

Are BEG and BAG-raising distinct? Regional patterns in prevelar raising in North American English

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PREVELAR RAISING

Conditioned raising of TRAP and DRESS before /g/.

BAG (~84 lexemes*)

flag, magnet, rag, flag, coagulate, antagonist, snag, tag, fragment, jagged, lag, shaggy, brag, scraggy, wag, stagnant, nag, gag, wagon, drag, dragon, agony, sag, zigzag, aggregate, scallywag, magnificent, haggle, octagonal, straggle, pragmatic, haggard, Pythagorean, Baghdad, aggravate...

BEG (~60 lexemes*)

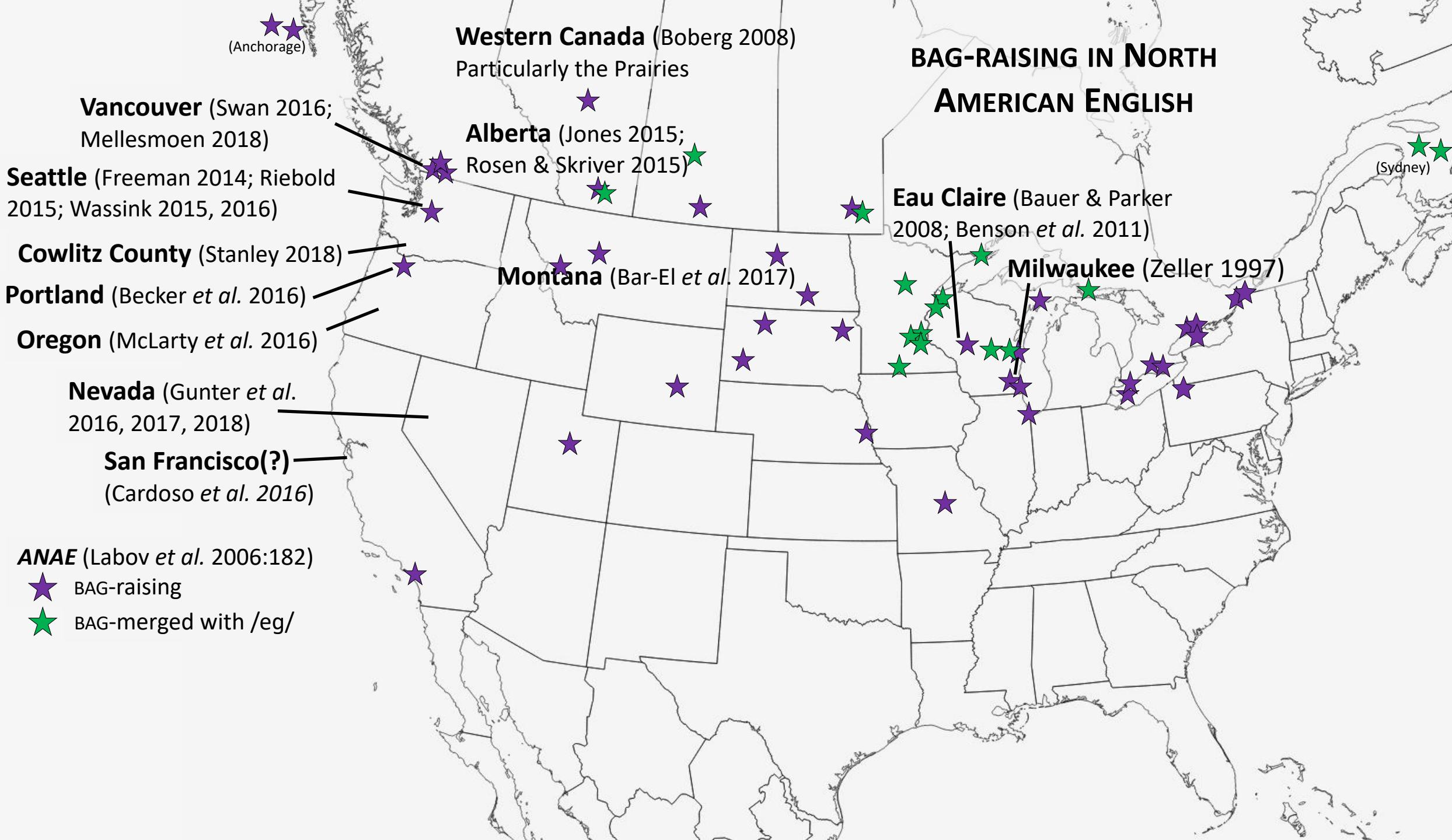
Regulate, leg, negative, egg, megaphone, pregnant, negligent, segregate, Greg, peg, segment, renege, tegument, keg, regnant, legate, stegosaur, interregnum, dregs, Megan, segue, JPEG, legacy, nutmeg, regolith, Regulus, omega, oregano, integrity, allegro, Pegasus, eglantine, telegraphy...

VAGUE (~16 lexemes*)

bagel, fragrant, flagrant, plague, vague, vagrant, rutabaga, bodega, Prego, the Hague, Copenhagen, Reagen, San Diego, Las Vegas, Trinidad and Tobago, Winnebago...

*By my count, which is based on the CMU Pronouncing Dictionary and the Routledge Dictionary of Pronunciation for Current English (Upton & Kretzschmar 2017)

BAG-RAISING IN NORTH AMERICAN ENGLISH



STUDIES ON BAG

Detailed phonetic descriptions

- Bauer and Parker (2008) use ultrasound data to show that it is a result of coarticulation.
- Purnell (2008) use show that raised BAG has more anterior and more lip repositioning.

Detailed social patterns

- All ethnicities studied (in Washington) raised BEG and BEG and more socially integrated people had more raising. (Riebold 2015; Wassink 2016)
- Differences between Mormons and non-Mormons in Alberta. (Rosen & Skriver 2015)
- Suddenly lost in southwest Washington when the timber industry changed. (Stanley 2018)

Analysis of merger

- Zeller (1997) says BAG and VAGUE are merged, but Bauer and Parker (2008) make it clear that they are not, in Wisconsin at least.
- Possibly a merger by approximation in Seattle. (Wassink 2014)

Social meaning

- Associated with nostalgia for old Seattle while lack of raising is for “techy” Seattle (Swan 2018)
- Used more by people who like Longview and the Pacific Northwest (Stanley 2018)

WHAT ABOUT BEG-RAISING?

It's far less-studied than BAG-raising

Some phonetic detail

- Seattle speakers have overlap between BEG and VAGUE along their entire trajectories. The merged vowel is centered between [e] and [ɛ]. (Freeman 2014)

Basic social patterns

- Women merge BEG with VAGUE. Men merge BAG with BEG. (Wassink et al. 2009)
- BEG raising in all ages. (Wassink 2015)
- Some social awareness (Freeman 2014)

Lexical factors

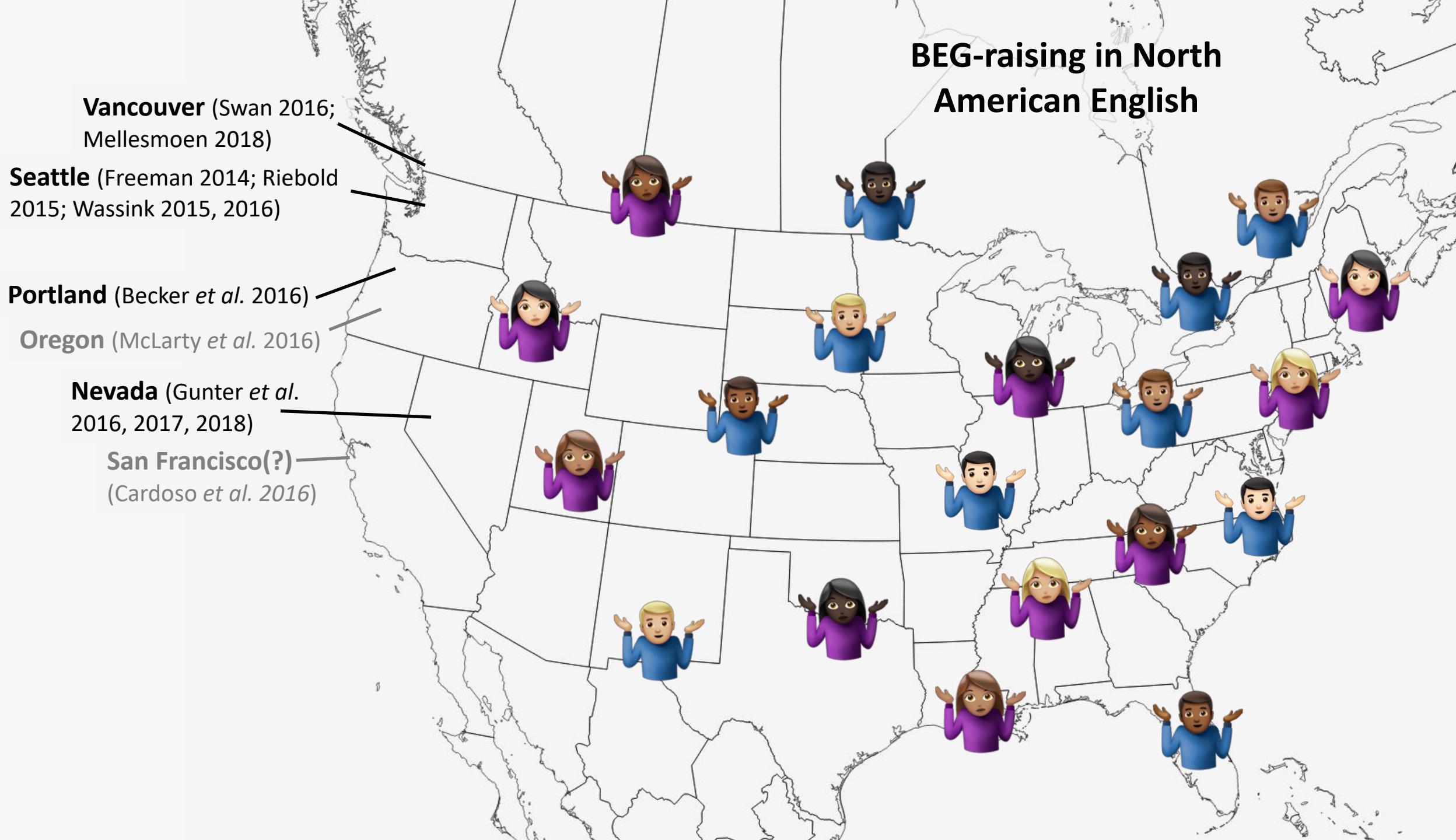
- Some words, like egg are categorically raised. (Wassink 2015; Gunter, Clayton, & Fridland 2018)

The folks at Reno

- Nevadans have BEG-raising without BAG raising. (Gunter, Clayton, & Fridland 2016a)
- They have reanalyzed BEG words as VAGUE, so they're immune to DRESS-lowering. (Gunter, Clayton, & Fridland 2016a)
- Experimental work showing vowel categorization. (Gunter, Clayton, & Fridland 2018)

BEG-raising in North American English

- Vancouver (Swan 2016; Mellesmoen 2018)
- Seattle (Freeman 2014; Riebold 2015; Wassink 2015, 2016)
- Portland (Becker *et al.* 2016)
- Oregon (McLarty *et al.* 2016)
- Nevada (Gunter *et al.* 2016, 2017, 2018)
- San Francisco(?)
(Cardoso *et al.* 2016)



Hypotheses

1. BEG- and BAG-raising are independent.
2. Prevelar raising is more widespread than reported thus far.

METHODS

WORD SELECTION

CMU Pronouncing Dictionary

"AE1 G"—560 words

"EH1 G"—418 words

"EY1 G"—223 words

The *Routledge Dictionary of Pronunciation for Current English* (Upton & Kretzschmar 2017)*

"æg"—237 words

"ɛg"—181 words

"eɪg"—53 words

*Thanks to Bill Kretzschmar for providing me with a searchable version of this.

WORD SELECTION

Consolidated these lists, removed duplicates, etc.

Selected 202 words to be included.

- borrowings (*allegro, reggae, magnum opus*)
- proper nouns: (*Skagway, Gregory, Copenhagen*)
- derived forms (*eggnog, pregnancy, megabyte*)
- polymorphemic (*sagging, begged, plagues*)
- <ex>-words (*exit, exile, excerpt, exodus*)
- everything else

Go to joeystanley.com/nwav47
to see how these language–internal
factors affect prevelar raising.

SURVEY

How do you pronounce the following highlighted vowel sounds?

	Like the vowel in BAKE	Like the vowel in DECK.	Like the vowel in BACK.	Somewhere between BAKE and DECK	other (see comments)
peg (to hang your coat on)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
straggler (last in line)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
stegosaurus(us) (type of dinosaur)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
plague (locusts, sickness, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
maggot (nasty little buggers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
drags (when something just keeps going on and on)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
shaggy (in need of a haircut)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
wagon (four-wheeled, red)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Megan (a woman's name)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



joeystanley.com/survey

←Desktop

Mobile→

How do you pronounce the following highlighted vowel sounds?

reggae (type of Jamaican music)

Like the vowel in BAKE

Like the vowel in DECK.

Like the vowel in BACK.

Somewhere between BAKE and DECK

other (see comments)

flagrant (obviously offensive, usually describing a violation)

Winnipeg (city in Canada)

Winnebago (Native American tribe; brand of motor home)



SURVEY

Main Block:
69 words

Demographic
Questionnaire

29 words

36 words

56 words
(polymorphemic)

11 words
(with <ex>)

These were
fill-in-the-blanks.

Age

Gender

Race/Ethnicity

Where are you
from?
(asked for specific
cities and years)

Additional Info

- Blocks contained the same words each time.
- Within block, words were randomly ordered.
- “Comments section” at the end of each block.
- Median duration: 3½ minutes

Also asked if they voiced
the consonant cluster
(e[ks]it ~e[gz]it).
I kept only those that did.

Color Key

- Required
- Optional

DISTRIBUTION

Goal: Make sure all areas of North America are represented.

- My social network would be biased towards some regions.
- General survey site probably wouldn't get rural areas.

Solution: Reddit



- Every US state and Canadian province/territory has its own subreddit.
- Contacted the moderators and asked to post a survey.
 - Only California, Colorado, Delaware, and Quebec said no.
- Posted the survey on weekday mornings local time over two weeks.
 - Was friendly, open, used my real name and a dedicated username (u/dialectologist)
 - Kinda phrased it to make it sound like I'm interested in just them.

PROCESSING

567,831 observations from 6,987 people!

Processing location data

1. Only keep those that were in one city from ages 2 to 16
 - Resulting dataset: 5,291 people and 432,700 responses (~76% of total)
 - Median per state/province = 57.5 people)
2. Manually extract the city and state/province/territory.
3. Fetch GPS coordinates using Google Maps API
 - I used the `ggmap` package in R (Kahle & Wickham 2013)
4. Incorporate back into main spreadsheet.

(Only 53% grew up in the same state as where their IP address was located!)

PROCESSING

Processing degree of raising

1. Assign answers to values
2. Take the average for BEG and BAG per person.

Like the vowel in
BAKE

= 1

Somewhere between
BAKE and DECK

= 0.5

Like the vowel in
DECK

= 0

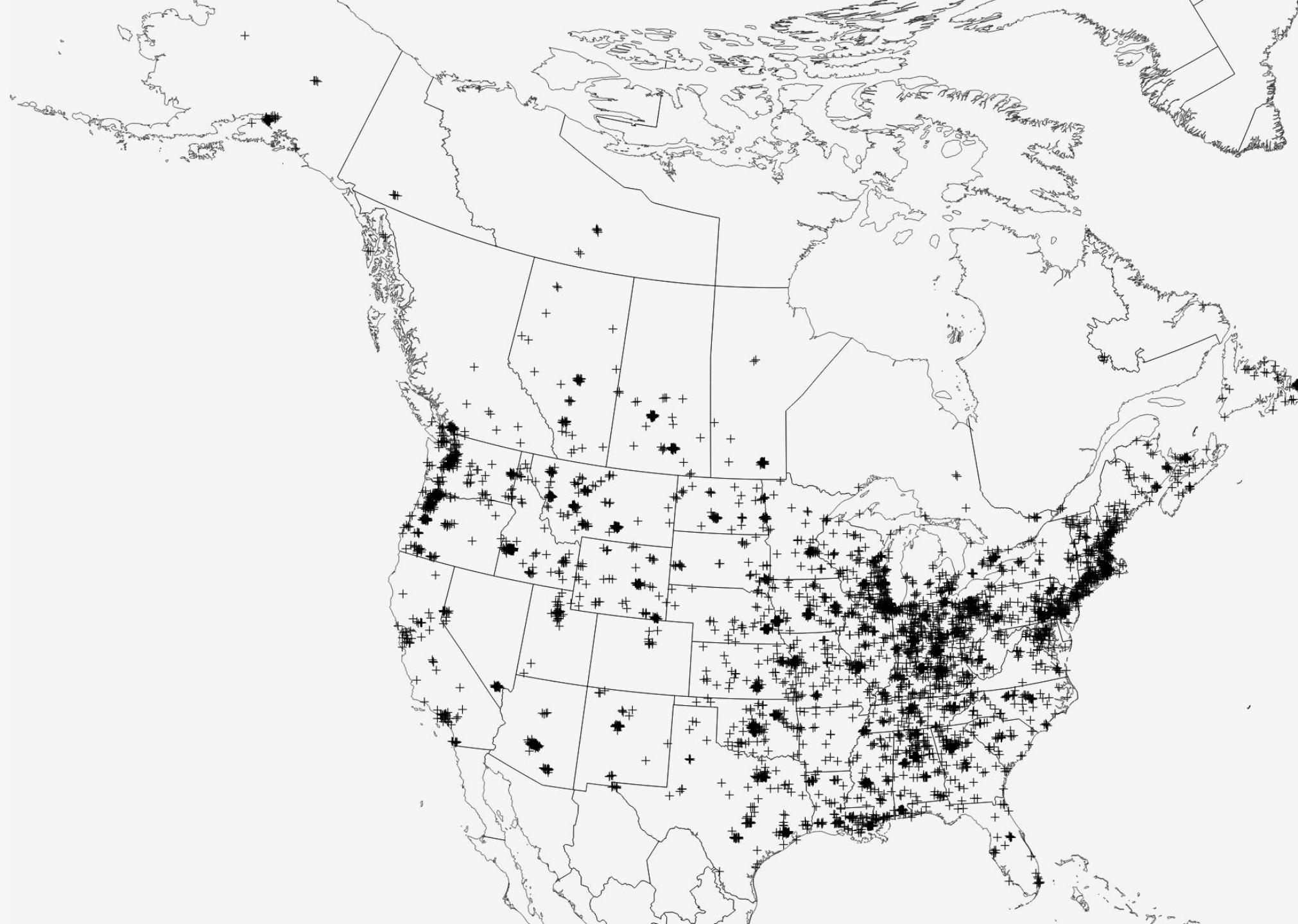
Like the vowel in
BACK

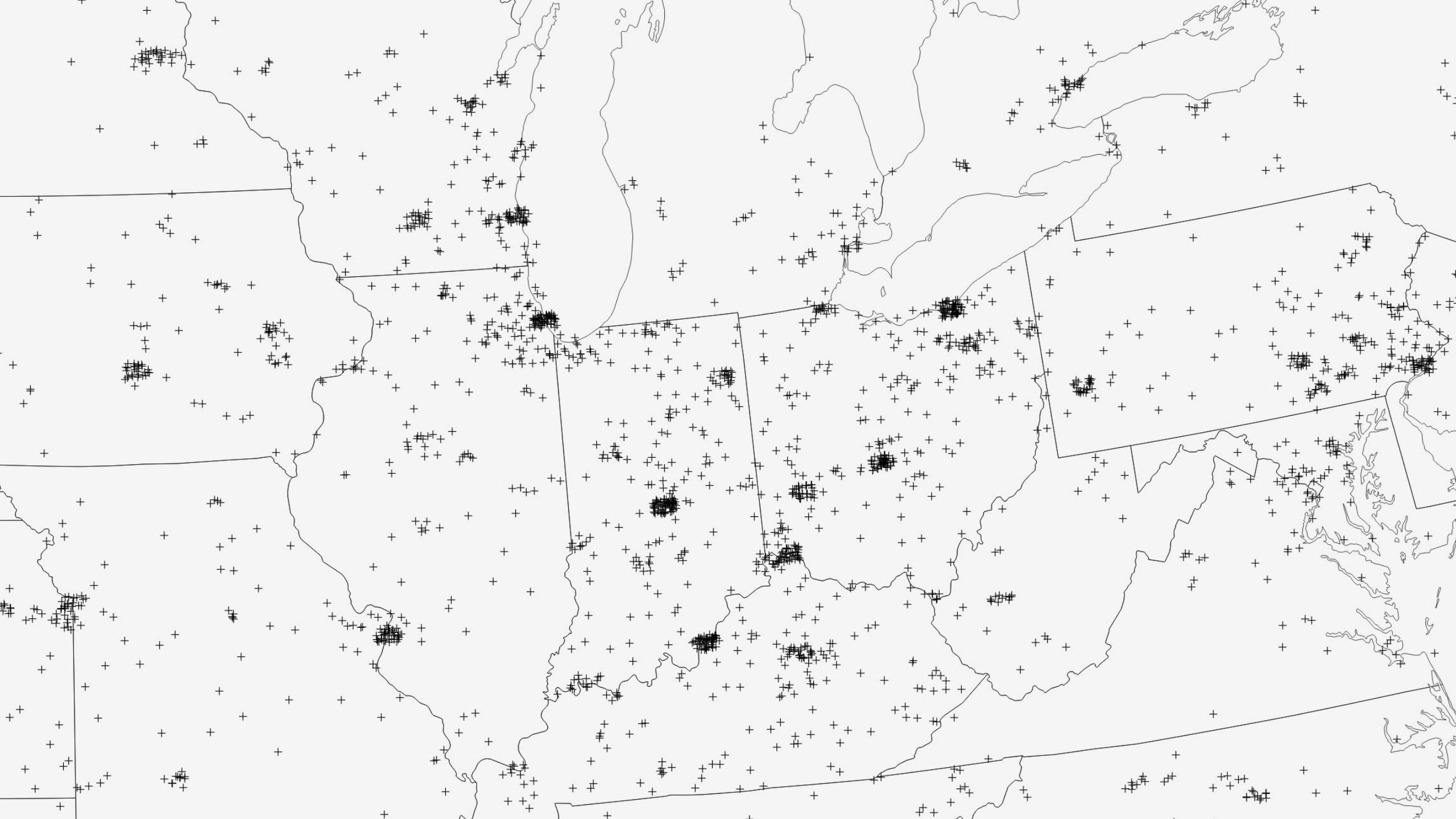
= -1

other

(excluded)

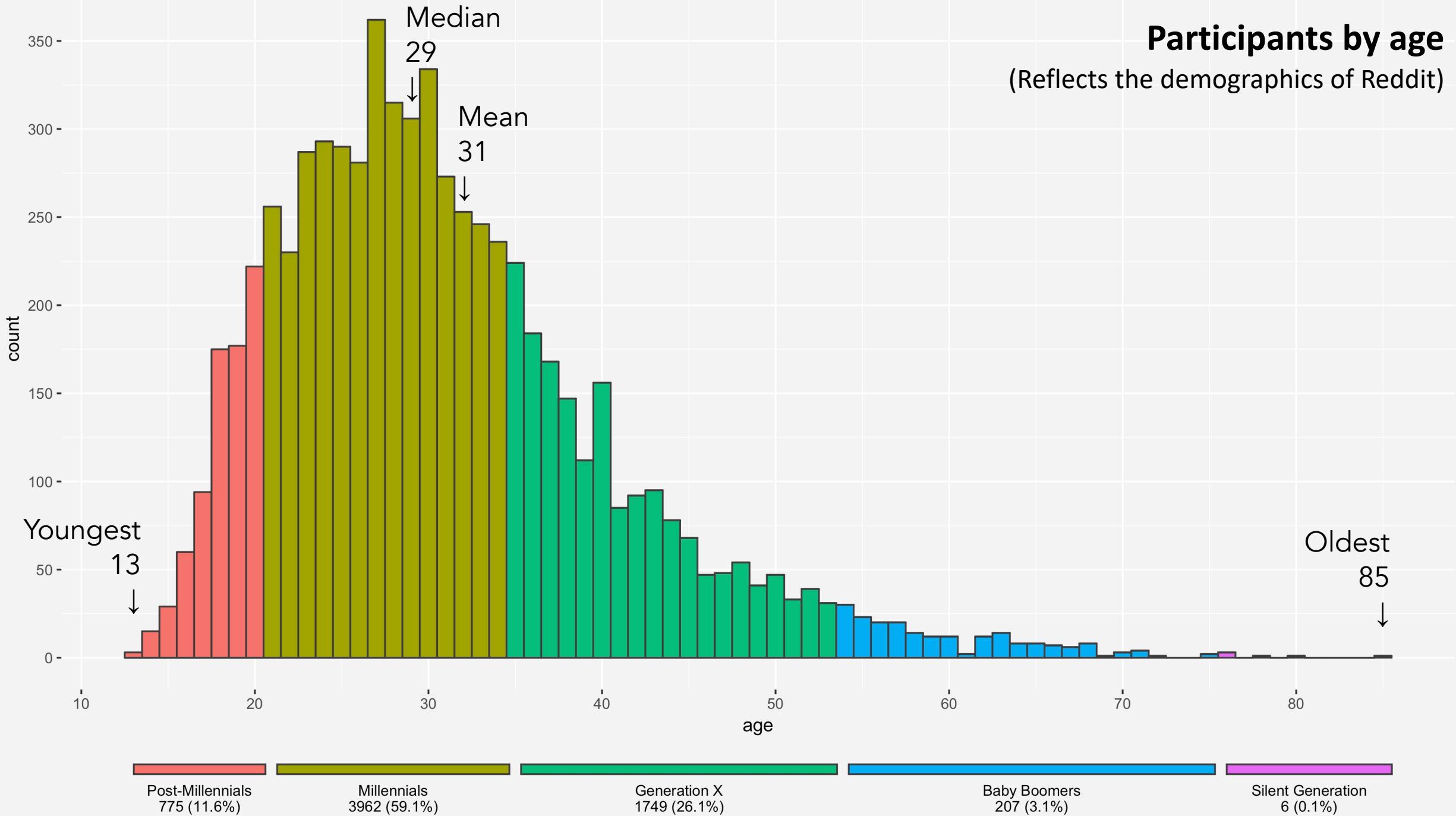
THIS SAMPLE





Participants by age

(Reflects the demographics of Reddit)



RACE/ETHNICITY

Ethnicity	responses	
White	6,092	86.5%
Hispanic	104	1.5%
Asian American	66	0.9%
Native American	30	0.4%
African American	25	0.4%
2 or more	285	4.0%
Other (e.g. Pacific Islander, Southeast Asian, Indian, Middle Eastern, etc.)	54	0.8%
No response	383	5.4%

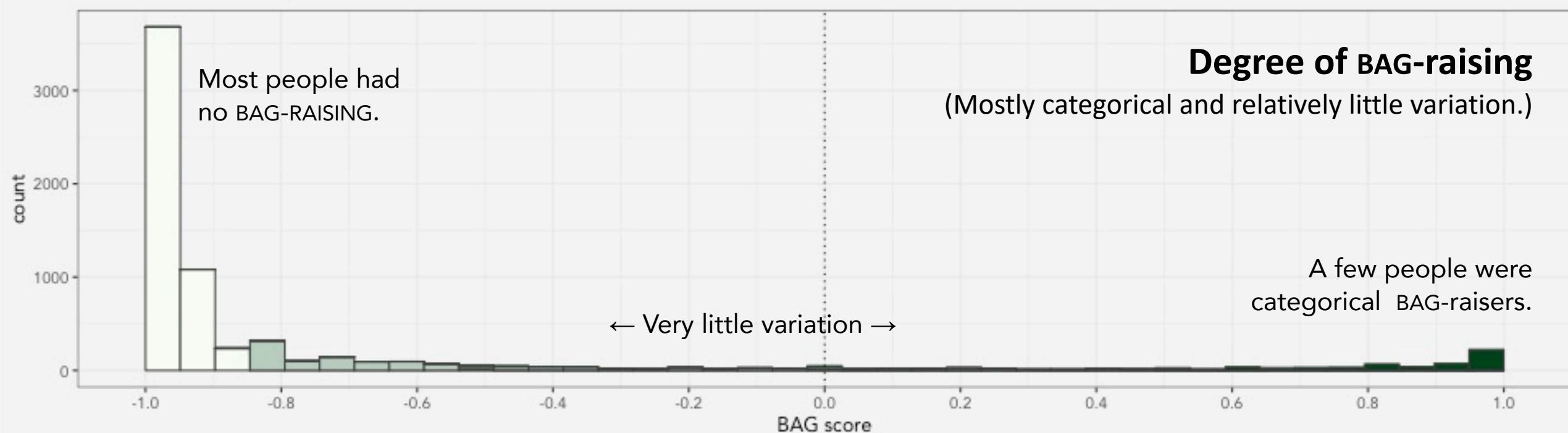
GENDER

Gender	responses	
male	4,329	61.5%
female	2,327	33.1%
nonbinary	15	0.21%
NA, other	3 (each)	0.043%
agender, genderqueer, queer, trans female, trans male, prefer not to answer	2 (each)	0.028%
female-ish, male-ish, genderfluid, none, female genderqueer, two spirit, male/genderfluid, male/other, transgender	1 (each)	0.14%
Some other response	28	0.40%
No response	310	4.41%

RESULTS

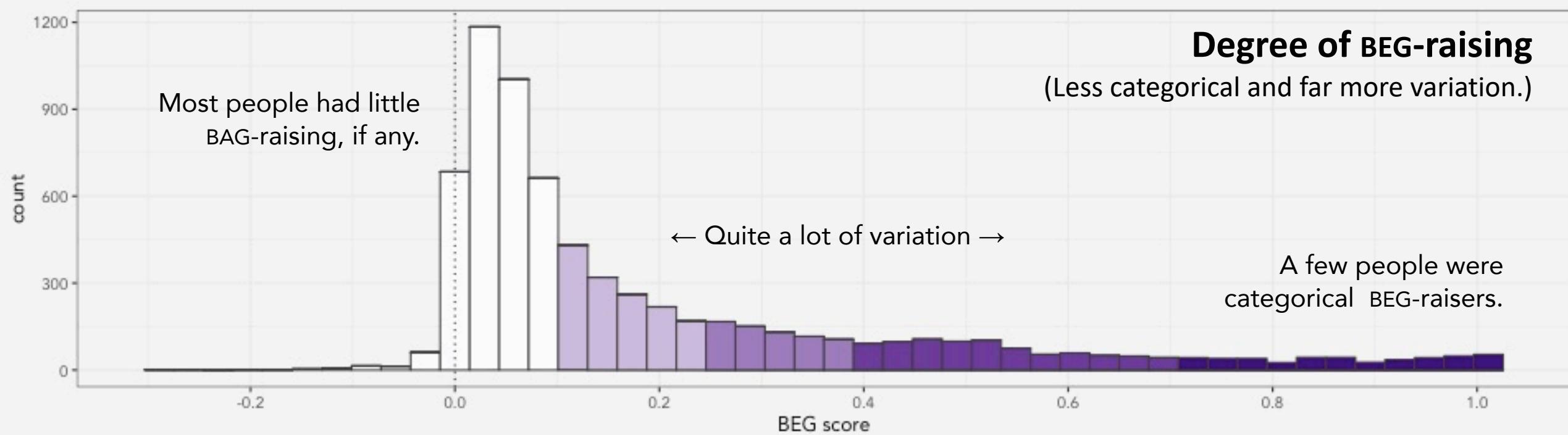
Degree of BAG-raising

(Mostly categorical and relatively little variation.)



Degree of BEG-raising

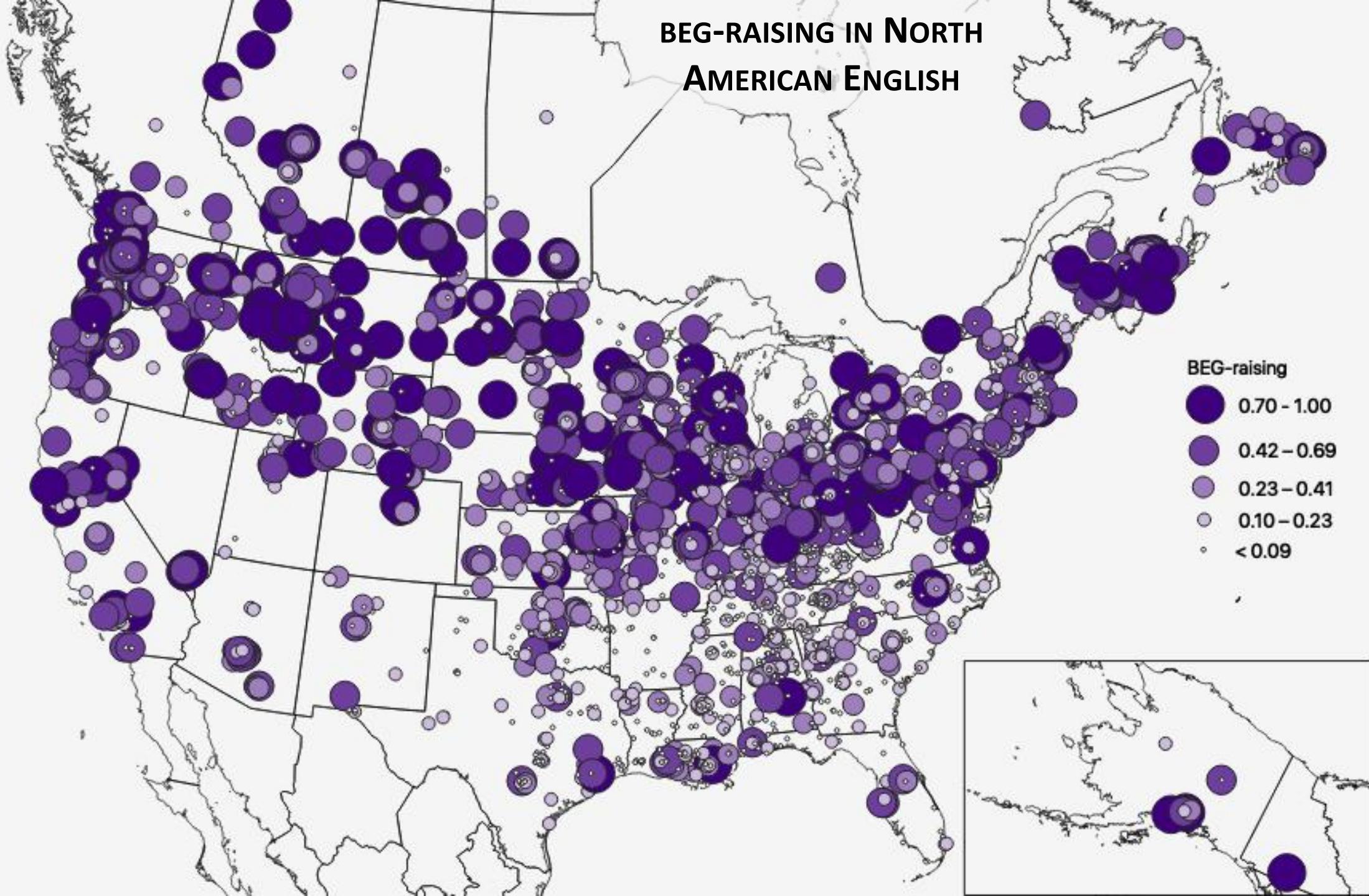
(Less categorical and far more variation.)

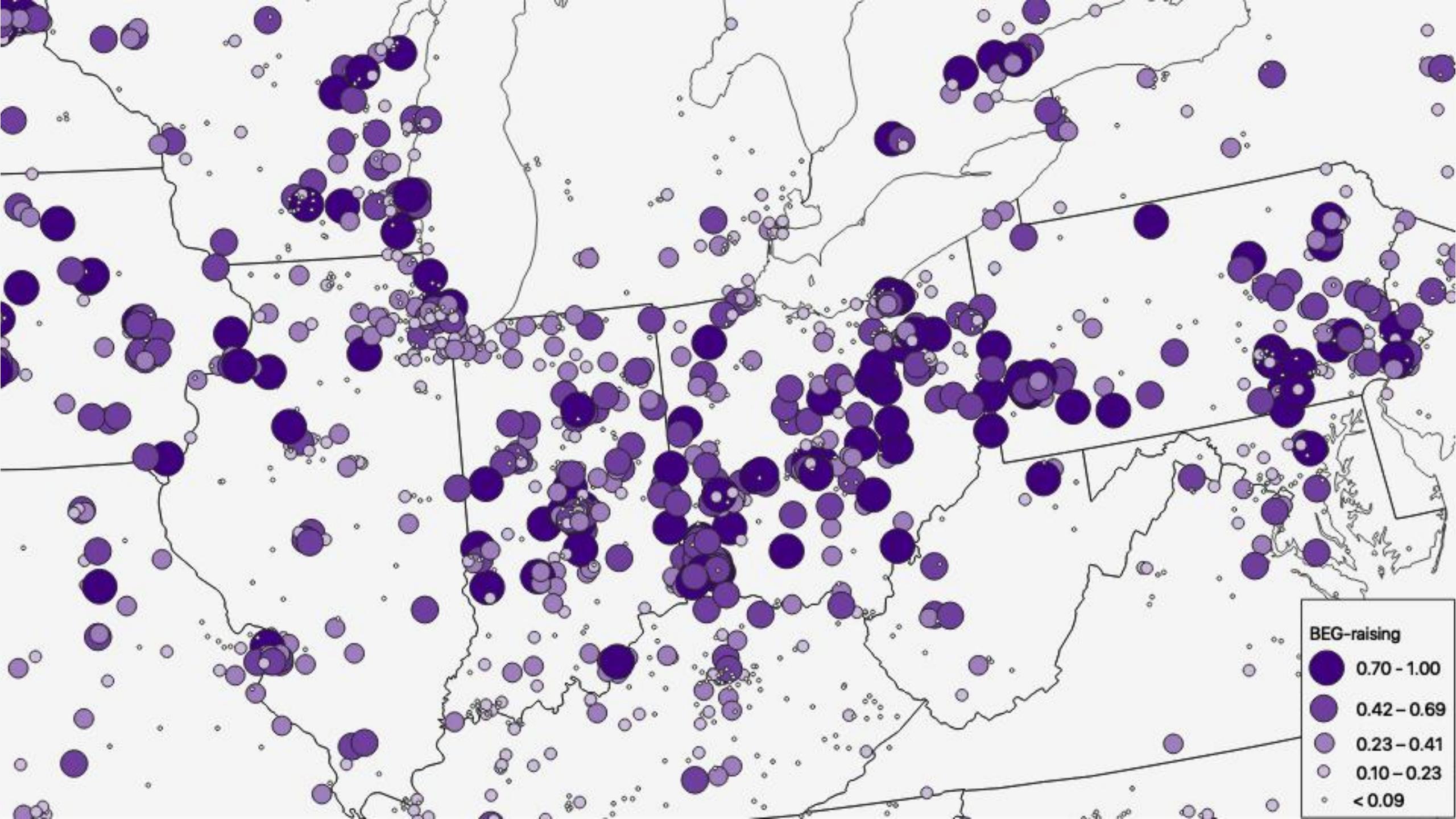


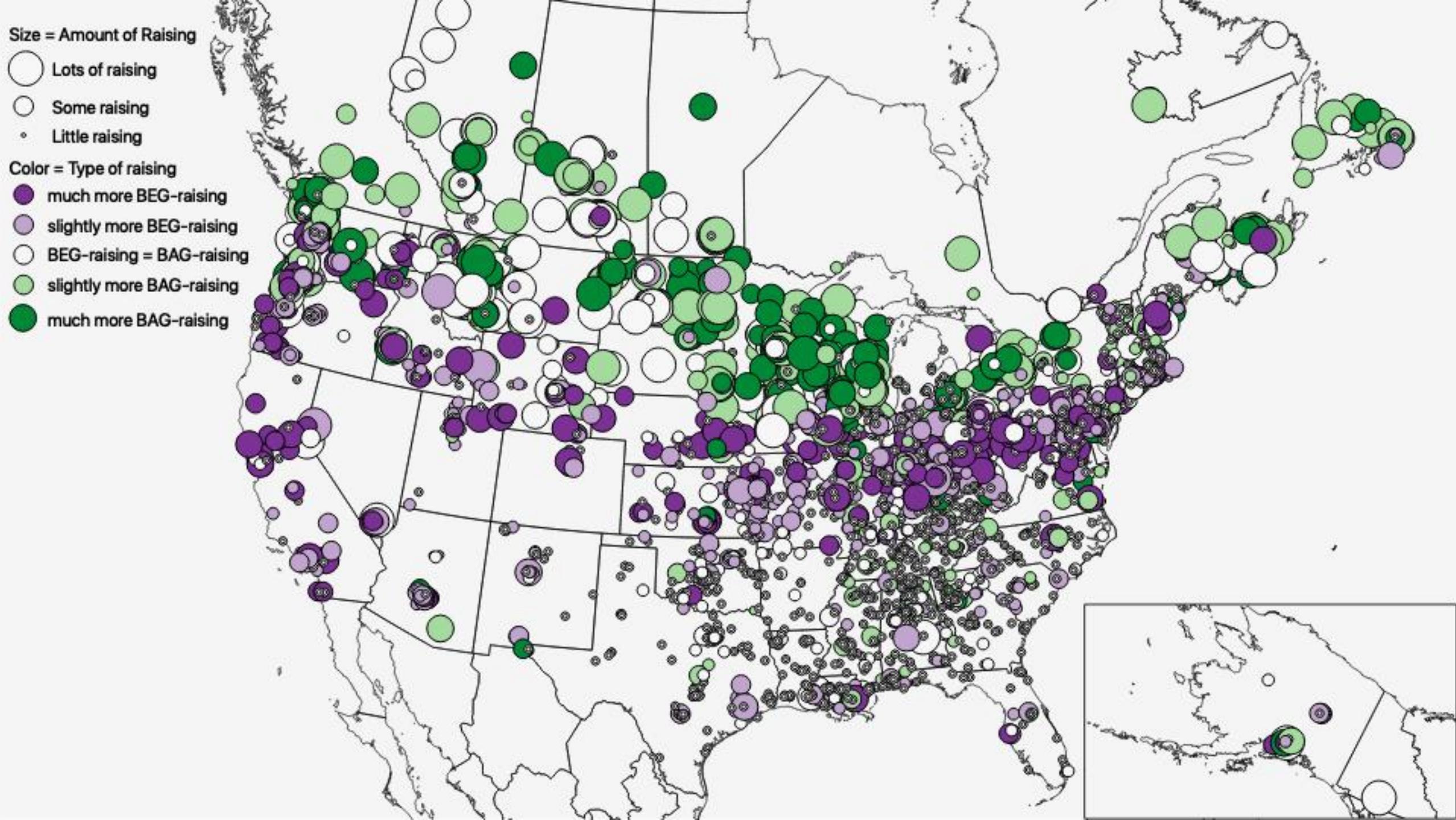
BAG-RAISING IN NORTH AMERICAN ENGLISH



BEG-RAISING IN NORTH AMERICAN ENGLISH







CONCLUSIONS

BEG- and BAG-raising are distinct!

BAG-raising only	both	BEG-raising only
<ul style="list-style-type: none">• Upper Midwest• Pacific Northwest,• Ontario• Prince Edward Island	<ul style="list-style-type: none">• The Dakotas• Montana• Canadian Prairies• Nova Scotia and New Brunswick.	<ul style="list-style-type: none">• Oregon & California• Intermountain West• Midlands

Avenues for future research

- This data is questionable: phonetic data needed to verify
- Sociolinguistic factors in places with lots of variation (esp. Ohio, Indiana)

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Special thanks to Meagan Duever (@mjduever) for teaching me everything I know about mapmaking.

This slideshow available at
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