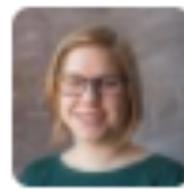


An aerial photograph of a wetland area, showing a complex network of water channels and small pools. A light gray grid is overlaid on the image, covering the entire surface. The terrain is a mix of dark brown and greenish-brown vegetation.

Mapping basics



Amelia McNamara
@AmeliaMN

The problem with maps is that the world looks like a map. We don't have that problem with other visualizations. @tmcw #NICAR14

9:15 AM - 28 Feb 2014



Amelia is @amelia@vis.social on Mastodon
@AmeliaMN

The problem with maps is that the world looks like a map. We don't have that problem with other visualizations. @tmcw #NICAR14

2/28/2014, 10:15:19 AM

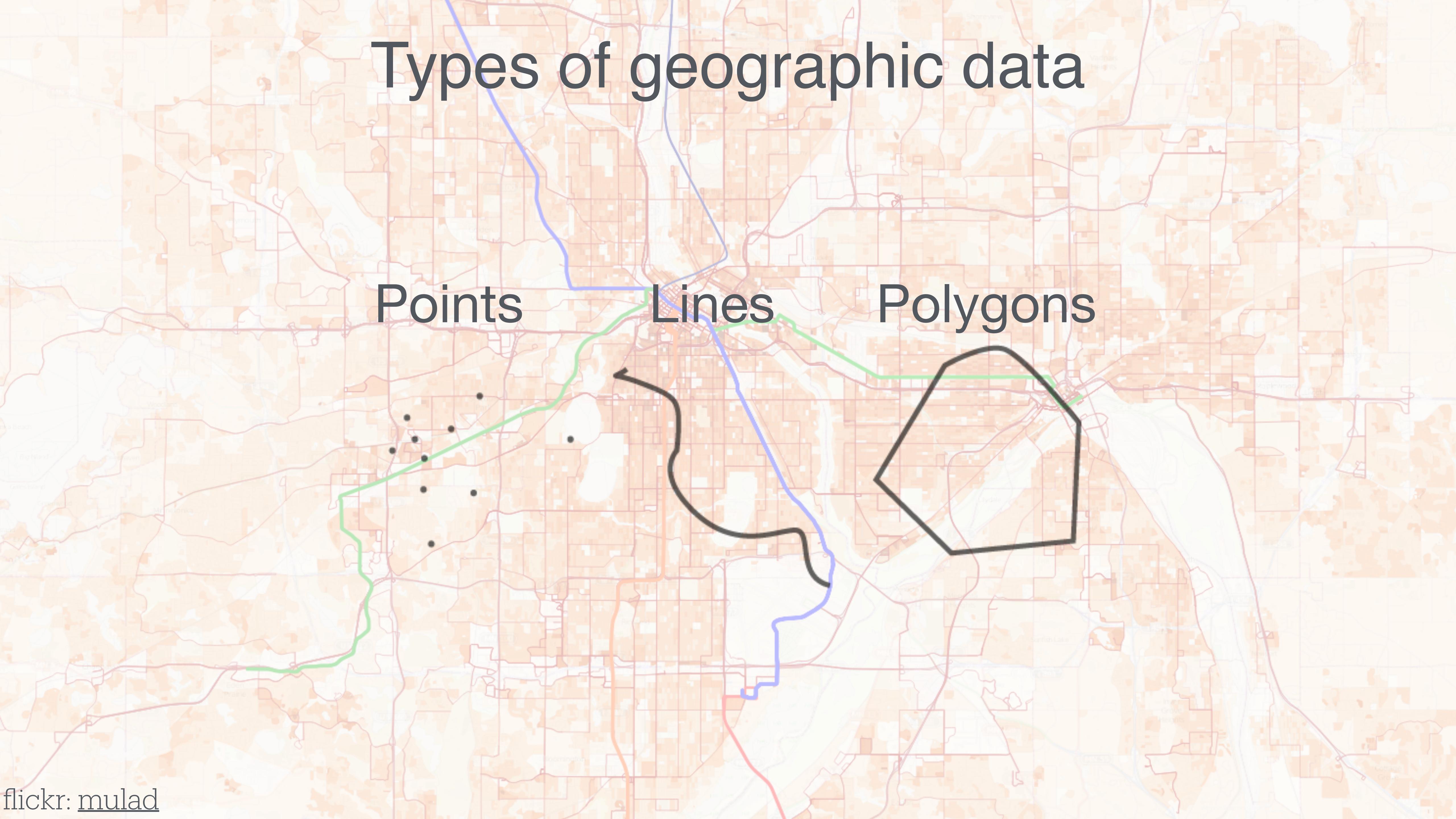
Favs: 8 Retweets: 1 [link](#)

Types of geographic data

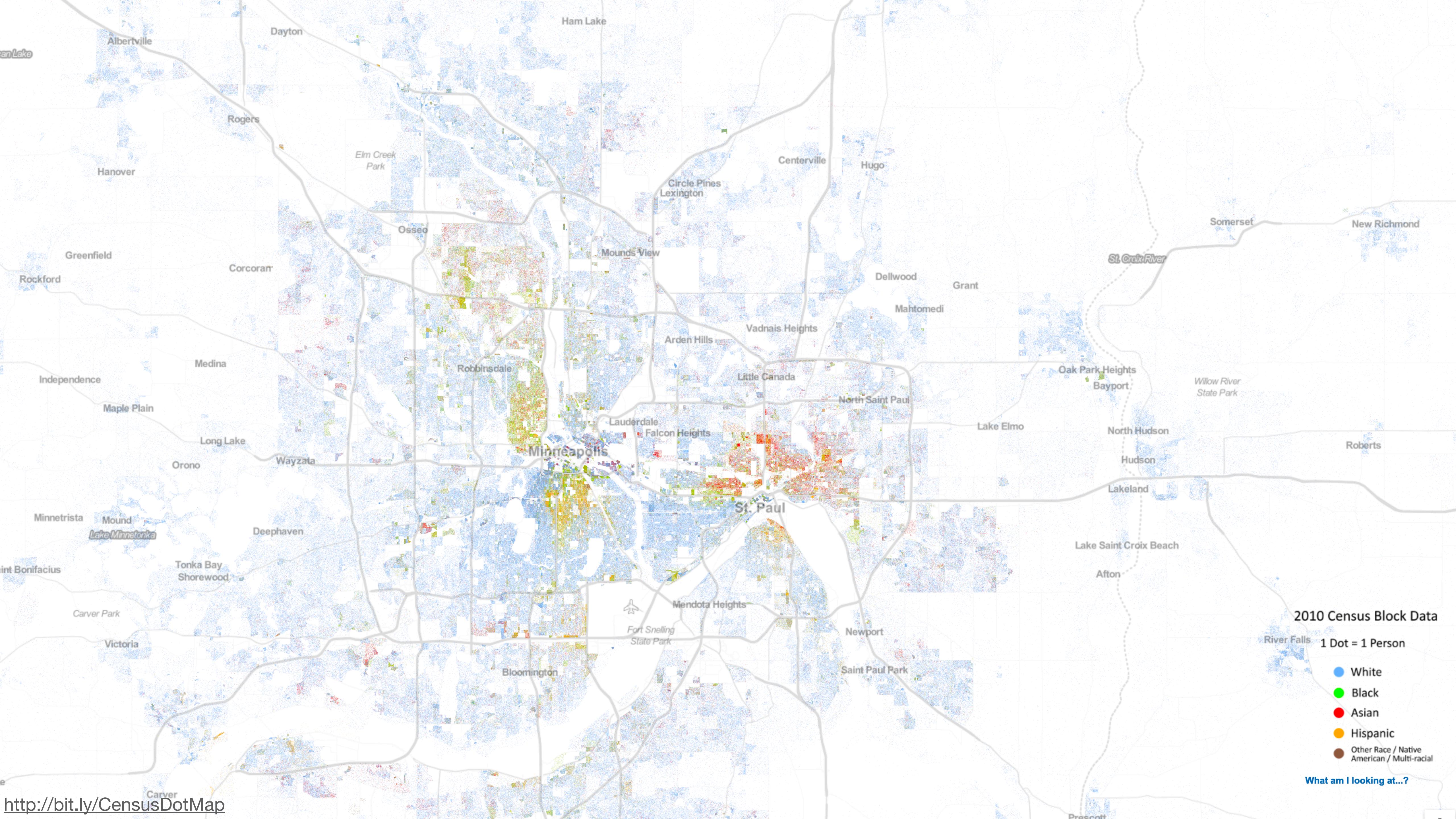
Points

Lines

Polygons



Points



010 Census Block Data

1 Dot = 1 Person

- White
 - Black
 - Asian
 - Hispanic
 - Other Race / Native American / Multi-racial

What am I looking at...?

DEMOGRAPHICS
RESEARCH GROUP

ABOUT DATA MAPS REPORTS CENSUS 2020 CONTACT



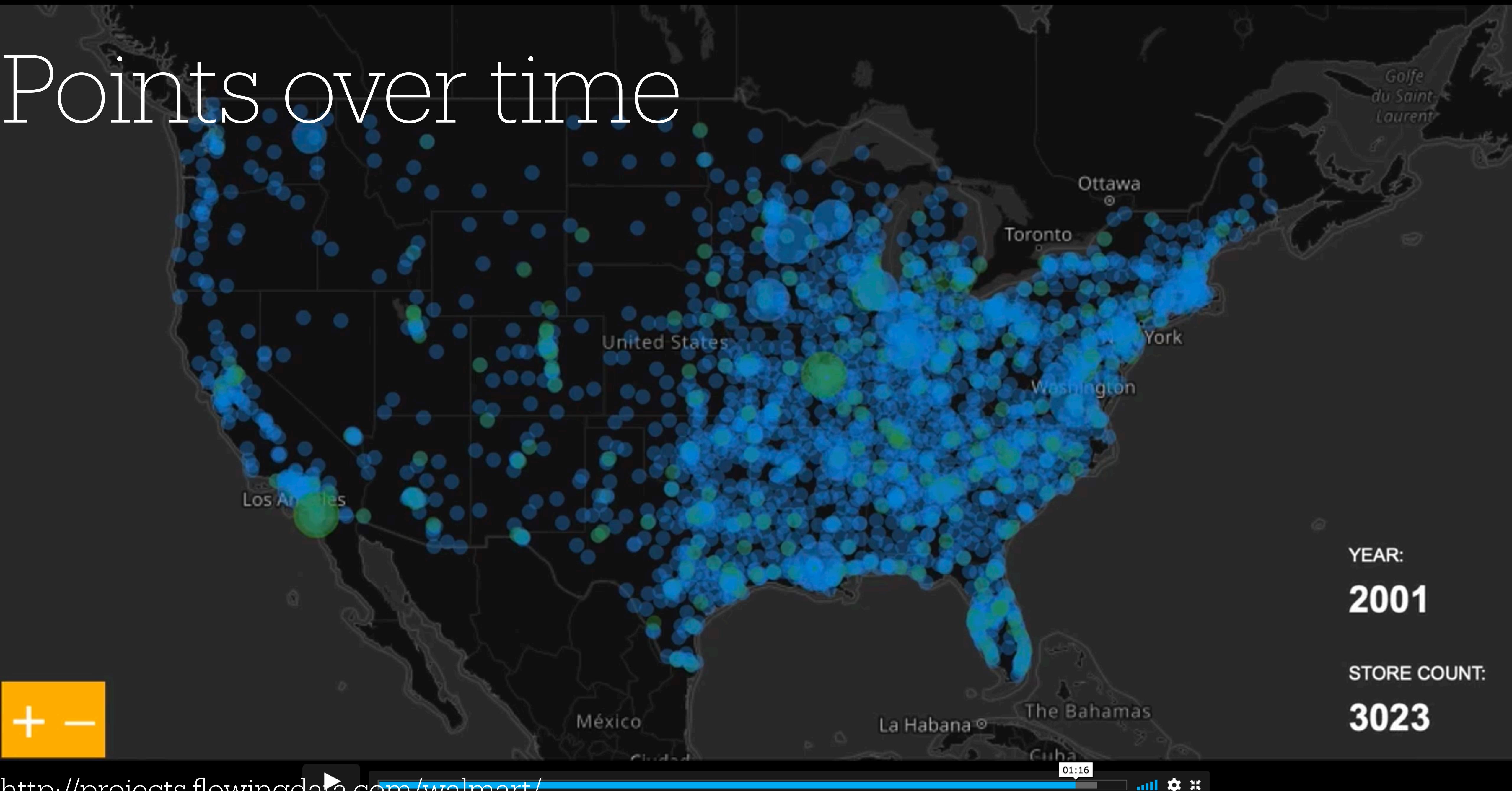
WHY WE HAVE REMOVED THE RACIAL DOT MAP

After nine years and millions of views, the 2010 Racial Dot Map has reached its expiration date. We have taken it offline as it no longer provides the most accurate depiction of the nation's population distribution and changing racial composition. Several factors contributed to this decision:

1. The 2020 Census count released by the U.S. Census Bureau on August 12, 2021 provides a new snapshot of the U.S. population by race and ethnicity, making 2020 the most current data of record. As demographers committed to data integrity, we cannot continue to host a map that does not accurately tell the story of race in the United States.
2. Between the 2010 and 2020 censuses, the multi-race and "Some Other Race" categories show significant growth. In the 2020 Census, ten percent of the population identified as multi-race compared to three percent in 2010; and "Some Other Race" became the second largest racial group, surpassing the population identifying themselves as Blacks or African-Americans. Both the dynamic growth of these populations and complexity of reflecting this rich diversity through color-coded dots made the model used for the Racial Dot Map inadequate to the task.
3. Producing a new map, equally elegant in its simplicity but capable of reflecting many more racial/ethnic groups is beyond our organization's financial and personnel resources.

We appreciate that so many of you have been passionate advocates for the 2010 Racial Dot Map and the ways it has helped to promote equity in your communities.

Points over time



Opinion | They Stormed the Cap X

← → C https://www.nytimes.com/2021/02/05/opinion/capitol-attack-cellphone-data.html ⌂ ⌂ 1 16 Abr 16

The New York Times OPINION | They Stormed the Capitol. Their Apps Tracked Them. Share full article 720

From Trump's Rally to Congress
This time-lapse animation shows smartphones as they moved from Donald Trump's rally to the Capitol.



They Stormed the Capitol. Their Apps Tracked Them. Charlie Warzel and Stuart A. Thompson
<https://www.nytimes.com/2021/02/05/opinion/capitol-attack-cellphone-data.html>

Opinion | They Stormed the Cap X

← → C https://www.nytimes.com/2021/02/05/opinion/capitol-attack-cellphone-data.html ⌂ ⌂ 1 16 Abr 16

The New York Times OPINION | They Stormed the Capitol. Their Apps Tracked Them. Share full article ⌂ ⌂ 720

From Trump's Rally to Congress
This time-lapse animation shows smartphones as they moved from Donald Trump's rally to the Capitol.



They Stormed the Capitol. Their Apps Tracked Them. Charlie Warzel and Stuart A. Thompson
<https://www.nytimes.com/2021/02/05/opinion/capitol-attack-cellphone-data.html>

Heat maps

Published: December 21, 2013

How Y'all, Youse and You Guys Talk

What does the way you speak say about where you're from?
Answer all the questions below to see your personal dialect map.

QUESTION 1 OF 25

How would you address a group of two or more people?

- you all
- yous / youse
- you lot
- you guys
- you 'uns
- yinz
- you
- other
- y'all

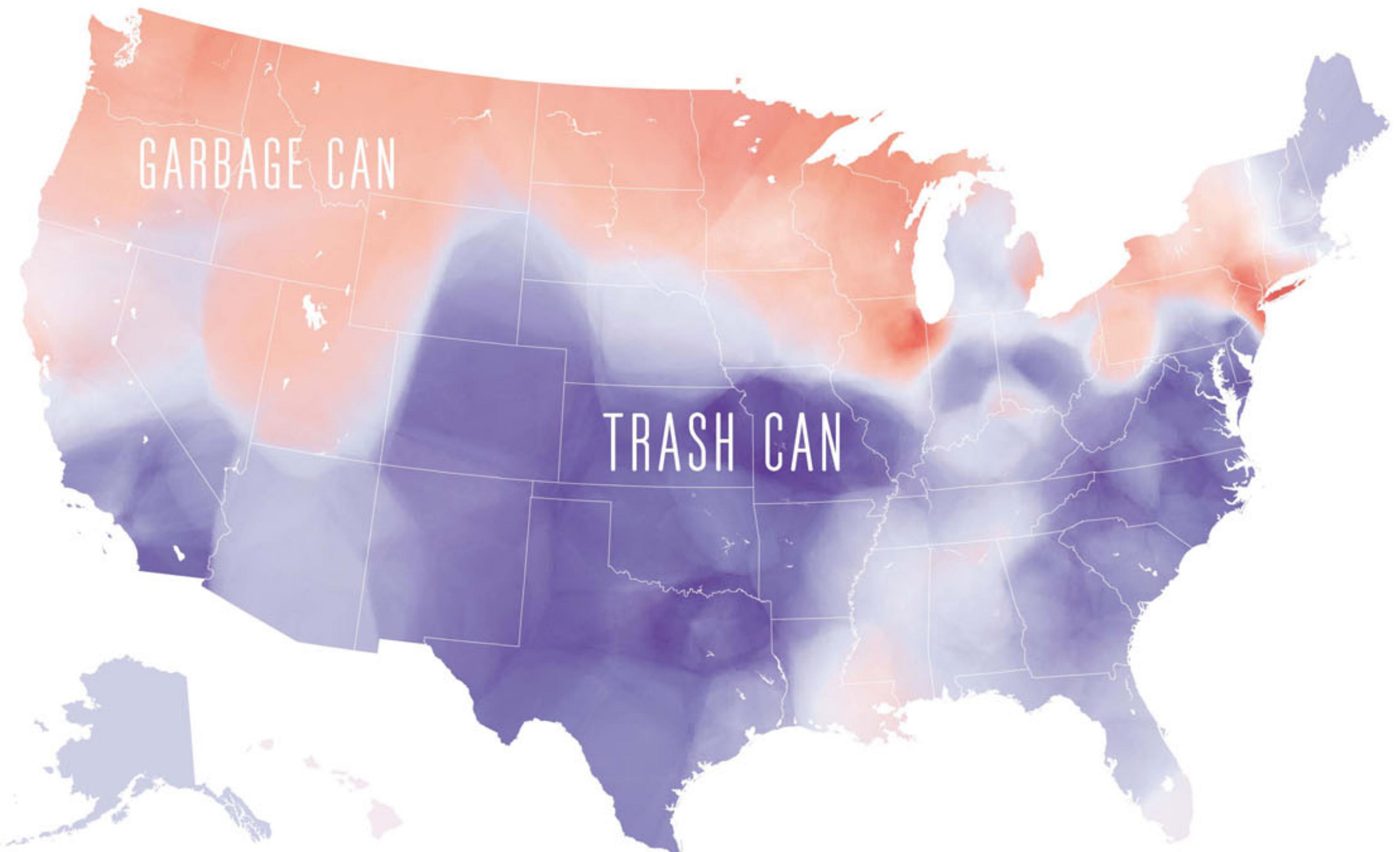
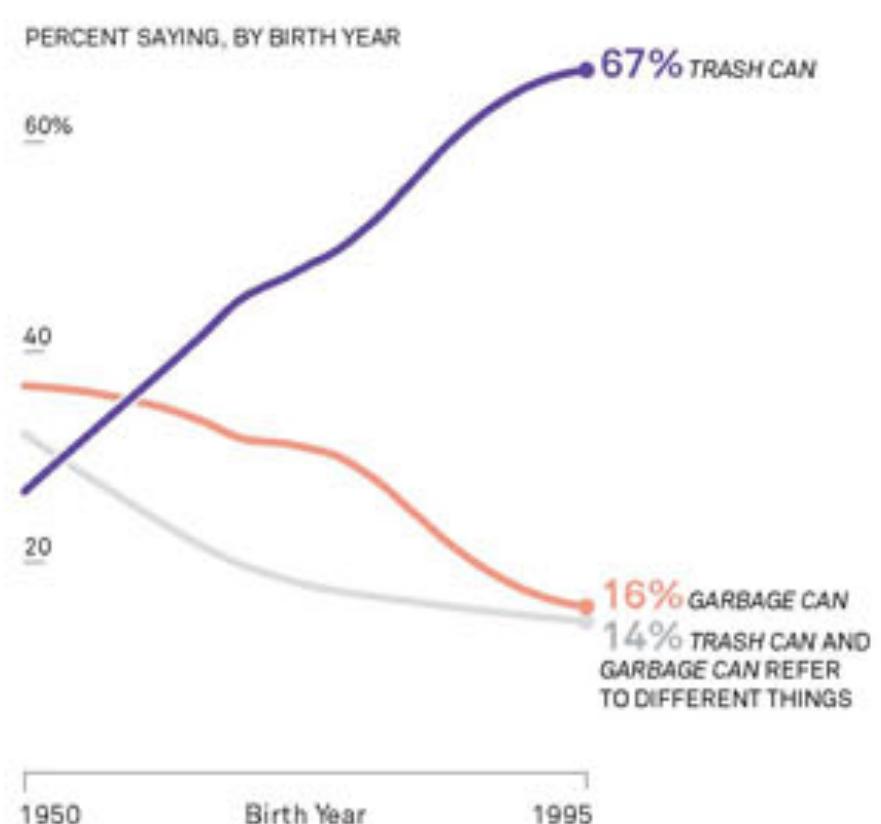
[Next ▶](#)

How Y'all, Youse and You Guys Talk. Josh Katz and Wilson Andrews

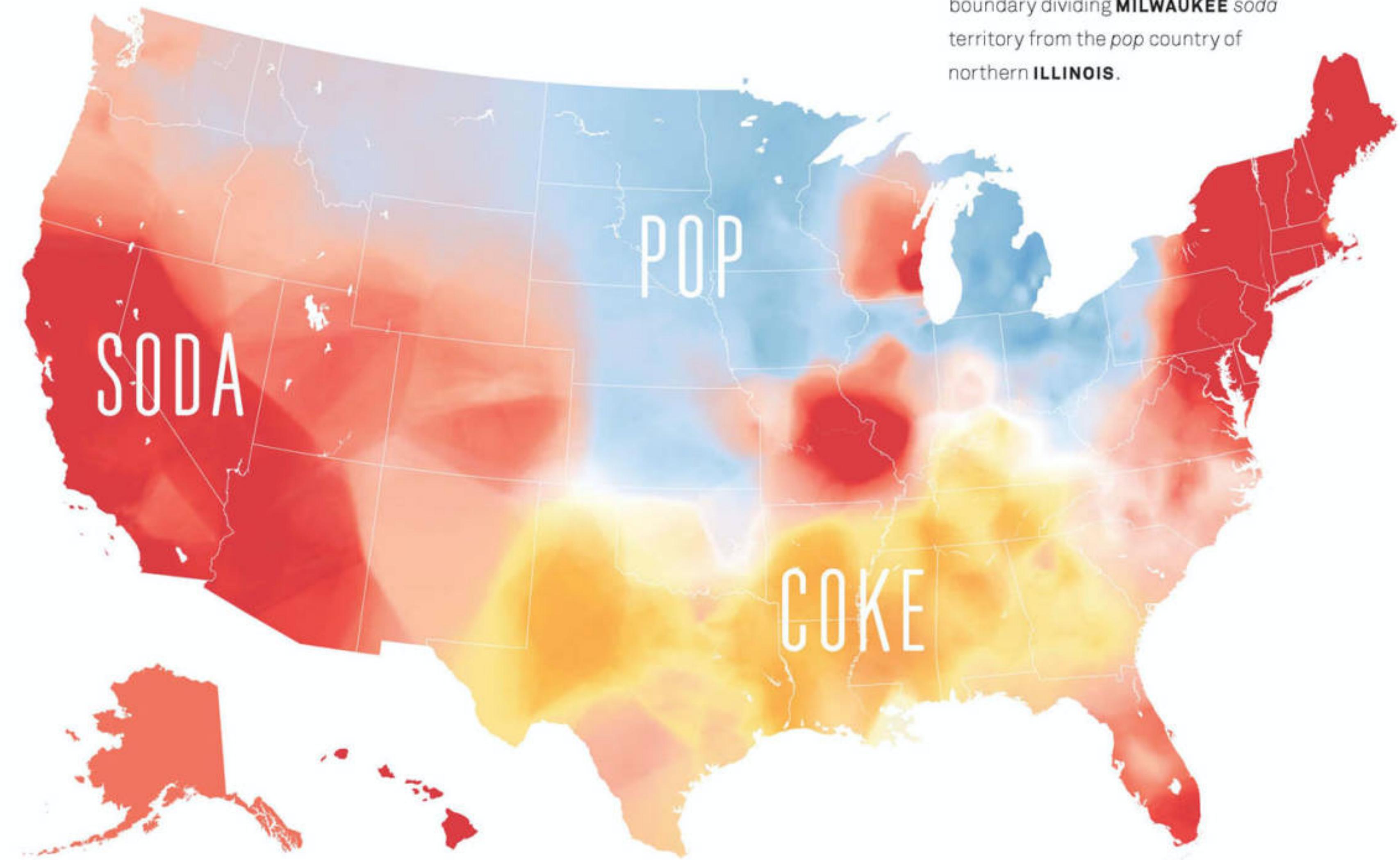
<https://archive.nytimes.com/www.nytimes.com/interactive/2013/12/20/sunday-review/dialect-quiz-map.mobile.html>

WHERE WE THROW OUR TRASH

Since the 1950s, trash can has become increasingly common in American speech. Two in three people born in the 1990s would say trash can over garbage can.



Sometimes the boundaries between terms are fuzzier. In **OKLAHOMA**, *soda*, *pop*, and *coke* all mix together. Contrast this with the sharp boundary dividing **MILWAUKEE** *soda* territory from the *pop* country of northern **ILLINOIS**.



Behind the dialect map interactive X +

https://knightlab.northwestern.edu/2014/01/20/behind-the-dialect-map-interactive-how-an-intern-created-the-new-york-times-most-popu

The Harvard Dialect Survey maps created by researchers in 2003.

Last March Katz was a grad student in the Department of Statistics at North Carolina State University and had recently decided he wanted to look more closely at an interesting set of data he'd seen 10 years prior, the Harvard Dialect Survey.

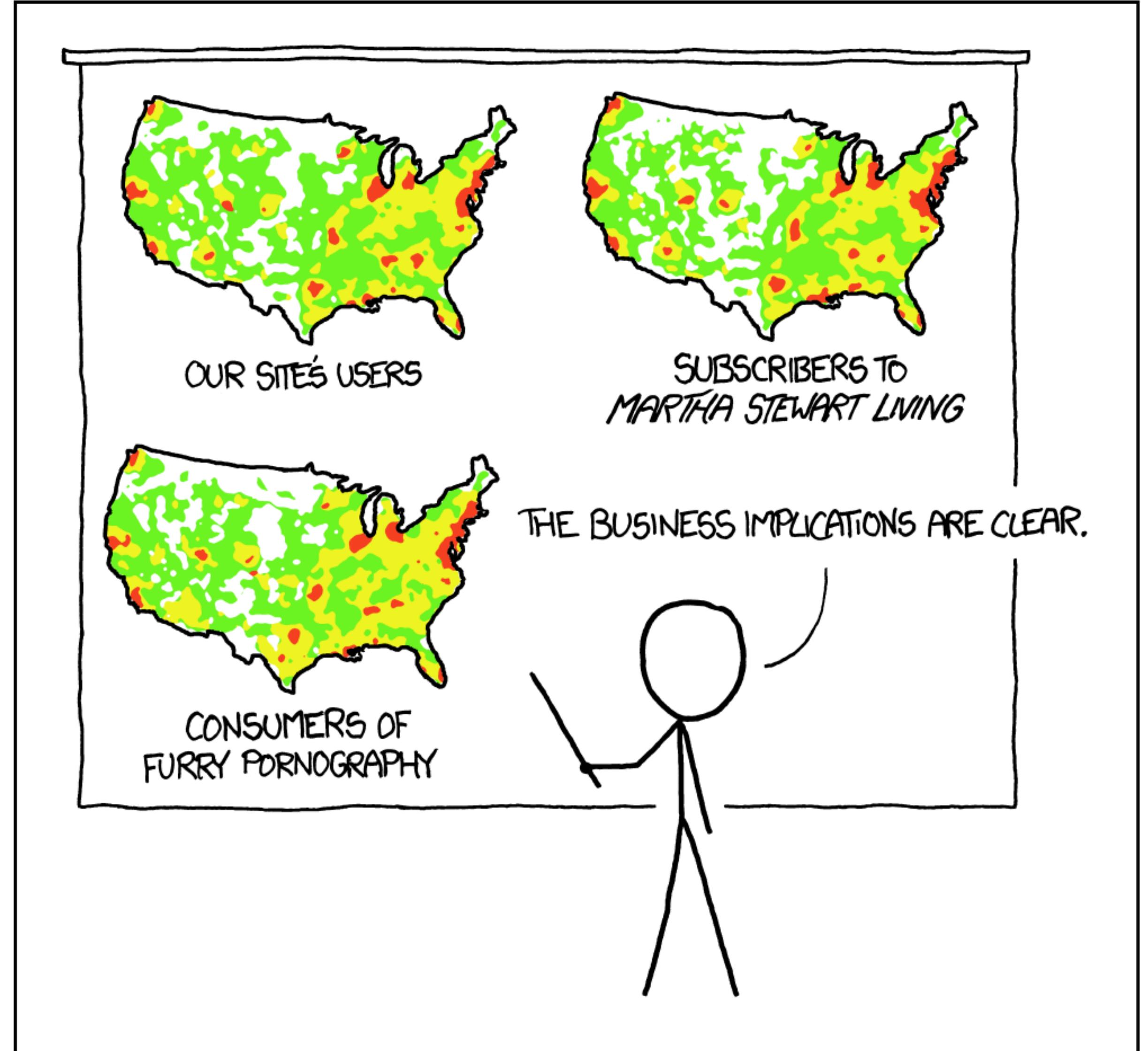
The study was based on the responses of more than 50,000 people to 122 questions on dialect, and had been presented by the researchers (Bert Vaux and Scott Golder) as a series of colored points on a map. While the data was interesting, Katz wanted to show a more elegant “smoothed estimate” of the same data.

Using the k-nearest neighbor algorithm and kernel density estimation (more detail [here](#)) he created a series of maps that showed the Harvard data in a series of maps most of us would call heat maps.

In June he posted those maps on the North Carolina State University website and on [RStudio.com](#), a community site for R developers.

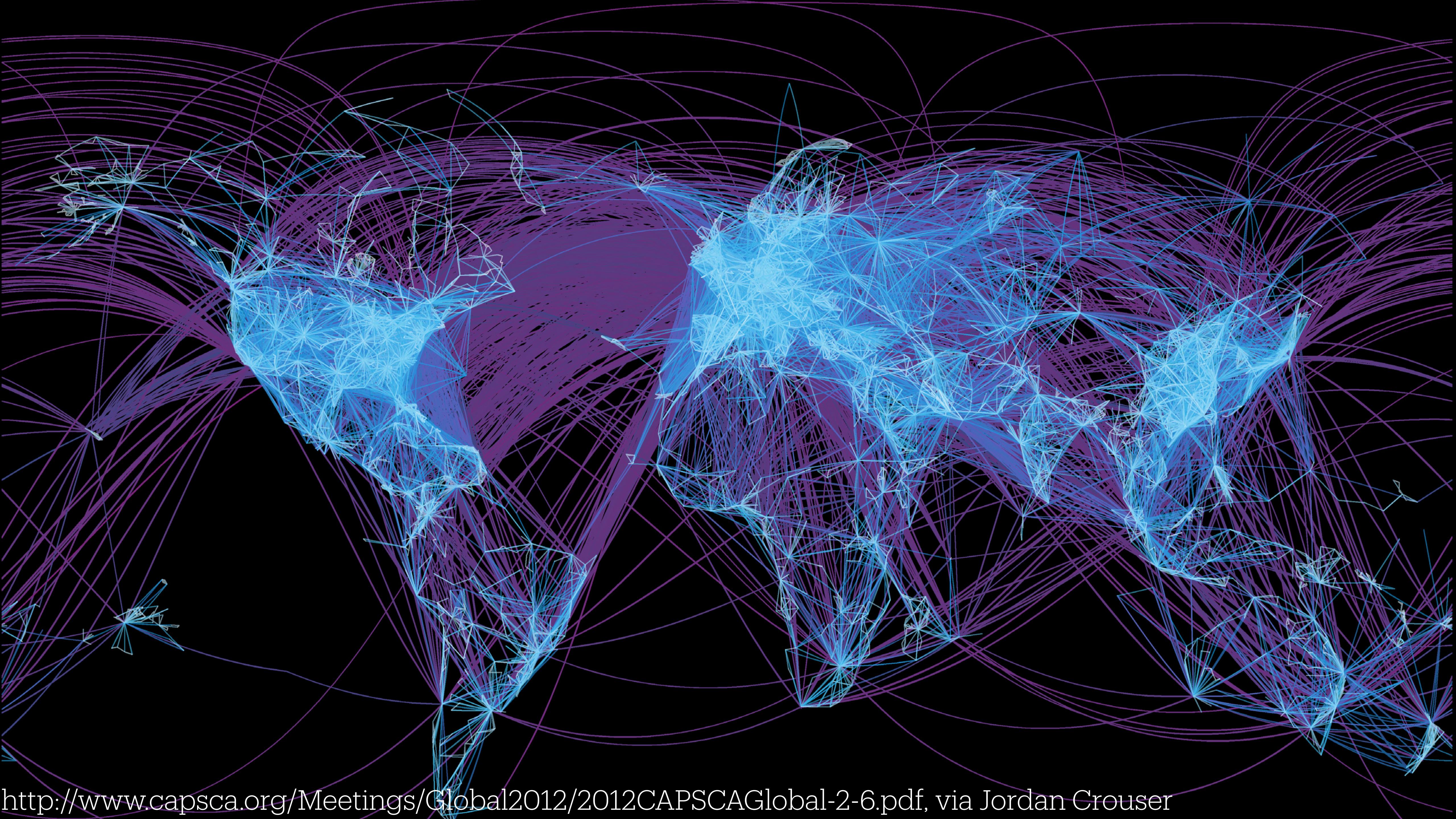
By August the graphics desk at the Times had discovered them and invited him to New York for an internship starting in September.

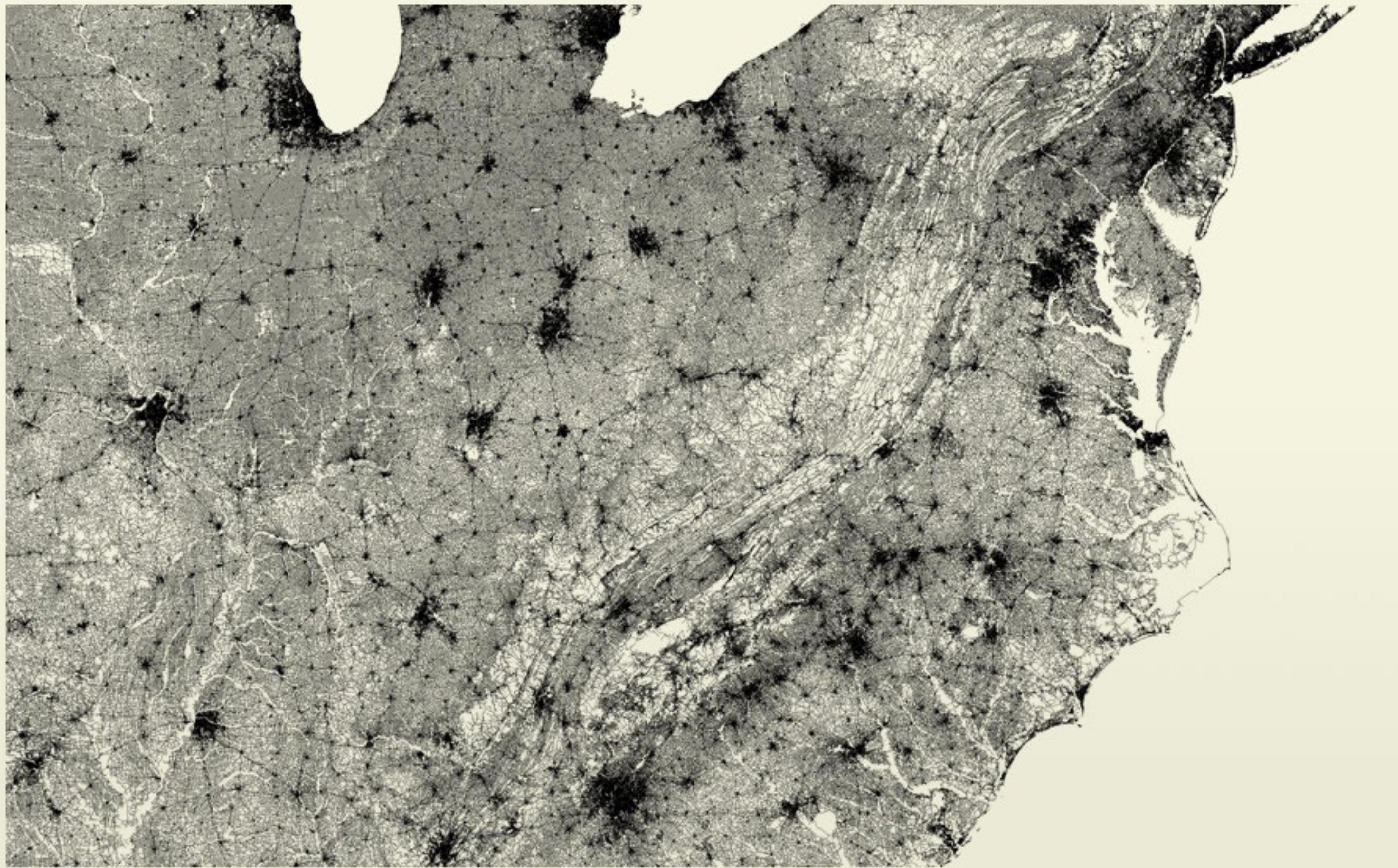
Though satisfied with the work he'd done with the data thus far, Katz had also come up with a plan to verify and update the data and turn it in to a quiz.



PET PEEVE #208:
GEOGRAPHIC PROFILE MAPS WHICH ARE
BASICALLY JUST POPULATION MAPS

Lines







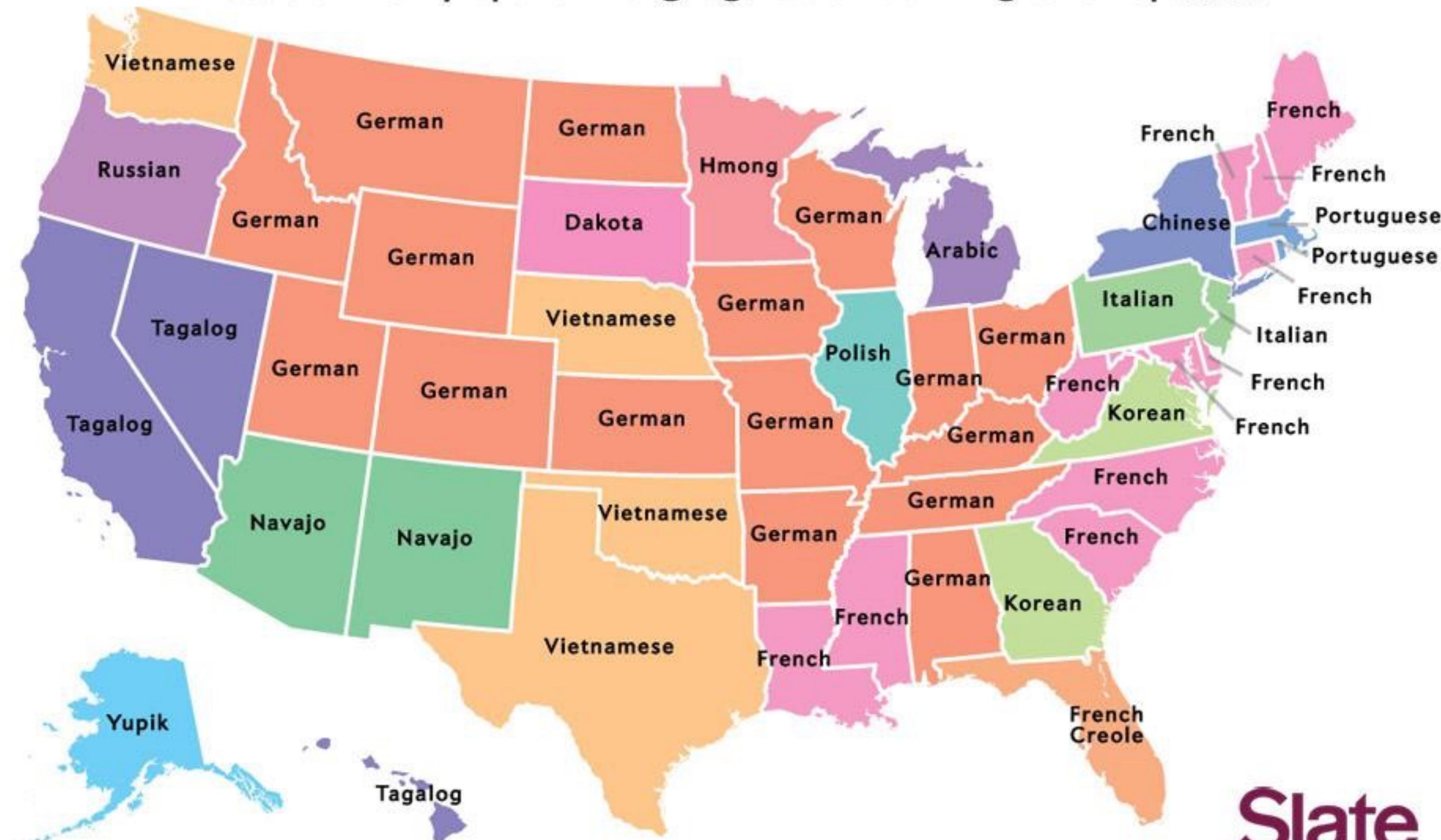
Polygons

Choropleth maps



Choropleth maps

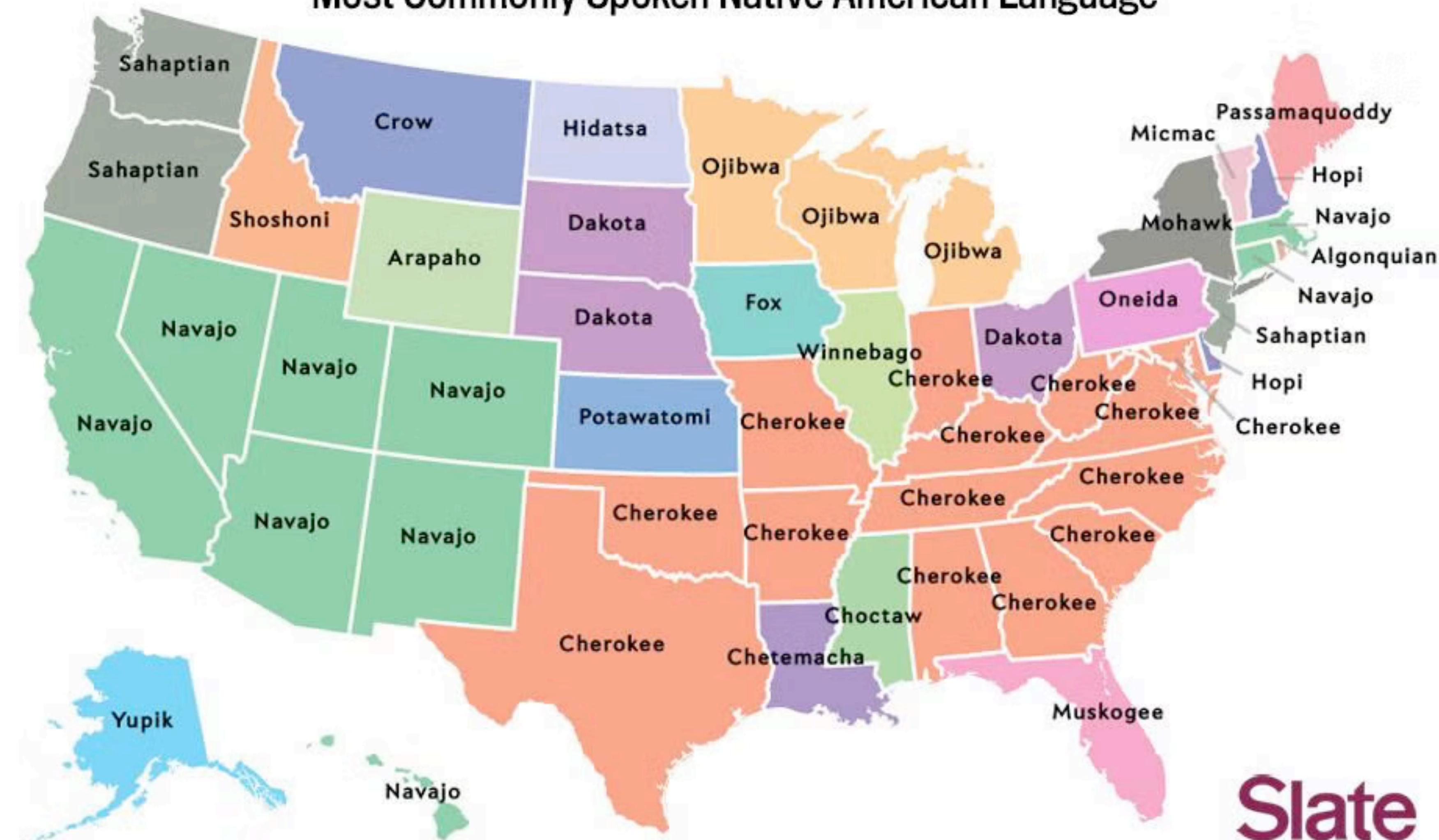
Most Commonly Spoken Language Other than English or Spanish



Slate

Choropleth maps

Most Commonly Spoken Native American Language



Slate

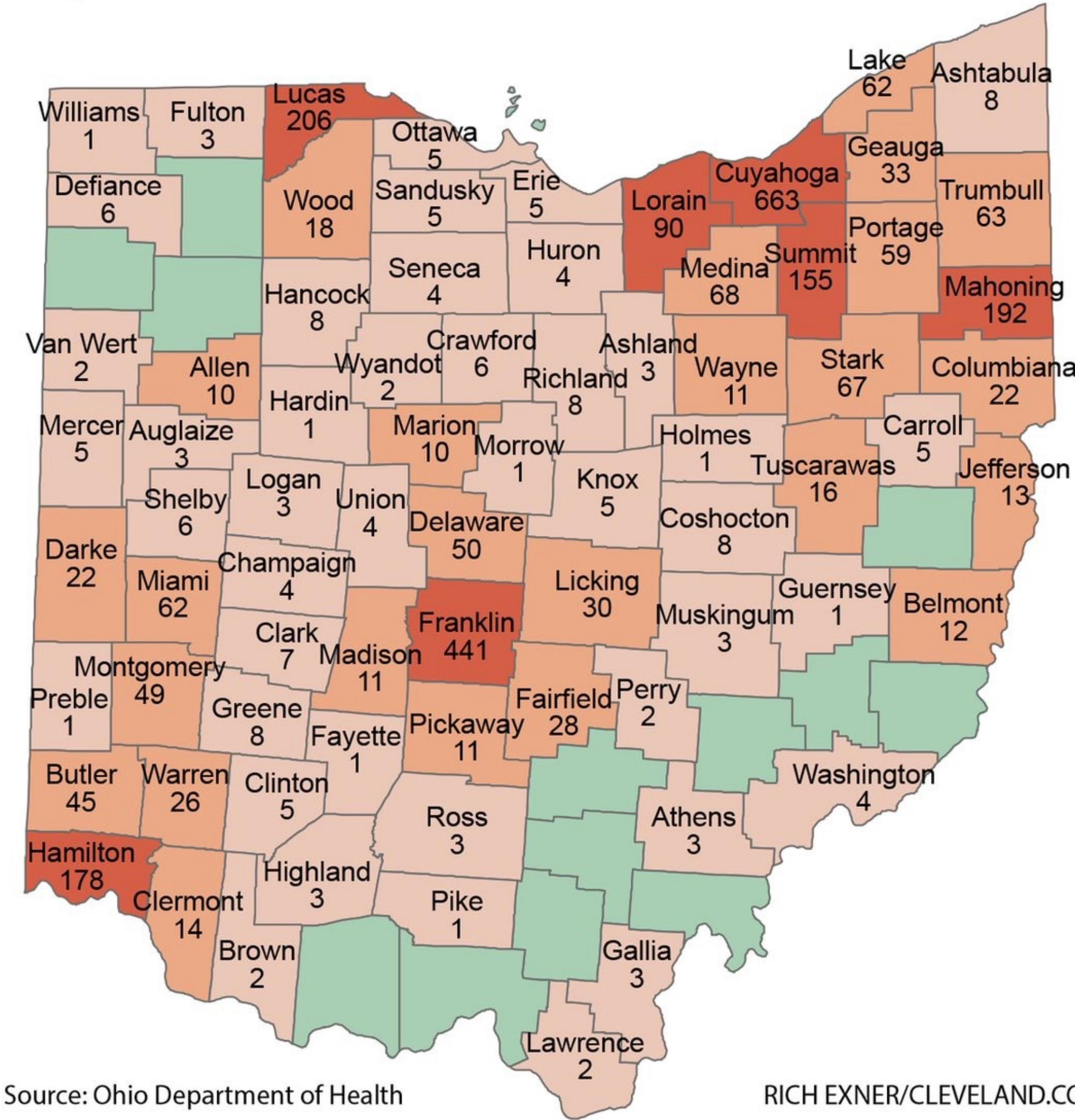
<https://slate.com/culture/2014/05/language-map-whats-the-most-popular-language-in-your-state.html>

“all maps of parameter estimates are misleading”

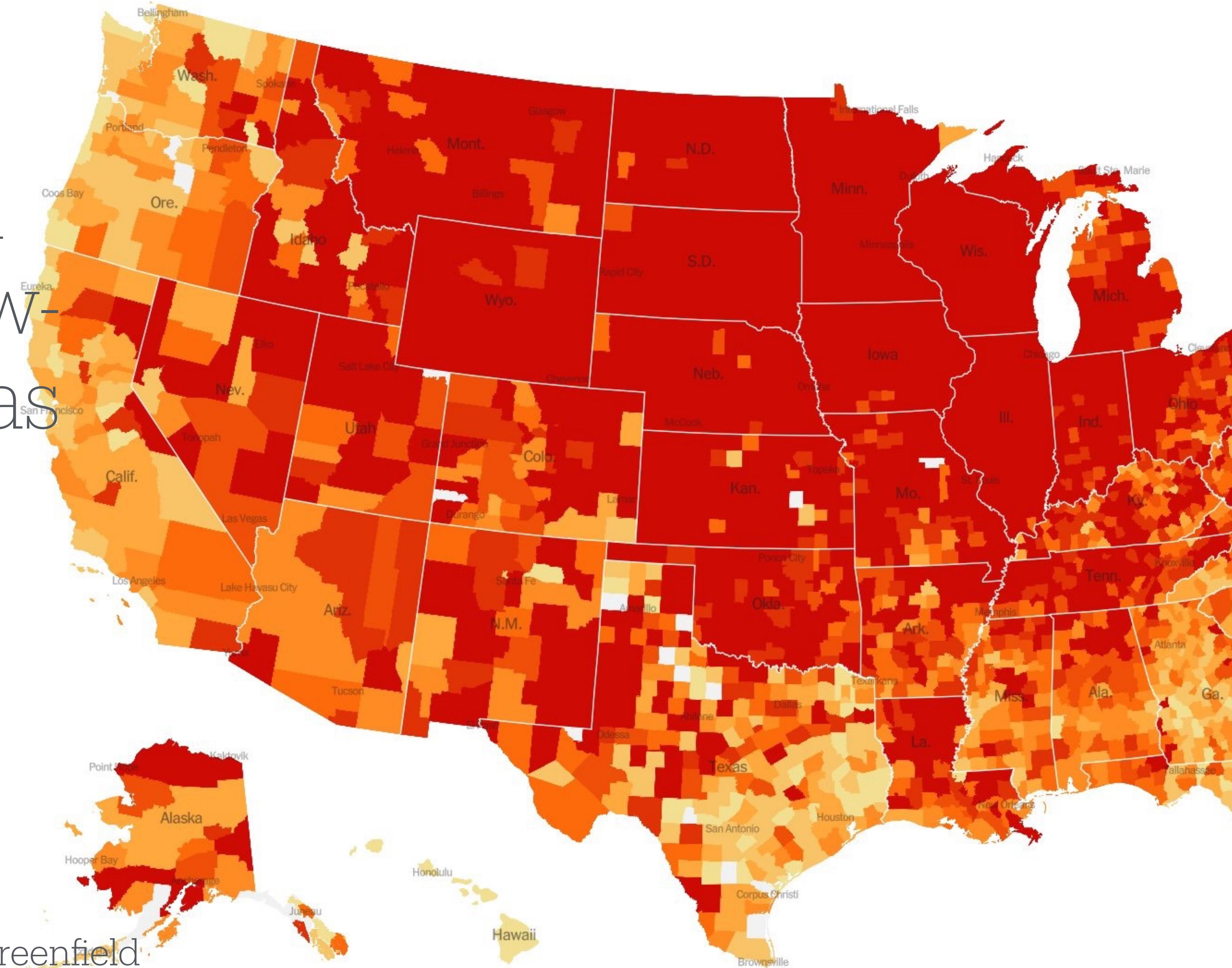
- Gelman and Price

2,902 confirmed coronavirus cases

Showing raw
numbers
highlights
high-
population
areas



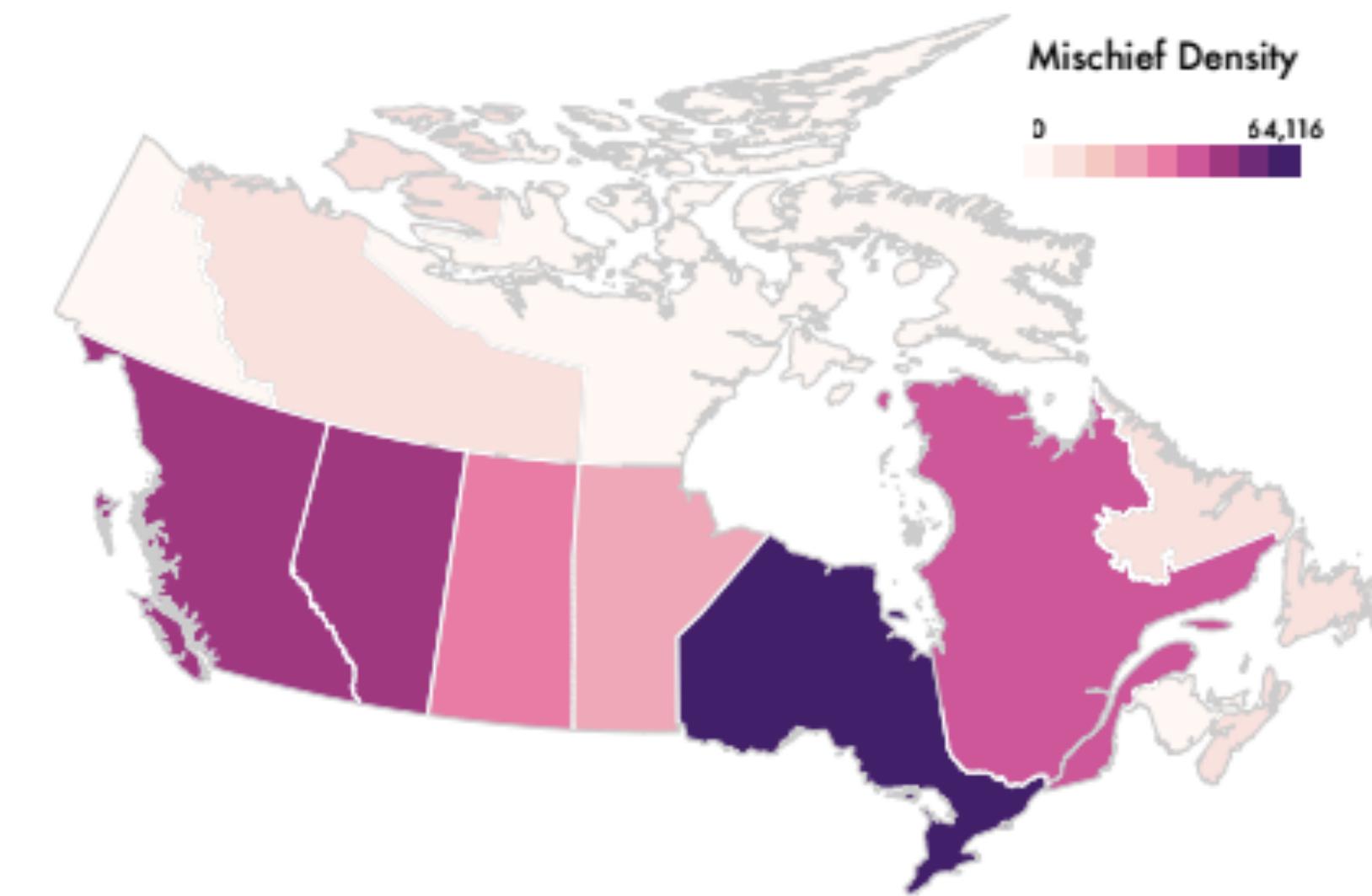
Showing rates
highlights high
variability in low-
population areas



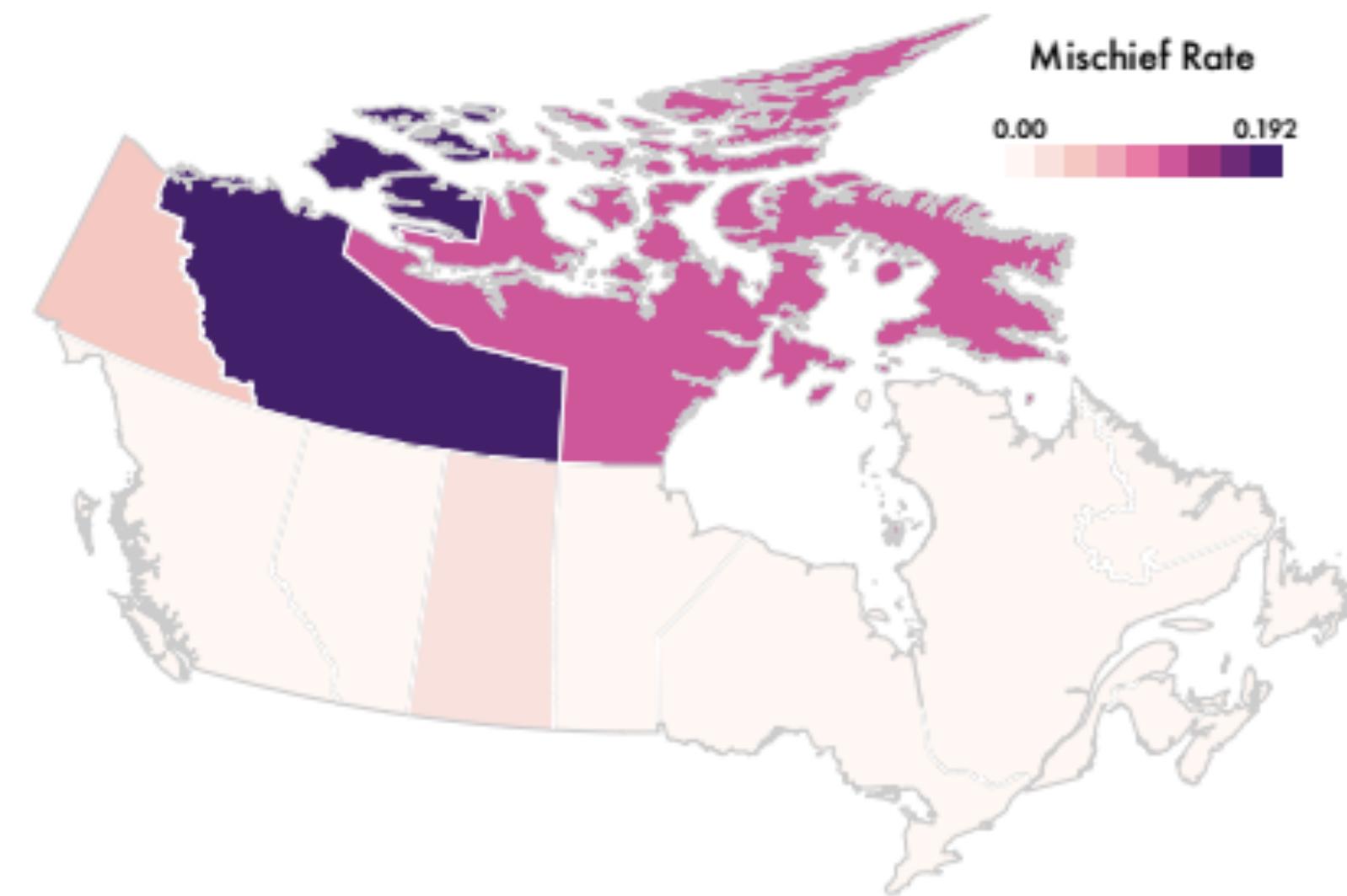
Coronavirus Cases Expanding. Doug Greenfield

<https://mapoftheweek.blogspot.com/2020/11/coronavirus-cases-expanding.html>

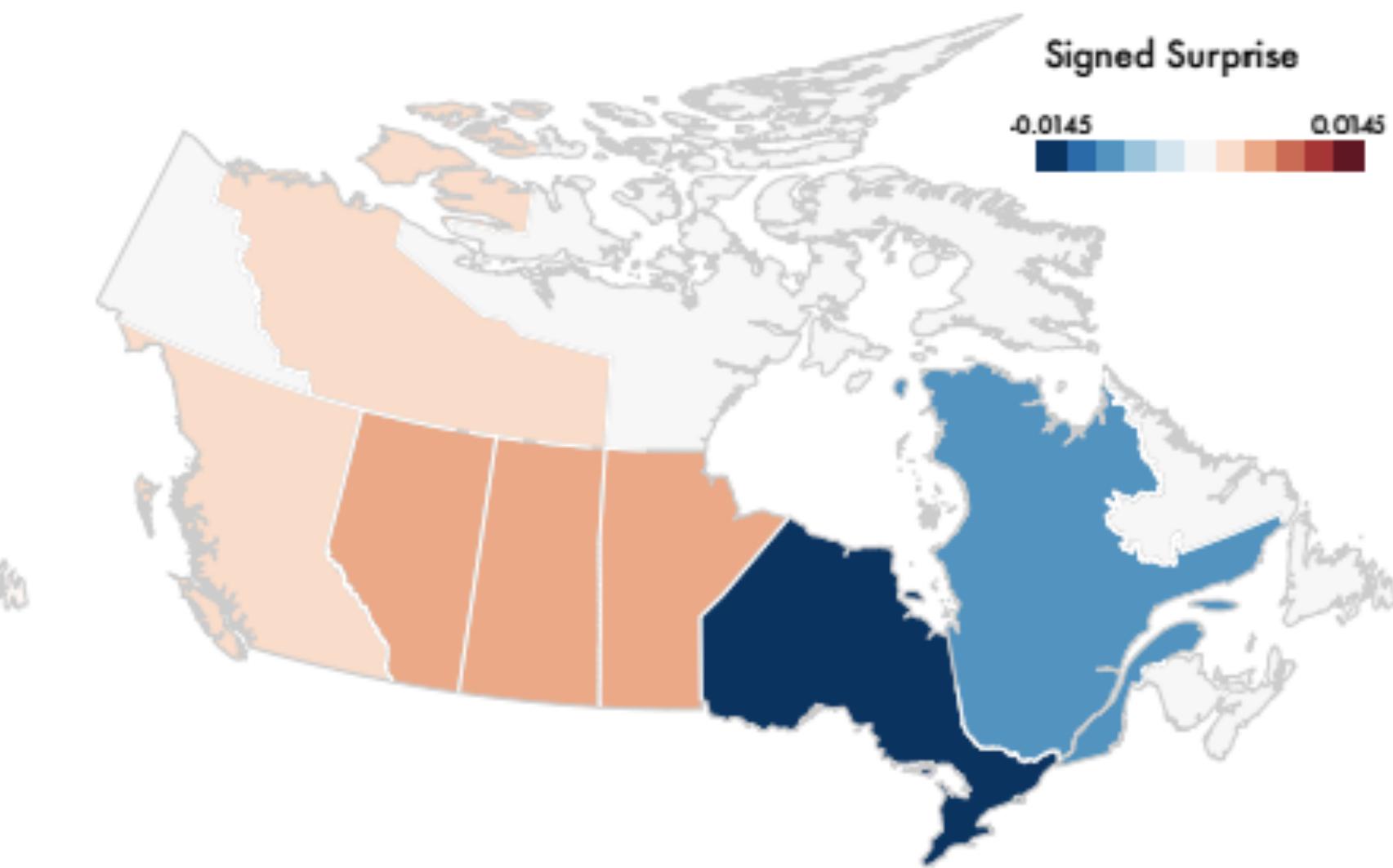
Surprise! Bayesian Weighting for De-Biasing Thematic Maps.



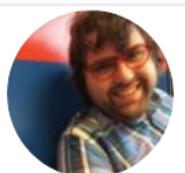
(a) The **Event Density** of “mischief” in Canada.



(b) The per-capita **Event Rate** of mischief.



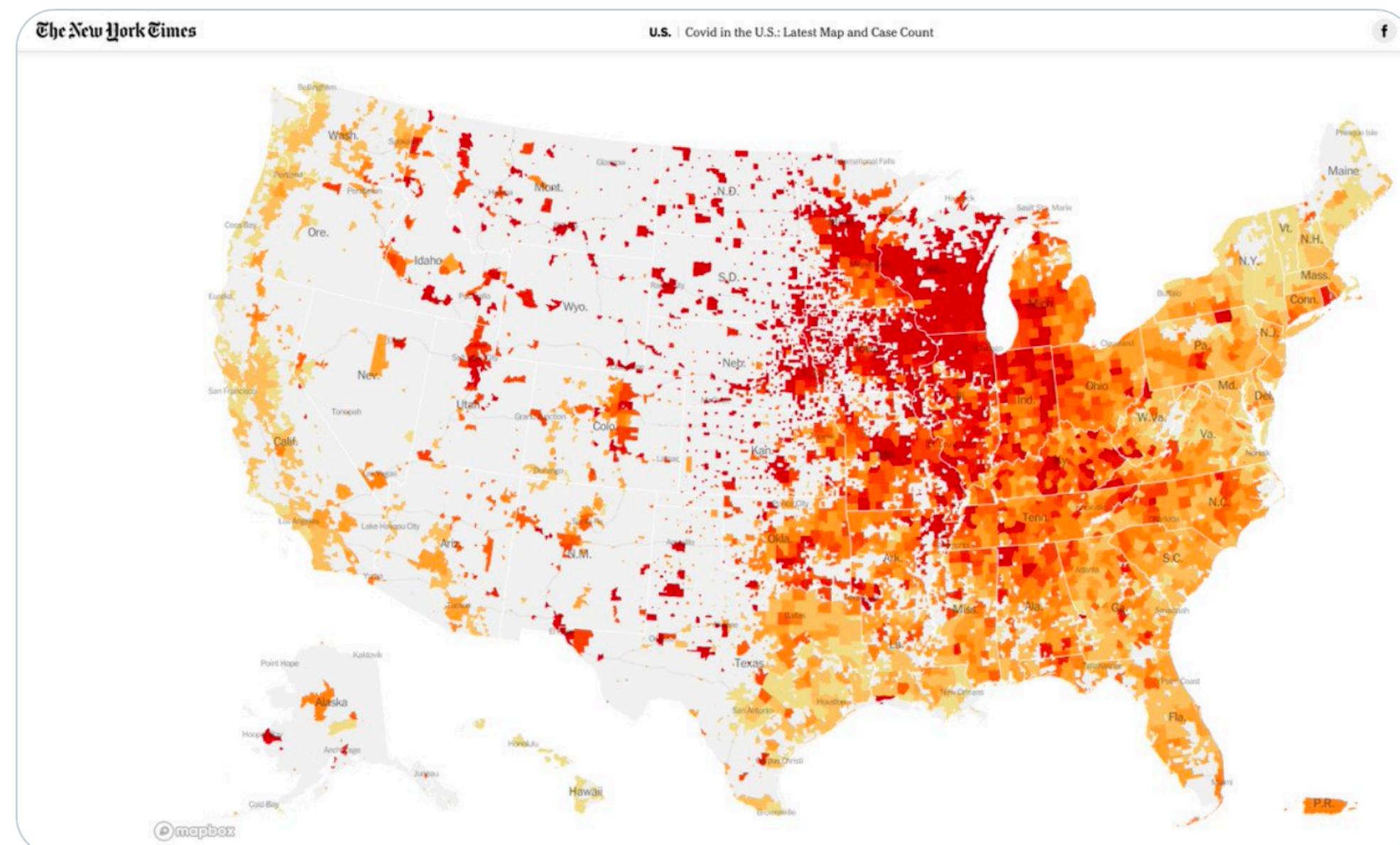
(c) The **Surprise Map** of mischief.



Ben Lamb
@bennyfactor

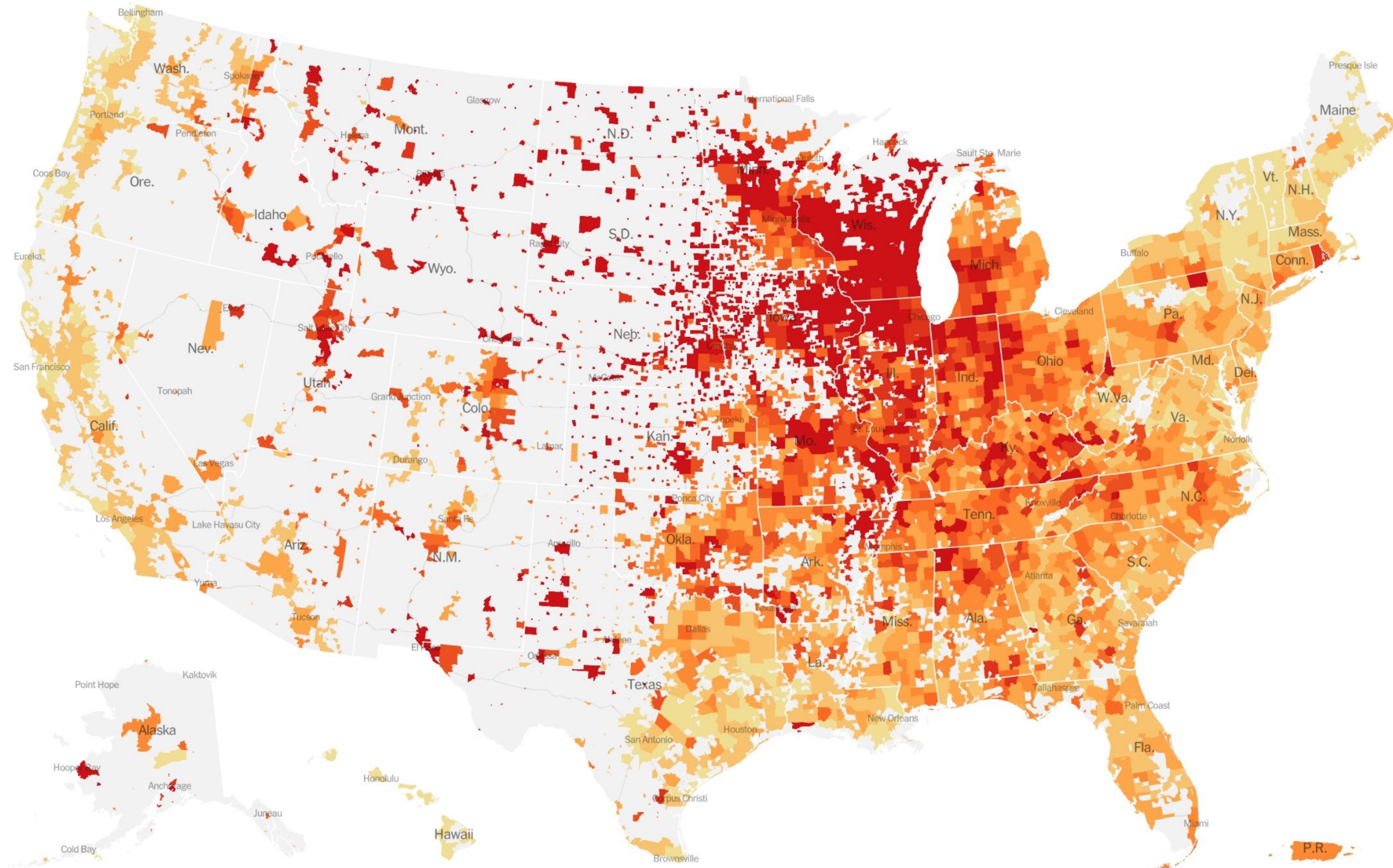
...

While I hate the sheer amount of covid illness this map represents, I think it's really smart what the NYT did here in not coloring in areas where the population density is below 10/sq mile. Gives a vastly more useful understanding of who is sick, where than a usual choropleth

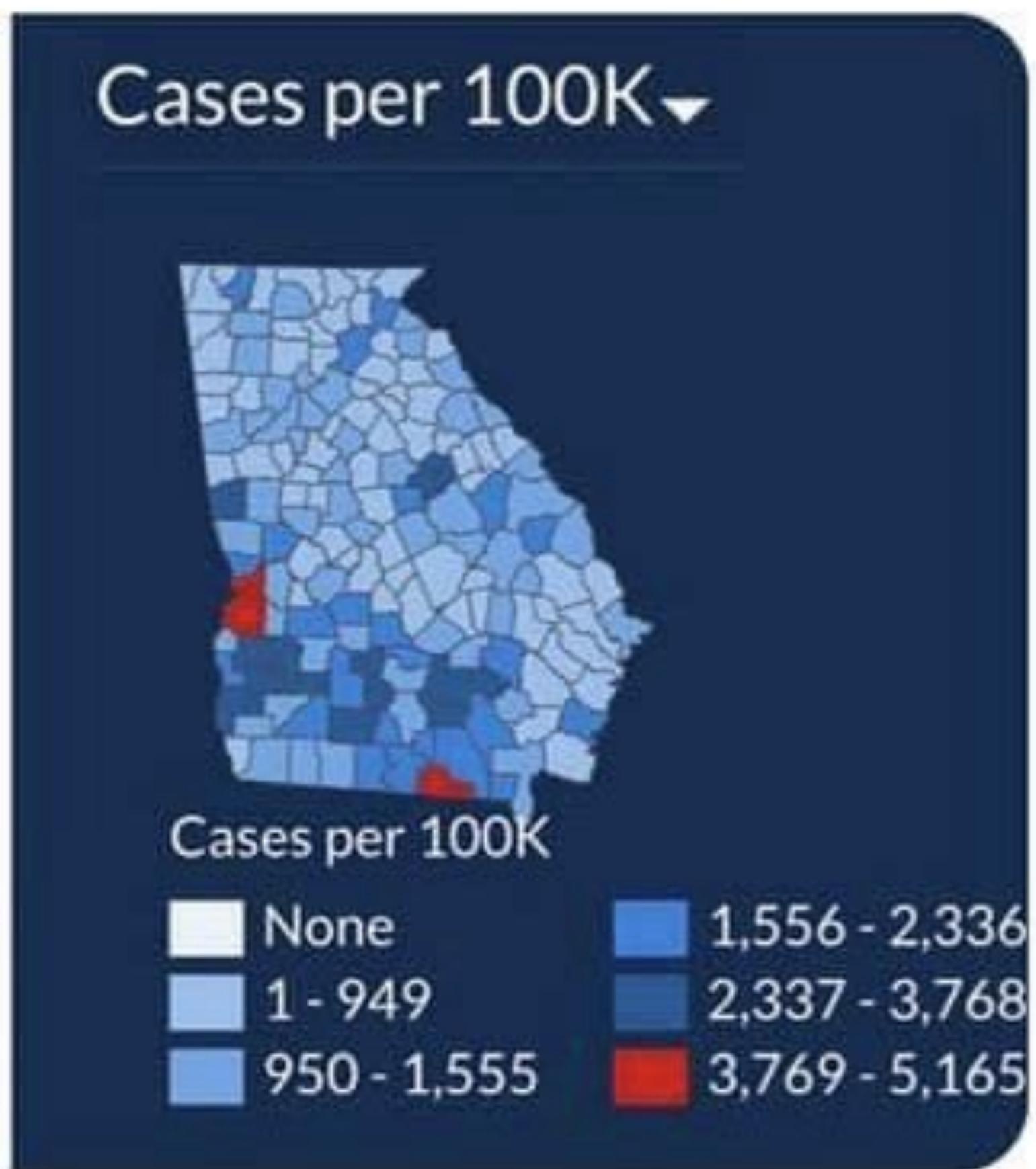
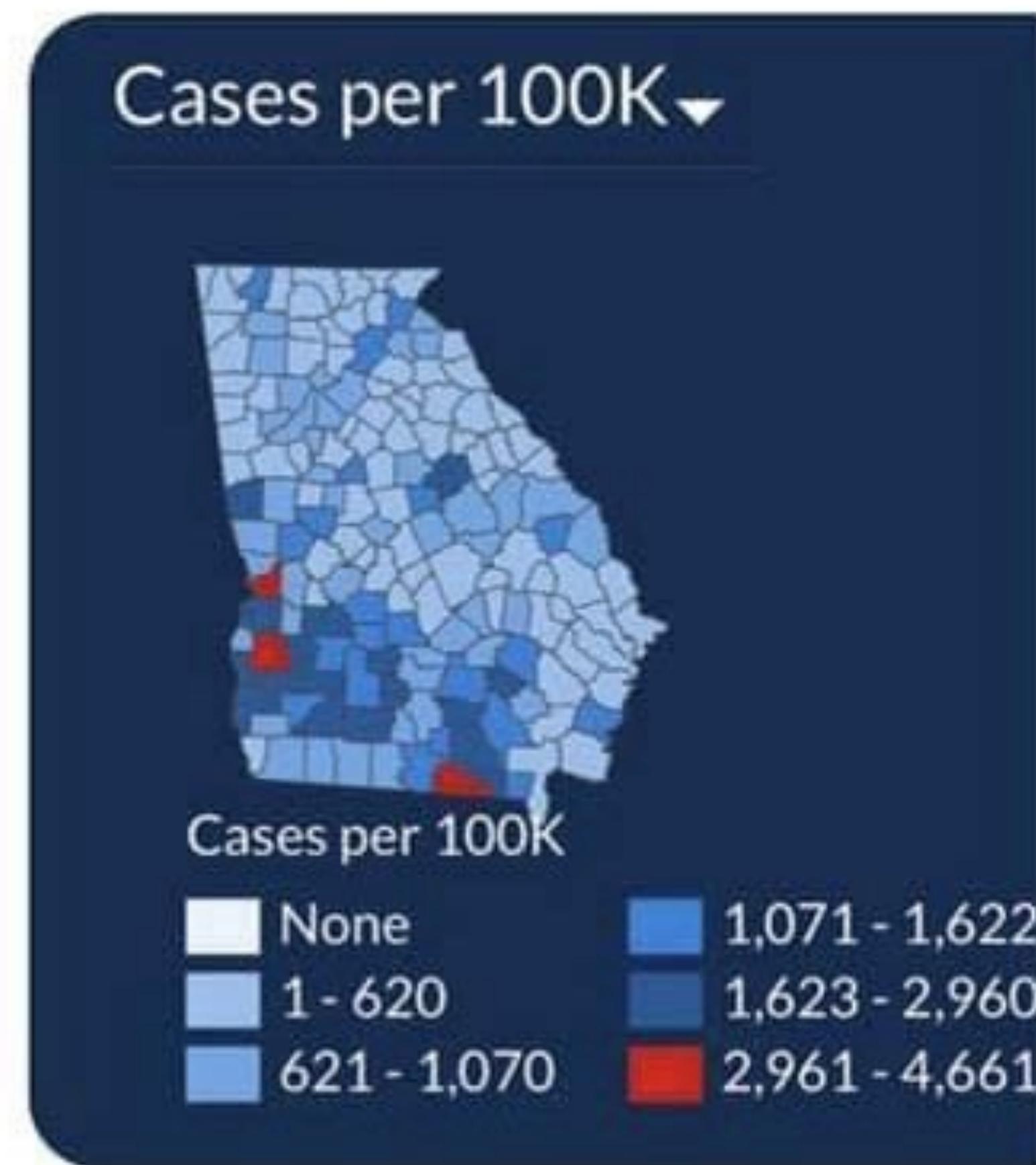


10:22 PM · Nov 4, 2020 · Twitter Web App

2 Retweets **6 Likes**



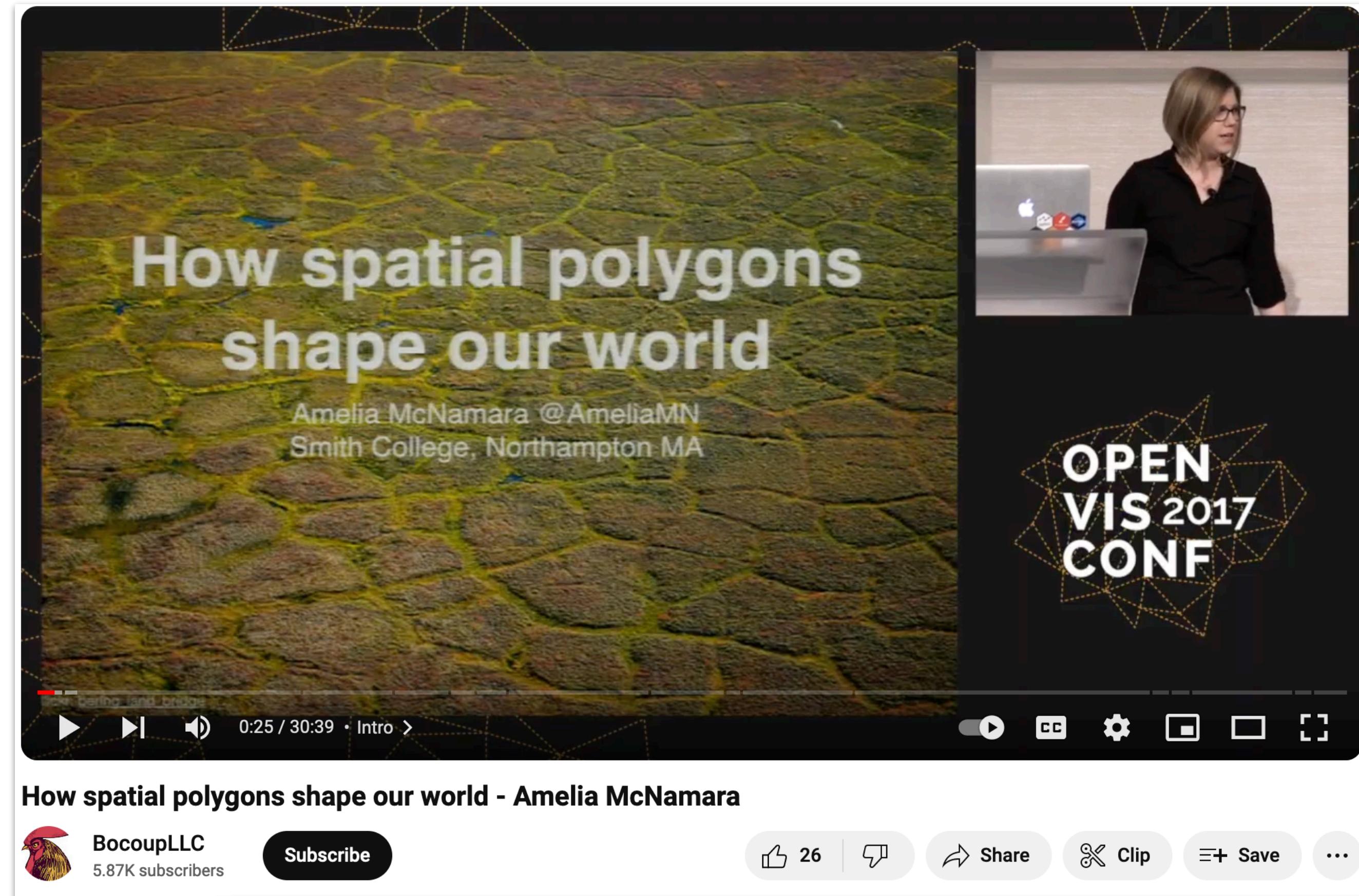
If things are changing over time, watch the legend



via Corona-cartography: what we learned from a year of COVID-19 maps

<https://hi.stamen.com/corona-cartography-what-we-learned-from-a-year-of-covid-19-maps-bd1f022bc5e0>

Modifiable Areal Unit Problem

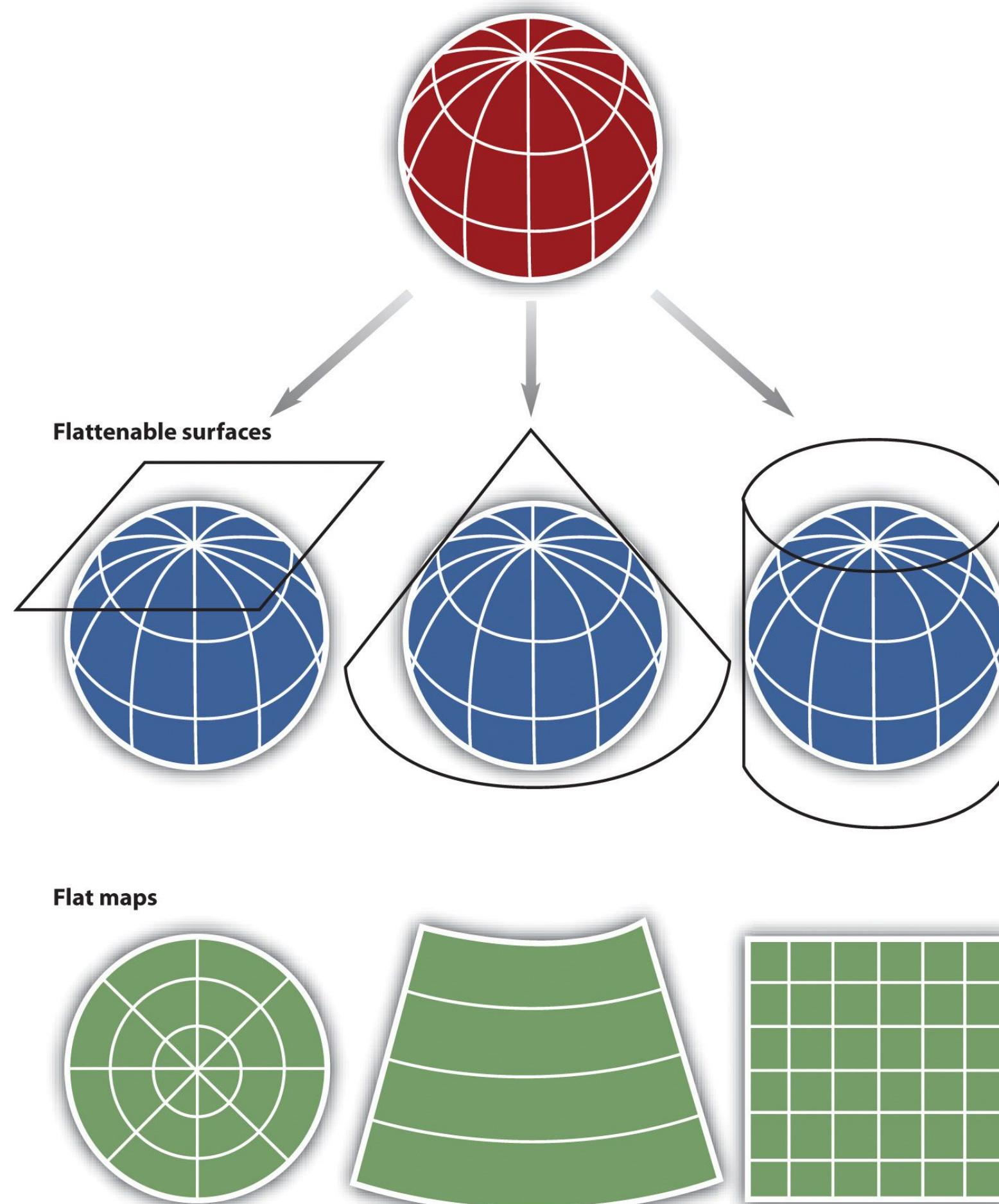


2017 version (30 minutes) <https://www.youtube.com/watch?v=wn5larsRHro>

2018 version (60 minutes) <https://www.youtube.com/watch?v=bjFzWElyD3o>

Projections

Map projections



Campbell, J.E., & Shin, M. (2012). Geographic Information System Basics.

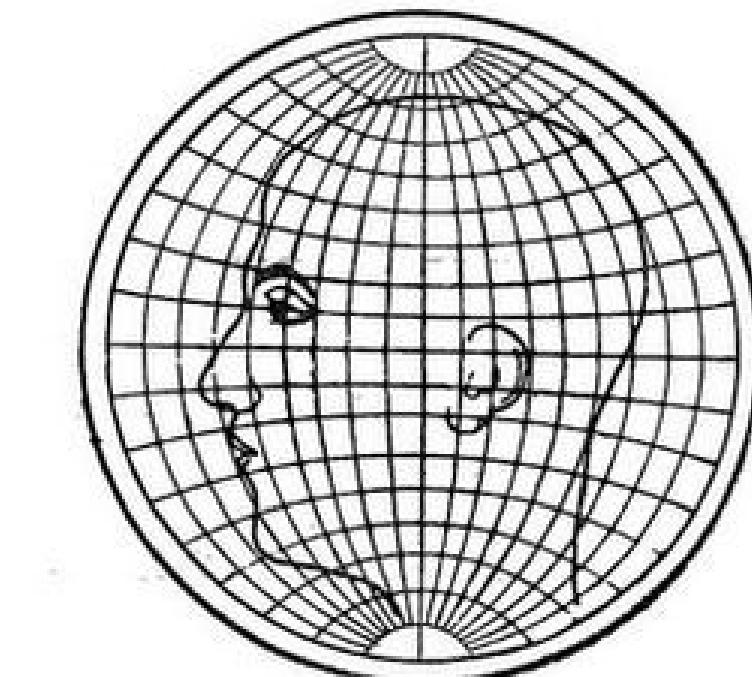


FIG. 42.—Man's head drawn on globular projection.

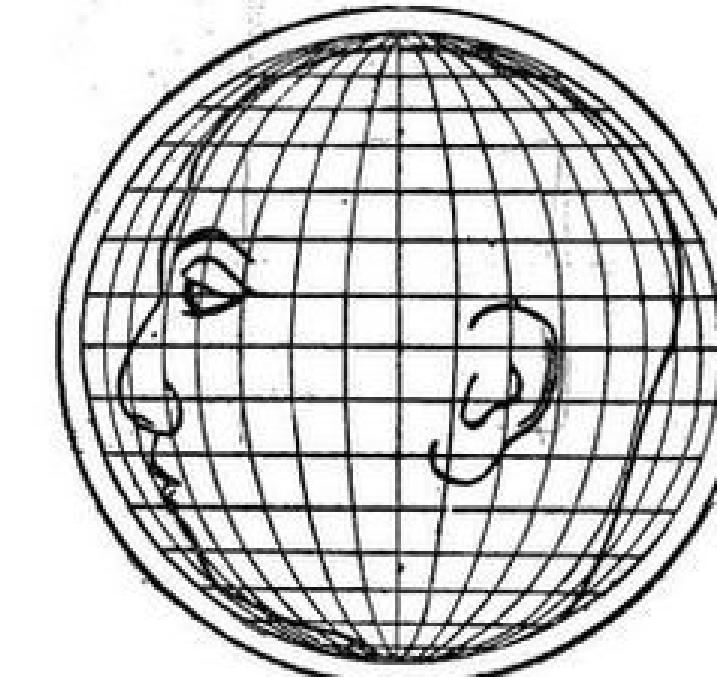


FIG. 43.—Man's head plotted on orthographic projection.

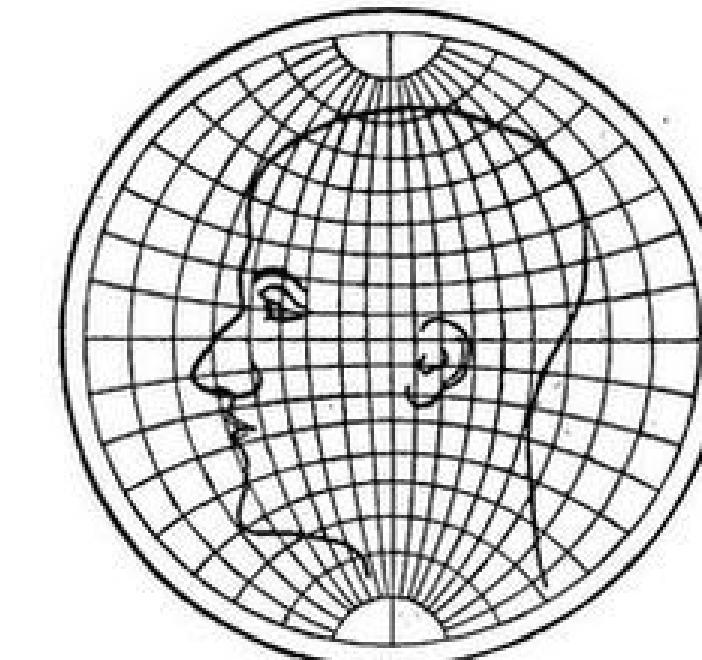


FIG. 44.—Man's head plotted on stereographic projection.

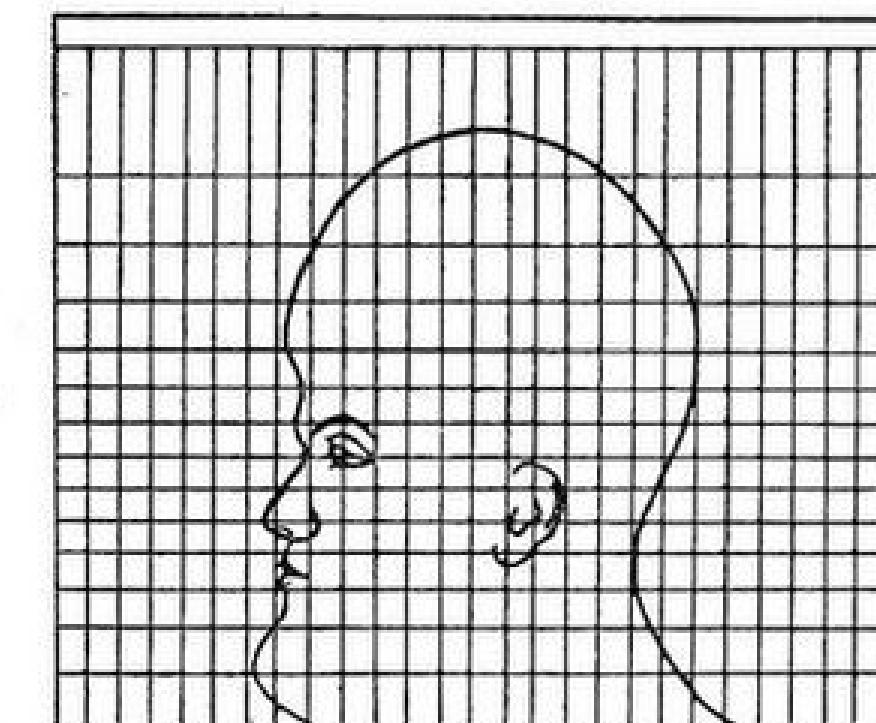
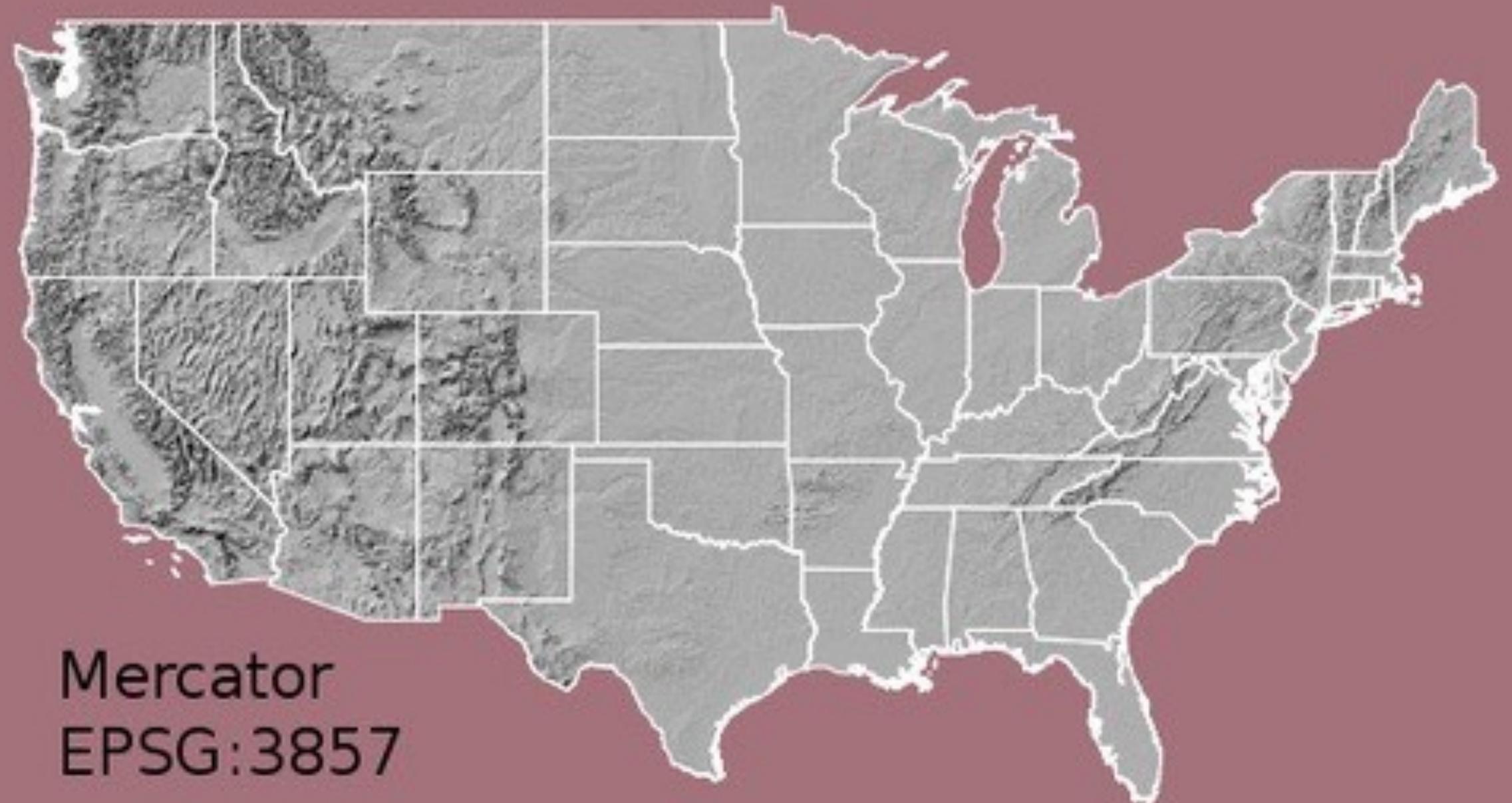


FIG. 45.—Man's head plotted on Mercator projection.

Deetz, C. H., & Adams, O. S. (1921). Elements of map projection with applications to map and chart construction.



Mercator
EPSG:3857



U.S. National Atlas
Equal Area
EPSG:2163

UTM Zone 11N
EPSG:2955



WGS 84
EPSG:4326

The True Size of Africa

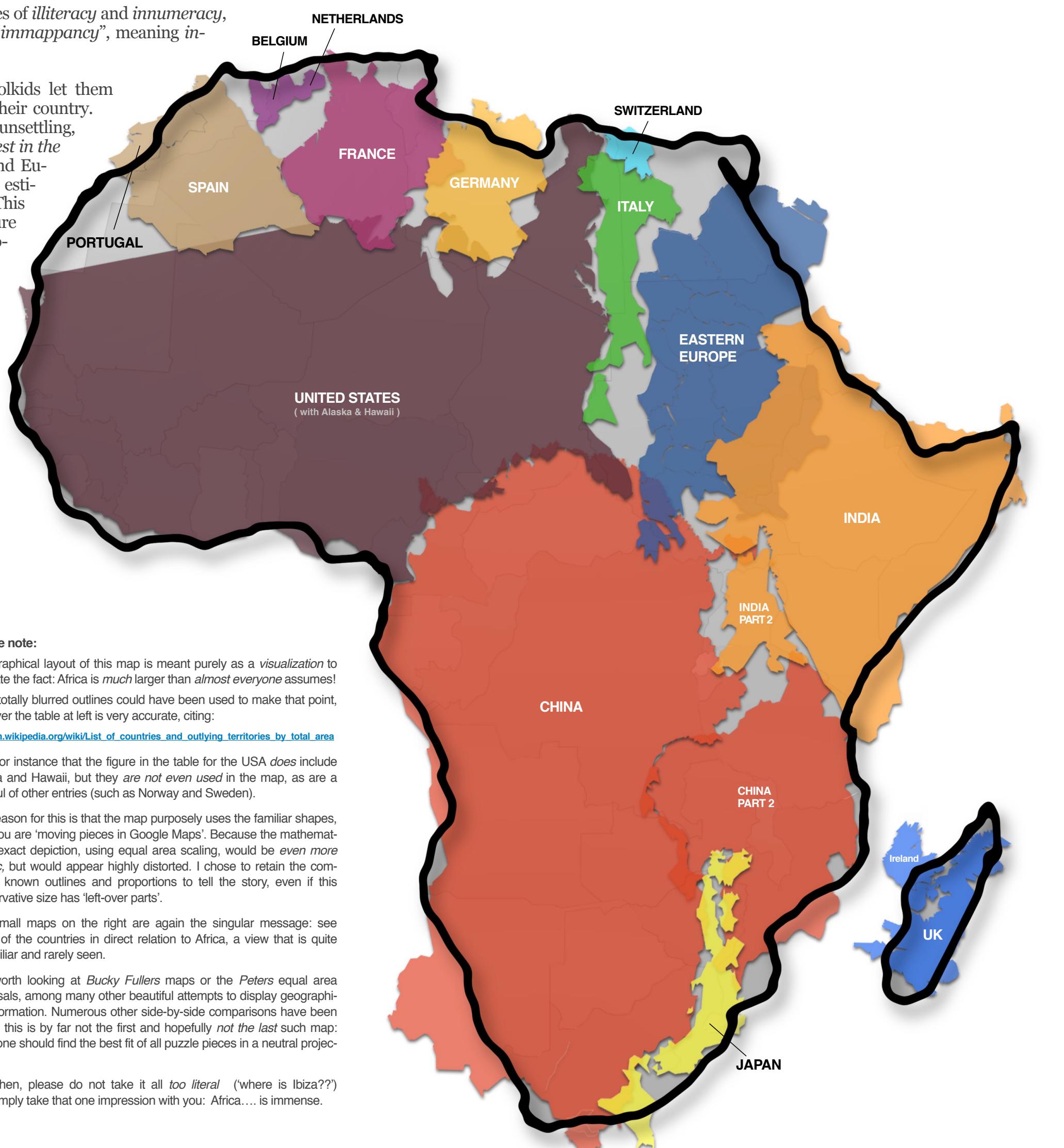
A small contribution in the fight against rampant *Immappancy*, by Kai Krause

In addition to the well known social issues of *illiteracy* and *innumeracy*, there also should be such a concept as "*immappancy*", meaning *in-sufficient geographical knowledge*.

A survey with random American schoolkids let them guess the population and land area of their country. Not entirely unexpected, but still rather unsettling, the majority chose "*1-2 billion*" and "*largest in the world*", respectively. Even with Asian and European college students, geographical estimates were often off by factors of 2-3. This is partly due to the highly distorted nature of the predominantly used mapping projections (such as *Mercator*).

A particularly extreme example is the worldwide misjudgement of the true size of Africa. This single image tries to embody the massive scale, which is larger than the USA, China, India, Japan and all of Europe - combined!

COUNTRY	AREA x 1000 km ²
USA	9.629
China	9.573
India	3.287
Mexico	1.964
Peru	1.285
France	633
Spain	506
Papua New Guinea	462
Sweden	441
Japan	378
Germany	357
Norway	324
Italy	301
New Zealand	270
United Kingdom	243
Nepal	147
Bangladesh	144
Greece	132
TOTAL	30.102
AFRICA	30.221
Just for Reference: The Surface of the MOON	37.930



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This work is placed in the Public Domain

Top 100 Countries

Area in square kilometers, Percentage of World Total
Sources: Britannica, Wikipedia, Almanac 2010

	AREA km ²	%
1	17.098.242	11,50
2	9.984.670	6,70
3	9.596.961	6,40
4	9.629.091	6,40
5	8.514.877	5,70
6	7.692.024	5,20
7	3.287.263	2,30
8	2.780.400	2,00
9	2.724.900	1,80
10	2.505.813	1,70
11	2.381.741	1,60
12	2.344.858	1,60
13	2.166.086	1,50
14	2.149.690	1,40
15	1.964.375	1,30
16	1.860.360	1,30
17	1.759.540	1,20
18	1.628.750	1,10
19	1.564.100	1,10
20	1.285.216	0,86
21	1.284.000	0,86
22	1.267.000	0,85
23	1.246.700	0,85
24	1.240.192	0,83
25	1.221.037	0,82
26	1.141.748	0,76
27	1.104.300	0,74
28	1.098.581	0,74
29	1.025.520	0,69
30	1.002.000	0,67
31	945.087	0,63
32	923.768	0,62
33	912.050	0,61
34	824.116	0,55
35	801.590	0,54
36	796.095	0,53
37	783.562	0,53
38	756.102	0,51
39	752.612	0,51
40	676.578	0,45
41	652.090	0,44
42	637.657	0,43
43	632.834	0,43
44	622.984	0,42
45	603.500	0,41
46	587.041	0,39
47	582.000	0,39
48	580.367	0,39
49	527.968	0,35
50	513.120	0,34
51	505.992	0,34
52	488.100	0,33
53	475.442	0,32
54	462.840	0,31
55	447.400	0,30
56	446.550	0,30
57	441.370	0,30
58	438.317	0,29
59	406.752	0,27
60	390.757	0,26
61	377.930	0,25
62	357.114	0,24
63	342.000	0,23
64	338.419	0,23
65	331.212	0,22
66	330.803	0,22
67	323.802	0,22
68	322.463	0,22
69	312.685	0,21
70	309.500	0,21
71	301.336	0,20
72	300.000	0,20
73	274.222	0,18
74	270.467	0,18
75	267.668	0,18
76	266.000	0,18
77	256.369	0,20
78	245.857	0,17
79	242.900	0,16
80	241.038	0,16
81	238.539	0,16
82	238.391	0,16
83	236.800	0,16
84	214.969	0,14
85	207.600	0,14
86	199.951	0,13
87	196.722	0,13
88	185.180	0,12
89	181.035	0,12
90	176.215	0,12
91	163.820	0,11
92	163.610	0,11
93	147.181	0,10
94	143.998	0,10
95	143.100	0,10
96	131.957	0,09
97	130.373	0,09
98	120.538	0,08
99	118.484	0,08
100	117.600	0,08
TOP 100 TOTAL		132.632.524
89,34		



blocks.roadtolarissa.com/zanarmstrc X +

https://blocks.roadtolarissa.com/zanarmstrong/raw/caa2da1ea1558cdc3357/index.html

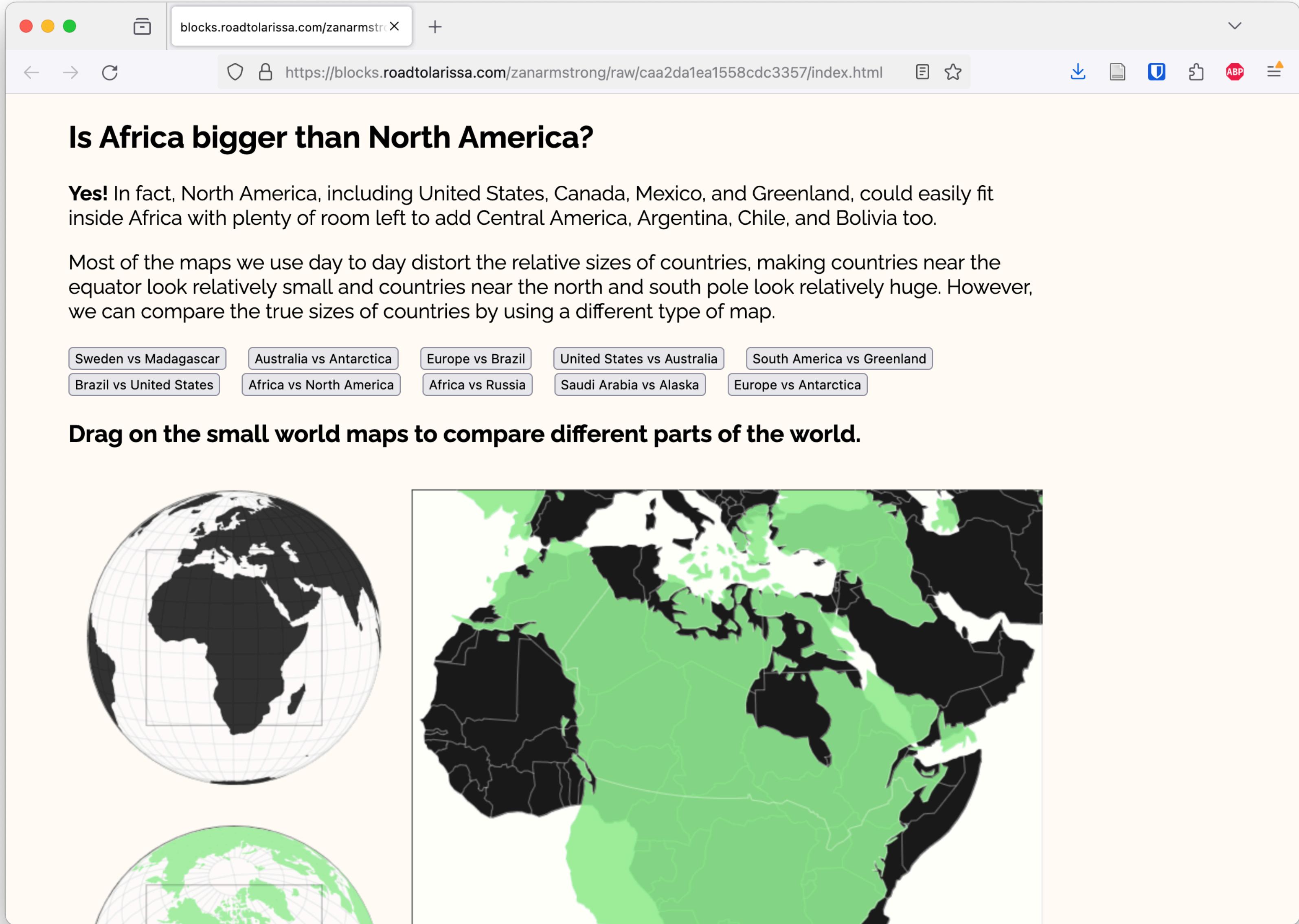
Is Africa bigger than North America?

Yes! In fact, North America, including United States, Canada, Mexico, and Greenland, could easily fit inside Africa with plenty of room left to add Central America, Argentina, Chile, and Bolivia too.

Most of the maps we use day to day distort the relative sizes of countries, making countries near the equator look relatively small and countries near the north and south pole look relatively huge. However, we can compare the true sizes of countries by using a different type of map.

[Sweden vs Madagascar](#) [Australia vs Antarctica](#) [Europe vs Brazil](#) [United States vs Australia](#) [South America vs Greenland](#)
[Brazil vs United States](#) [Africa vs North America](#) [Africa vs Russia](#) [Saudi Arabia vs Alaska](#) [Europe vs Antarctica](#)

Drag on the small world maps to compare different parts of the world.



Is Africa bigger than North America? Zan Armstrong.

<https://blocks.roadtolarissa.com/zanarmstrong/raw/caa2da1ea1558cdc3357/index.html>