /ai/ monophthongization

- Consistent with features found in Southern American and/or African American speech (Labov & Boburg 2005)

Number of Tweets With Varient Spellings in Addition to "aw"
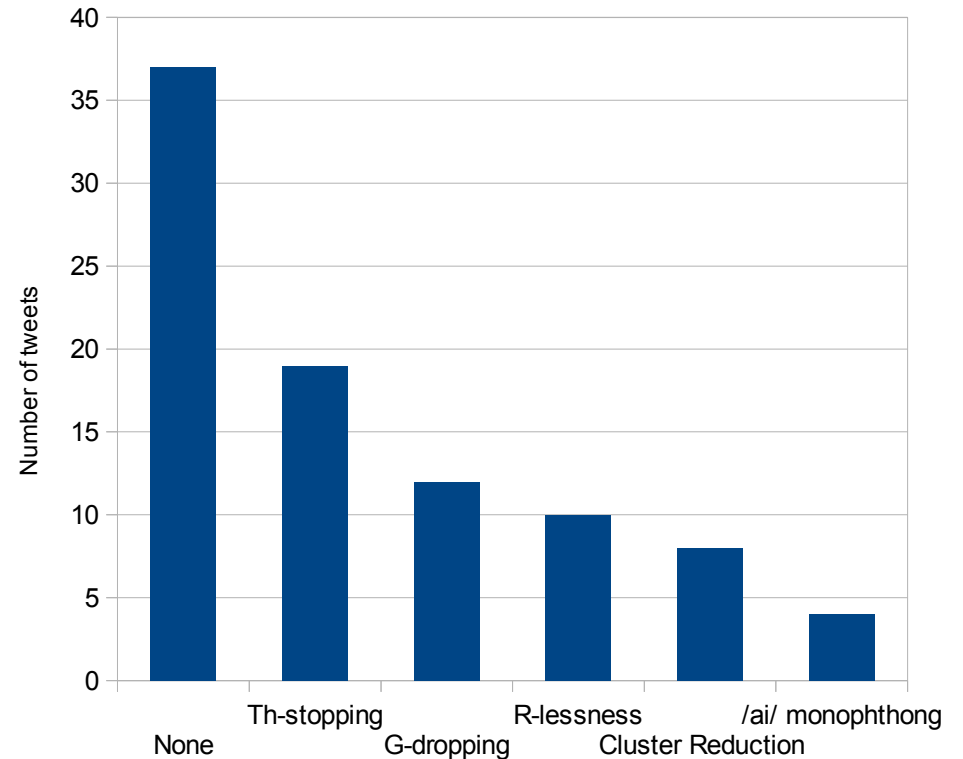
Results

Example:

Hype hayed foah dat becawse it was 8 bucks foah 2 yeahs and w da jets i like readin about da prospects ogay (JPG 2015)

"I paid for that because it was eight bucks for two years, and with the Jets [American football team] I like reading about the prospects, okay?"

- /ɔ/
- Th-stopping
- G-dropping
- R-lessness
- /ai/ monophthongization
  - Perhaps "hype"? "Like" is not
- Other
- Abbreviation

Results

- It seems that Twitter users are using multiple variant spellings together to encode phonetic variables

  - Consistent with phonological rather than lexcial use

  - Example: "hype hayed" returns one Google result

- This could be limited to one dialect, though

- Convergent findings are needed to verify the methodology

Outline

1) Research Question

2) Background

3) Southern American English

4) **Scottish English**

   – Methodology

   – Findings

5) Conclusion

Methodology

- One well-studied sociophonetic variable with a clear alternate spelling chosen

- High frequency words with that variable selected

- Twitter API used to find tweets which contained variant spellings of selected variable in high-frequency words

- Tweets sorted by hand

- Other variant spellings marked by hand

Methodology

- One well-studied sociophonetic variable with a clear alternate spelling chosen

  - [du] vowel produced [de] (Stuart-Smith 2004), commonly spelt "dae"

- High frequency words with that variable selected

  - All [u] words in the fifty most frequent English words (Davies 2011)

- Twitter API used to find tweets which contained variant spellings of selected variable in high-frequency words

- Tweets sorted by hand

  - 45 tweets remaining

- Other variant spellings marked by hand

Results

- 84% contained more than one variant spelling

- Average of 3 variant spellings per tweet

- Features:
  - $[u] \rightarrow [ʉ]$
  - $[ai] \rightarrow [æ]$
  - [l] vocalization: "fitba"
  - [ʊ] variant spellings
  - [ɔ] variant spellings
  - $[ei] \rightarrow [i]$

- Consistent with features of Scottish Standard English (Stuart-Smith 2004, Renni 2001)

Number of Tweets by Number of Variant Spellings

"tae", "dae", "yae" and "whae"
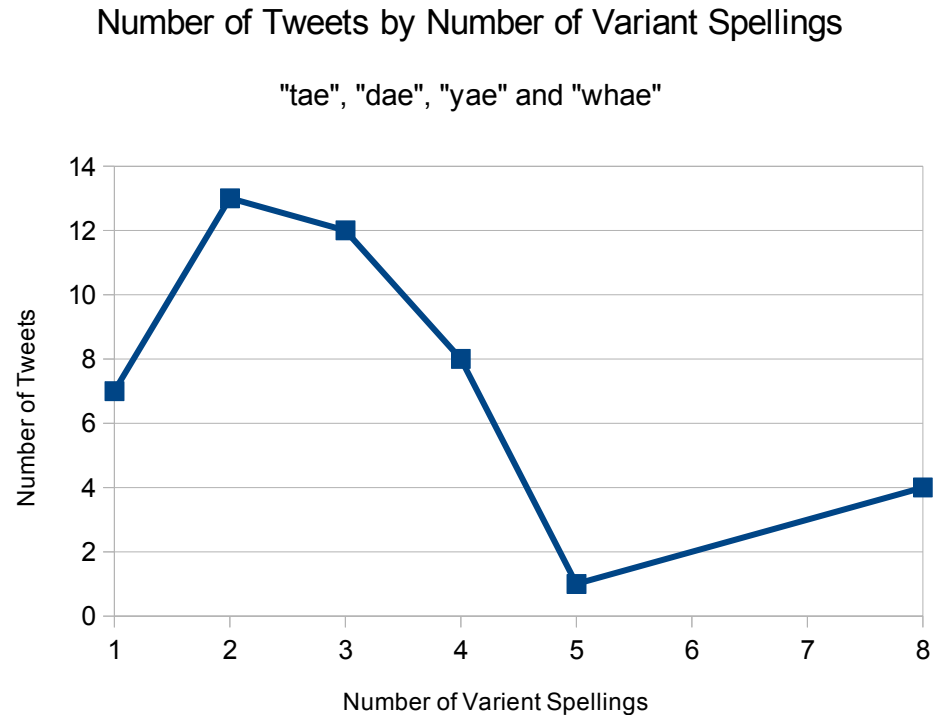
Results

Example:

dae ye ever look back oan how much time ye wasted oan someone nd wonder why naeone punched u in the heed (bj 2015)

"Do you ever look back on how much time you wasted on someone and wonder why no one punched you in the head?"

- – [du] → [de]
- – [u] → [ʉ]
- – [ei] → [i]
- – [ɔ]
- – Abbreviation

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5) **Conclusion**

- Method
- Style

Conclusion

- Do Twitter users use variant spellings to encode sociophonetic variation?

  - Yes, the use of variant spellings pattern with the sociophonetic variation observed in speech

- Can we apply variationist methods to Twitter data?

  - Yes! The method discussed here presents a principled way of looking at how Twitter users represent sociophonetic variation

  - Can be used to verify metalinguisitc awareness

Conclusion: Style

- How does this interact with style?

- Case study: Twitter user BradleyKirkwood
    - https://twitter.com/BradleyKirkwood
    - 100 most recent tweets on April 23, 2015

Screenshot of BradleyKrikwood's Twitter Profile taken April 23, 2015.

Conclusion: Style

- Tweets marked for use of variant spellings and topic by hand

- Most tweets used at least one variant spelling (64/100)

- Topic had a significant effect on variant spelling use
  - X^2 (6, N = 91) = 25.53, p <.001

- Use of variables shift with style
  - Sociolinguistic markers or stereotypes, not indicators (Labov 1972)
  - Performance registers? (Schilling-Estes 1998)

- Rich area for future research

Use of Variant Spellings by Topic

Sorted by proportion of use

Number of tweets

■ No Variant Spellings
■ Variant Spellings
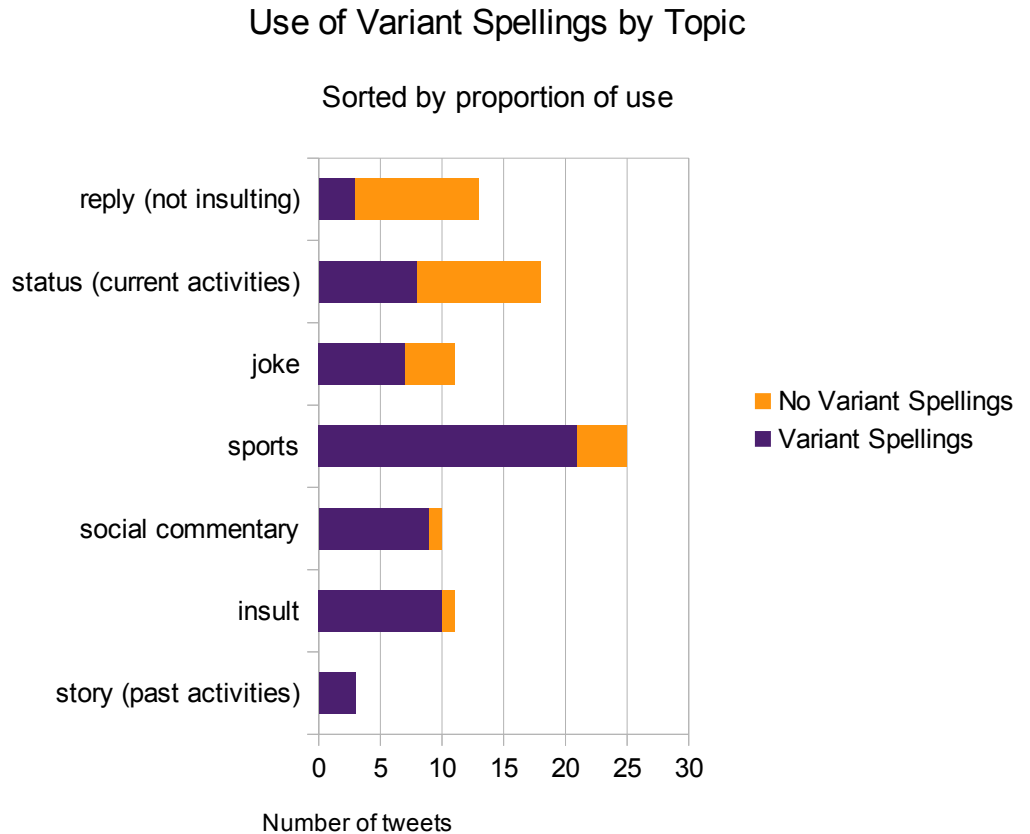
Research Questions

- Can we apply variationist methods to Twitter data?
  - Yes
  - Method proposed here was applied to multiple dialects
- Do Twitter users use variant spellings to encode sociophonetic variation?
  - Yes, convergent evidence
- Do variant spellings interact with style?
  - Yes, area for future research
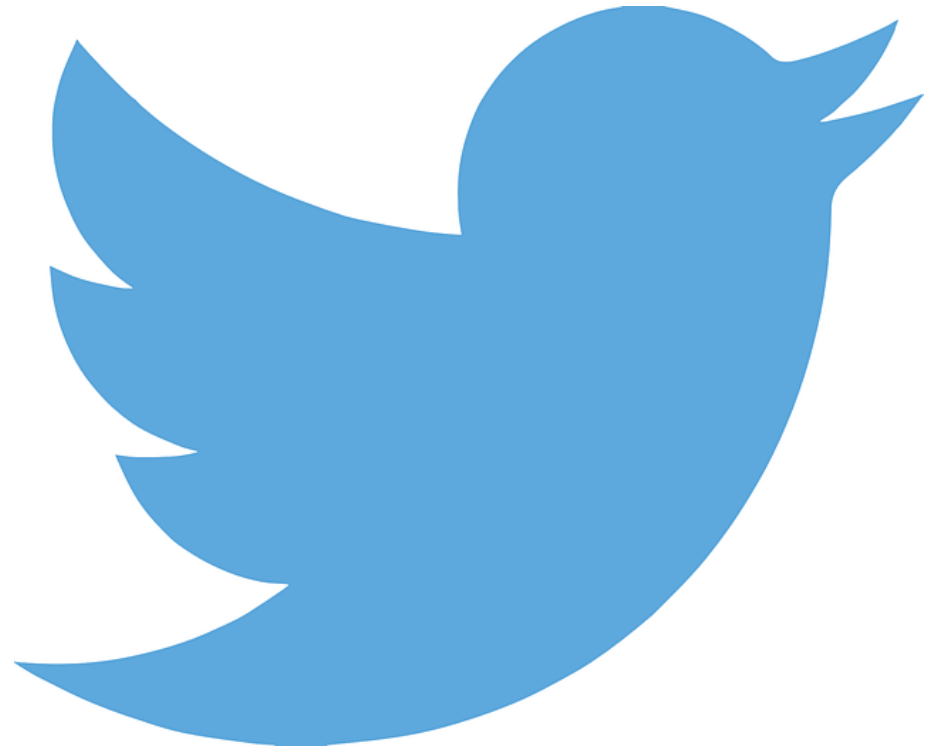
Thank you!

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Code For Sampling Tweets

```r
# add your own words here
words <- c("awn", "awr", "awll", "yawr", "awlso", "wawnt", "becawse")
TwitterData <- NULL
# will return 100 English Tweets for each word
for(i in 1:length(words)){
  word <- searchTwitter(words[i], n=100, lang = "en")
  word.df = do.call("rbind",lapply(word,as.data.frame))
  TwitterData <- rbind(TwitterData, word.df)
}
# save out your data to analyze later
write.csv(TwitterData, "TwitterData.csv")
```

Code available at: https://github.com/rctatman/TwitterVarientSpellings

Words used for SAE study

- (for excluded because "fawr" is a foreign word)
- on
- or
- all
- your
- also
- want
- because

Words used for SSE study
(with frequency rank)

- "to" - 7, 9
- "you" - 14
- "do" - 18
- "who" - 38

Image posted by Redbubble user appfoto. Retrieve April 23, 2015 from
http://www.redbubble.com/people/appfoto/works/11160793-dr-who-whae-are-yae?p=sticker