

# The differences between and within BEG and BAG: Phonological, morphological, and lexical effects in prevelar raising

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## Pre-velar raising

Some varieties of North American English raise /ε/ or /æ/ before /g/: Upper Midwest, Pacific Northwest, and Canada. (Zeller 1997; Labov et al 2006, Wassink 2015, Swan 2016, Stanley 2017, McLarty et al 2016, Gunter et al. 2017, etc.)

### Vowel classes

VAGUE: /εg/ (*plague, flagrant*) → [εg]  
 BEG: /εg/ (*egg, legs, regular*) → [εg, εɪg]  
 BAG: /æg/ (*snag, flag, dragon*) → [εg, εg]  
 Relatively few words: difficult to study.

### Usually co-occur

Varieties that have BAG-raising usually also have BEG-raising. However:

- Some in BC raise BAG but not BEG (Mellesmoen 2018)
- Some in NV raise BEG but not BAG (Gunter et al. 2017)

If raising is driven by a common underlying cause, why get one without the other?

## This Study

### Remaining questions

Most of what we know is based on common monosyllabic words (*beg, keg, flag, drag*), usually from a word list or reading passage. What about...

- Polysyllabic (*hexagonal, stegosaurus, protagonist*)
- Borrowings (*allegro, reggae, oregano*)
- Names (*Lego, Winnipeg, Skagway, Pythagorean*)
- Polymorphemic (*zigzagging, begged, baggy*)
- Rare words (*interregnum, lollygag, scallywag*)
- Orthographic <ex> (*exit, existential, exile*)

### Anecdotal observation

- I'm from St. Louis and I have BEG-raising in most words, except a few like *integrity, segregate, negligent, and regulate*.
- St. Louis is not known to have BEG-raising, and these words have not been included in other studies.

### Hypotheses

1. Based on my exceptions, BEG-raising is less common when it is followed by a sonorant.
2. BEG- and BAG-raising have different patterns.

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## Data and Methods

### Word selection

- 197 words (24 VAGUE, 68 BEG, and 107 BAG)
- Not limited to common/short words.
- Underlying vowel based on CMU Dictionary

### Online survey

Question: How do you pronounce \_\_\_\_\_?

- Like the vowel in *bake*
- Like the vowel in *deck*
- Like the vowel in *back*
- Somewhere between *bake* and *deck*
- Other [space provided]

### Survey format

- Showed 69 words to everybody in a random order with vowel underlined.
- Age, gender, ethnicity, and "Where are you from?" as fill-in-the-blank boxes.
- If they wanted to continue, 4 more blocks with additional words were available. (About 10% continued past the first block.)

### Distribution

- Posted in the subreddit for each US state and Canadian province/territory
- 6,987 participants and 567,831 observations

### Main Analysis

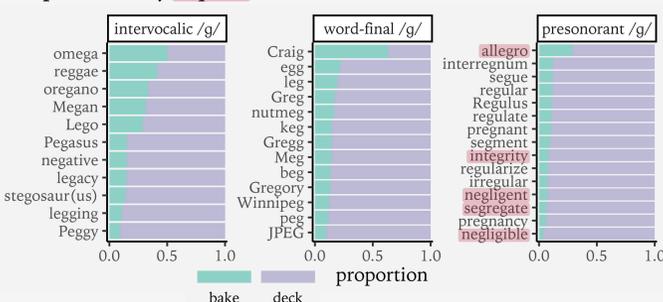
$\text{lme4: glmer}(\text{is\_bake} \sim \text{is\_borrowing} + \text{environment} + \text{log\_frequency} + (1|\text{person}) + (1|\text{word}))$

Their choice was coded as binary variable: *bake* was selected vs. everything else.

word-final /g/ (*leg, bag*)  
 intervocalic /g/ (*legacy, baggage*)  
 pre-sonorant /g/ (*negligent, straggler*)

## Phonological Effects

- No difference between intervocalic /g/ and word-final /g/.
- For BEG only, significantly less raising before sonorants, particularly liquids:



## Morphological Effects

- Adding -s was had a negligible effect for both vowels.
- There was more raising reported after adding -ing.
- For BAG only, there was more raising in words with -ed.

## Conclusions

### Many language-internal factors

- Despite relatively few words with BEG and BAG, there are phonological, morphological, and lexical effects.
- A small word list may not have captured all this.
- (For regional and other sociolinguistic patterns, see my ADS presentation in January.)

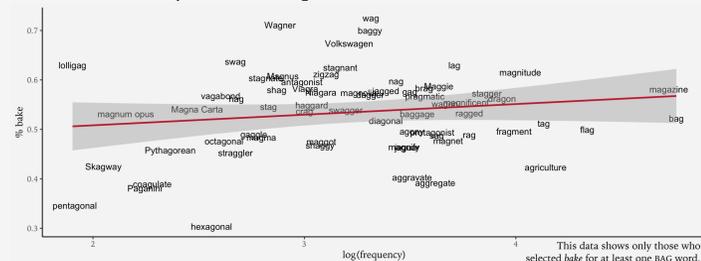
### Limitations

- Survey data (and variable reference words) is unreliable.
- Absolutely need acoustic data to confirm these patterns

## Lexical Effects

### Word Frequency

- For BAG only, more frequent = more raised



### Borrowings

- For BEG only, borrowings were raised more.

### Orthographic <ex>

- A near 50-50 split in voicing: [εksɪt] vs. [εgzɪt]
- Even among those who voiced the cluster, these were rarely raised (<10%) even if they raise BEG and/or BAG.

### BEG and BAG are different

- BEG is raised less when followed by a sonorant and raised more in borrowings.
- BAG is raised more when -ed is added, and in more frequent words.

### Big picture

- Even infrequent linguistic variables are interesting.
- Include more words and in more environments in word lists.
- Reddit is a great way to get a lot of data fast.

Figure 1: Reported BEG-raising

Proportion of each response for BEG and VAGUE words, aggregated across all participants, in order of amount of raising (*bake* – *back*)

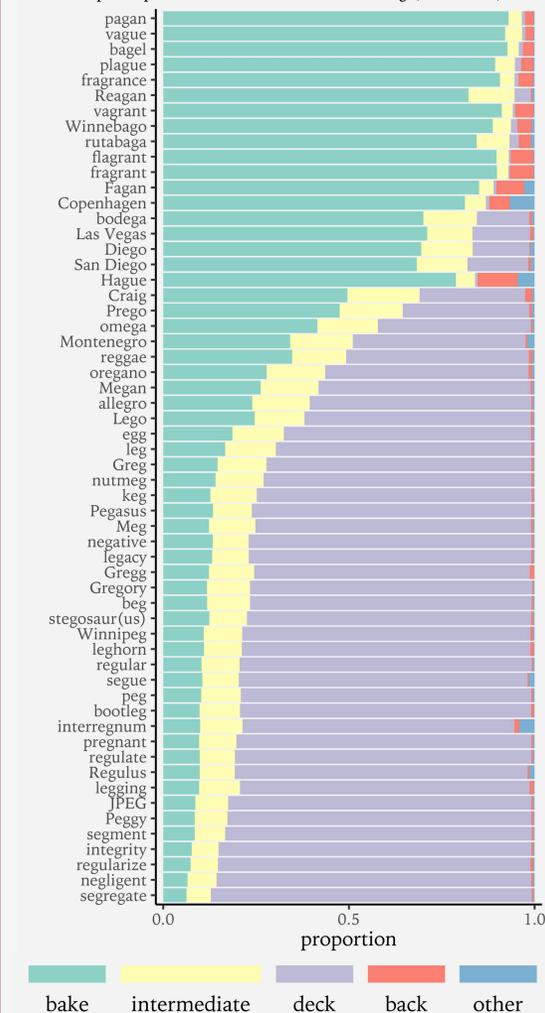
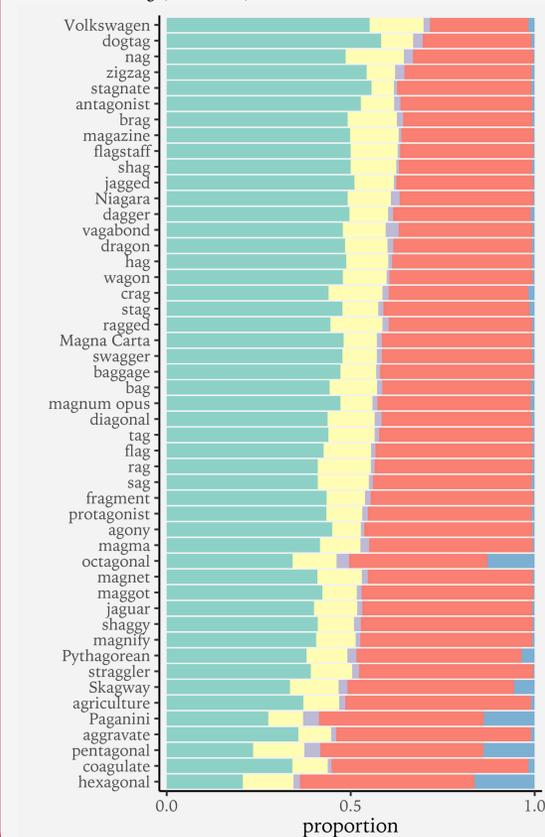


Figure 2: Reported BAG-raising

Proportion of each response for BAG words, aggregated across all participants who indicated *bake* in at least one BAG word, in order of amount of raising (*bake* – *back*)



## References

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Download this poster at [joestanley.com/nwav47](http://joestanley.com/nwav47)

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