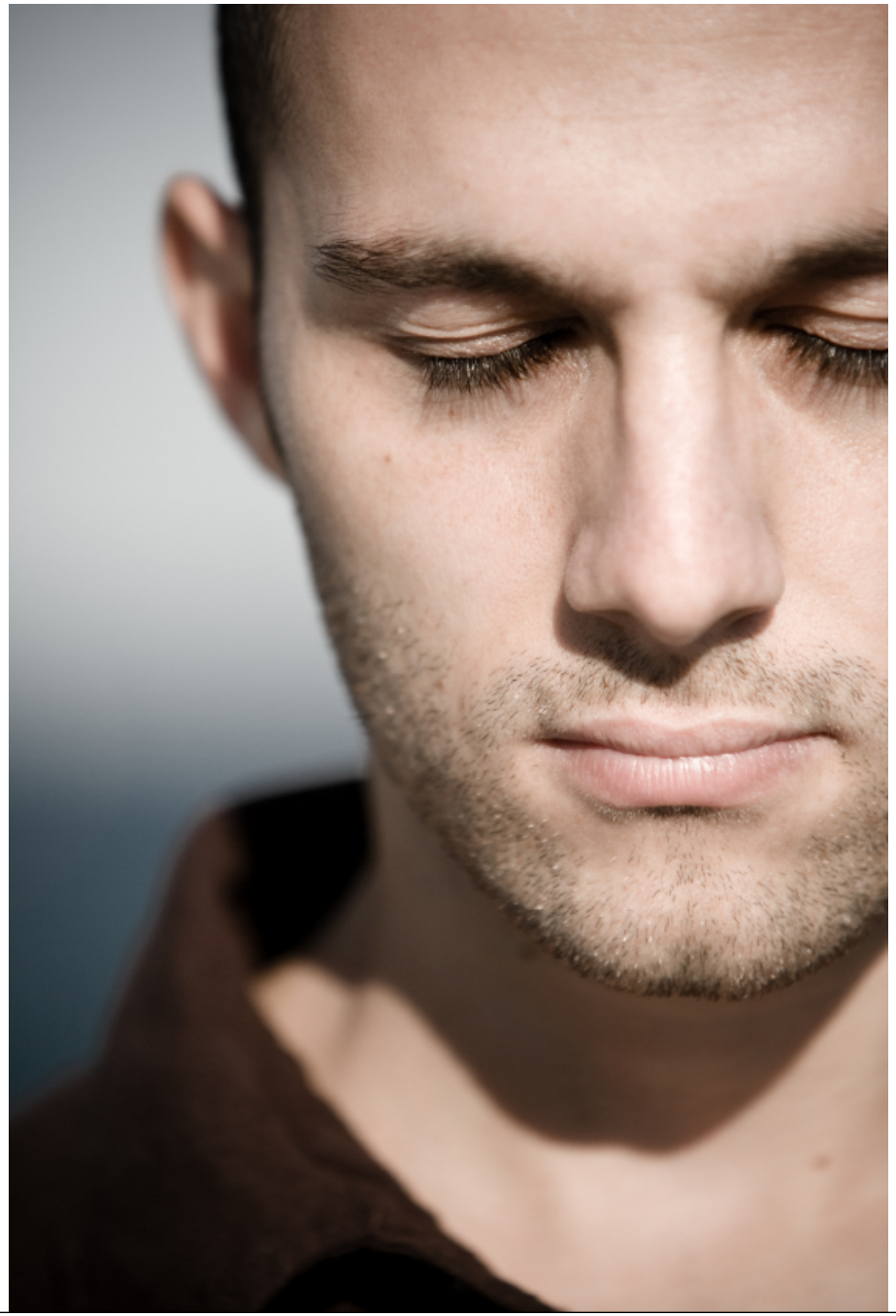
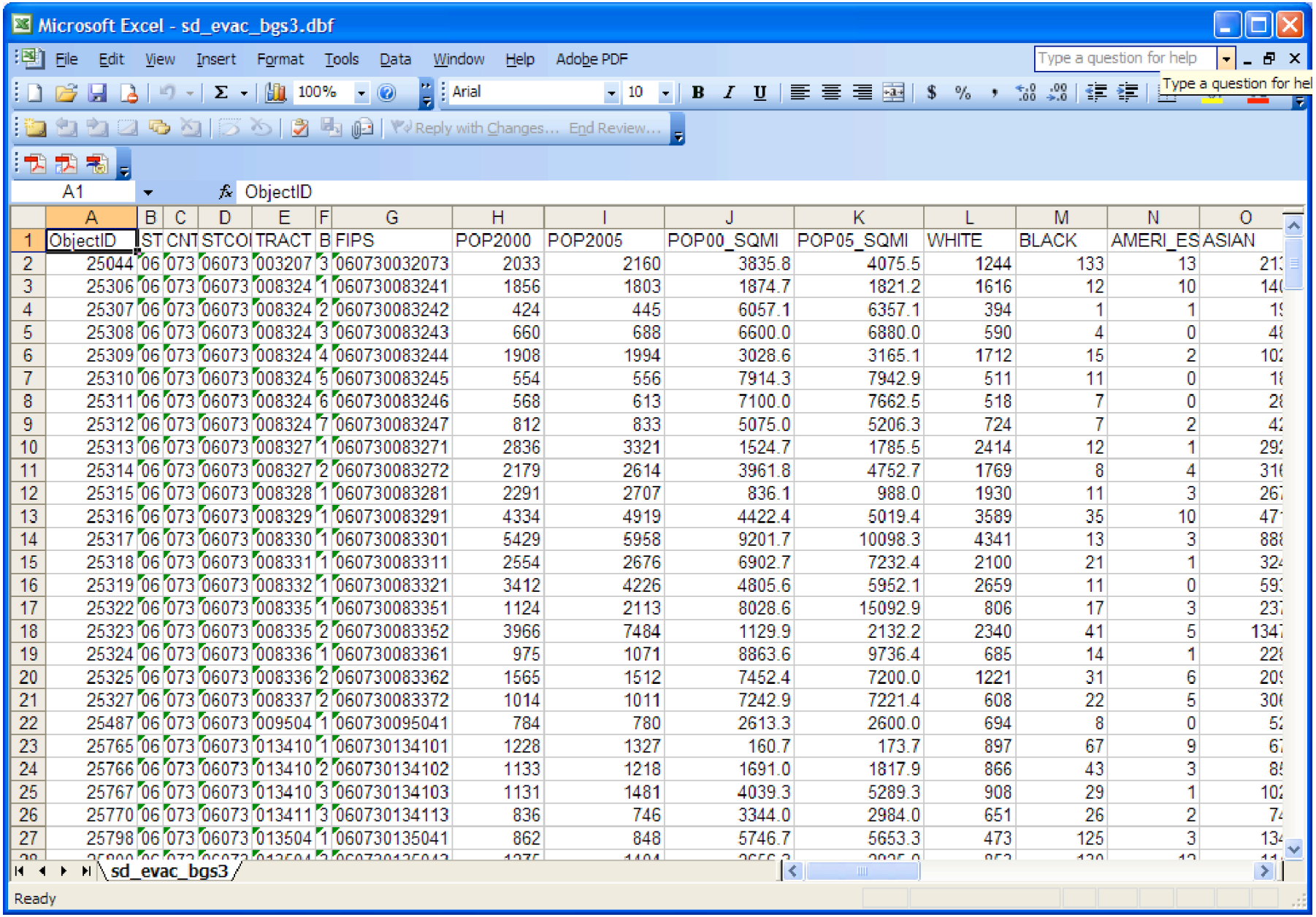
CS 171: Visualization

Hanspeter Pfister
pfister@seas.harvard.edu





Microsoft Excel - sd_evac_bgs3.dbf

File Edit View Insert Format Tools Data Window Help Adobe PDF

Type a question for help

A1 ObjectID

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	ObjectID	ST	CNT	STCOI	TRACT	B	FIPS	POP2000	POP2005	POP00_SQMI	POP05_SQMI	WHITE	BLACK	AMERI_ES	ASIAN
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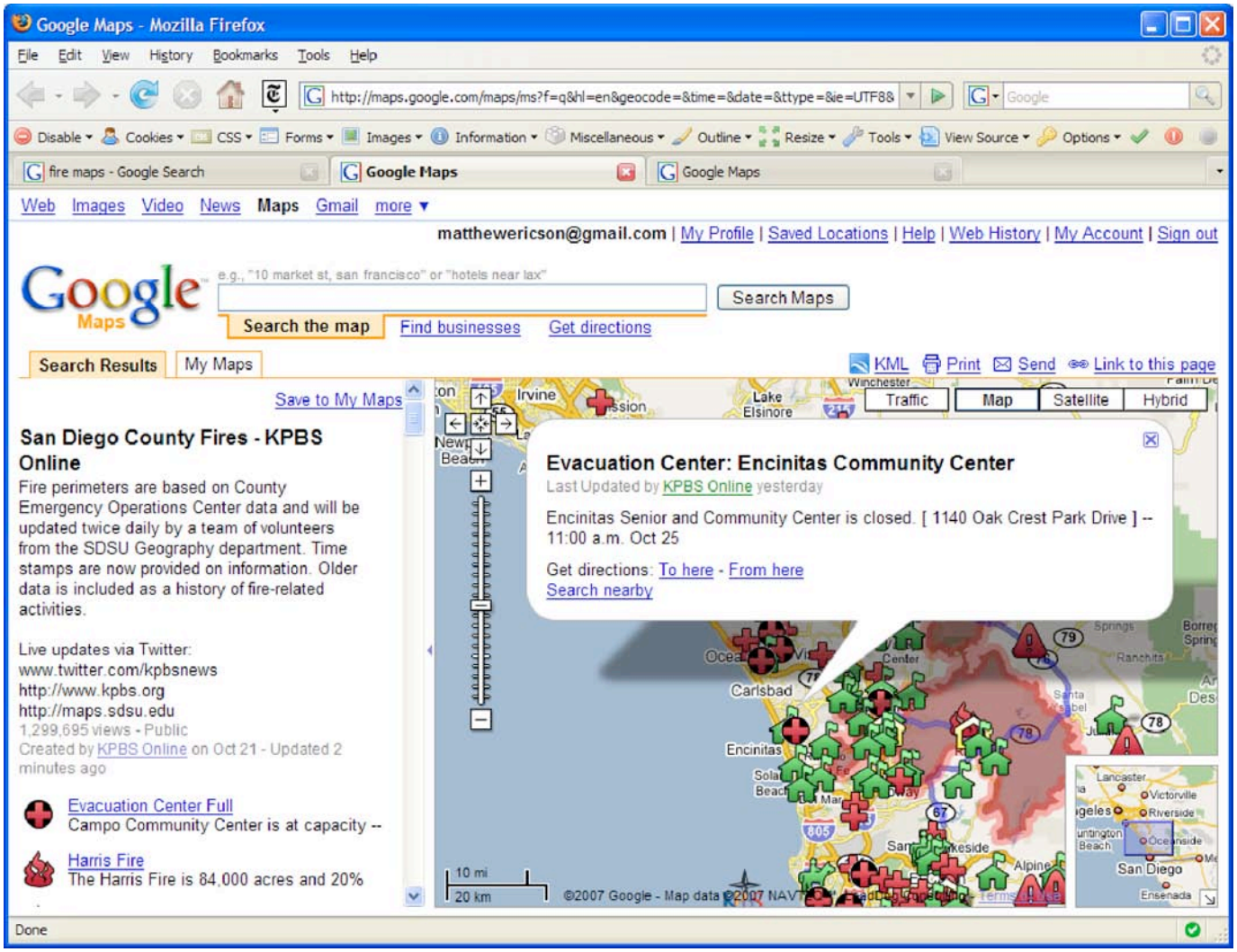
27	25798	06	073	06073	013504	1	060730135041	862	848	5746.7	5653.3	473	125	3	13

sd_evac_bgs3

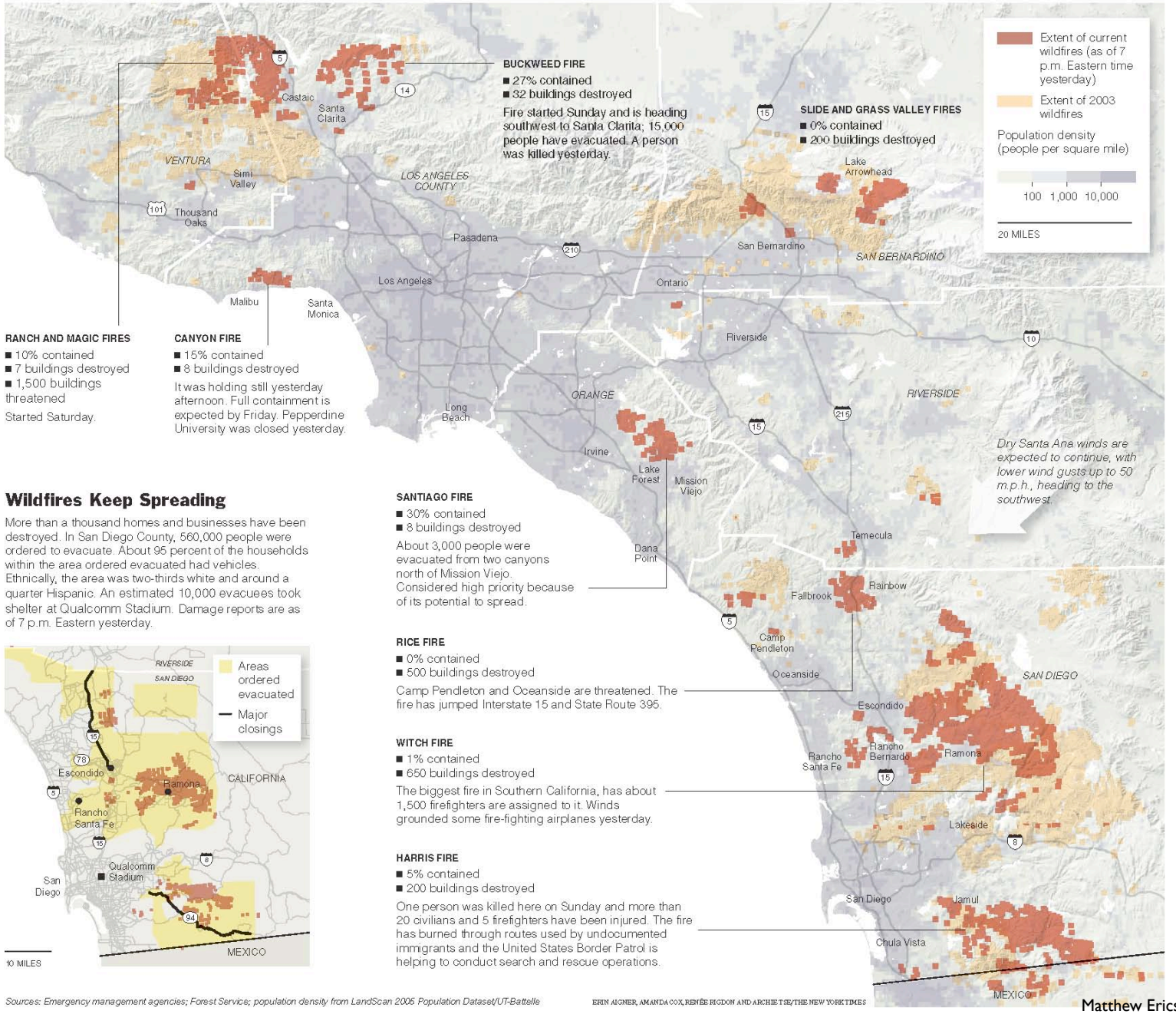
Ready

Matthew Ericson, NY Times

Explain



Matthew Ericson, NY Times



Wildfires Keep Spreading

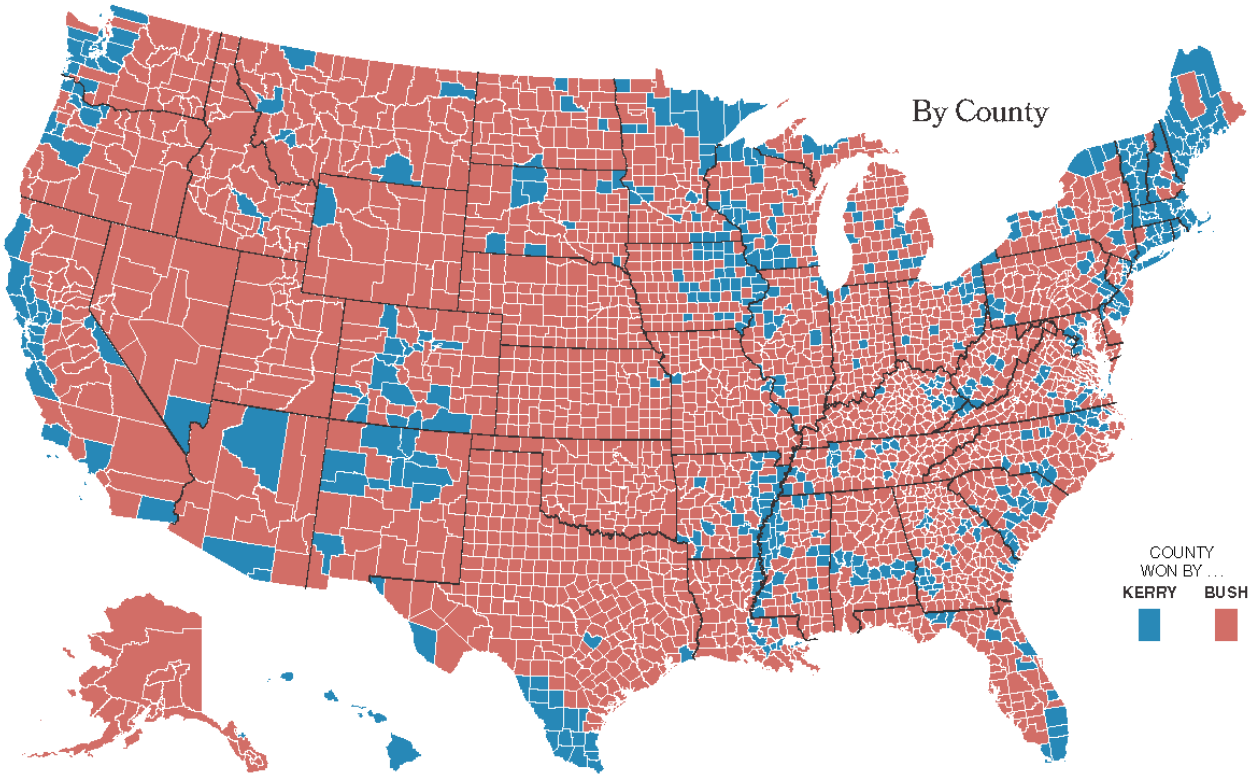
More than a thousand homes and businesses have been destroyed. In San Diego County, 560,000 people were ordered to evacuate. About 95 percent of the households within the area ordered evacuated had vehicles. Ethnically, the area was two-thirds white and around a quarter Hispanic. An estimated 10,000 evacuees took shelter at Qualcomm Stadium. Damage reports are as of 7 p.m. Eastern yesterday.

Sources: Emergency management agencies; Forest Service; population density from LandScan 2005 Population Dataset/UT-Battelle

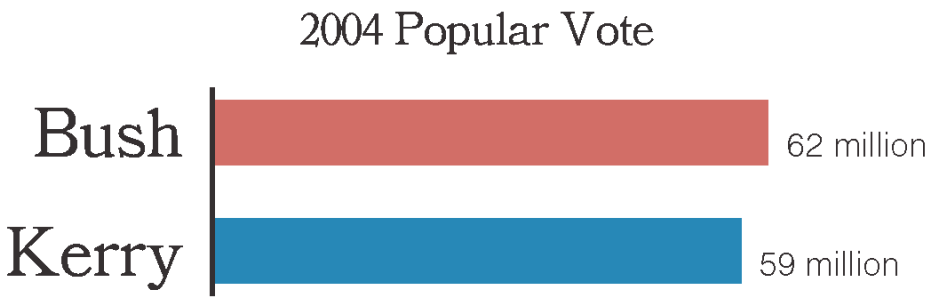
ERIN AIGNER, AMANDA COX, RENÉE RIGDON AND ARCHIE TSE/THE NEW YORK TIMES

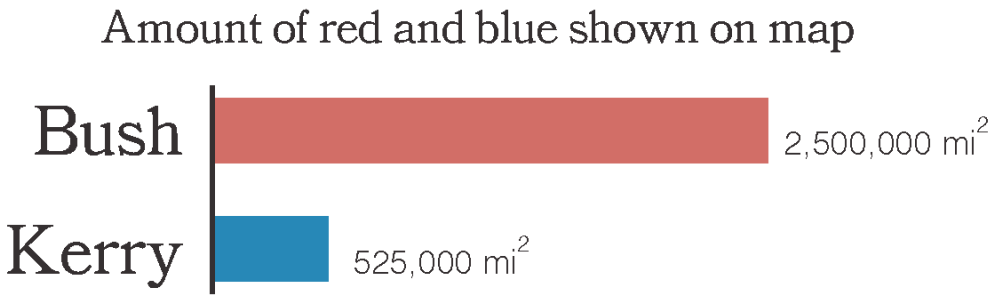
Matthew Ericson, NY Times

Honest Portrayal

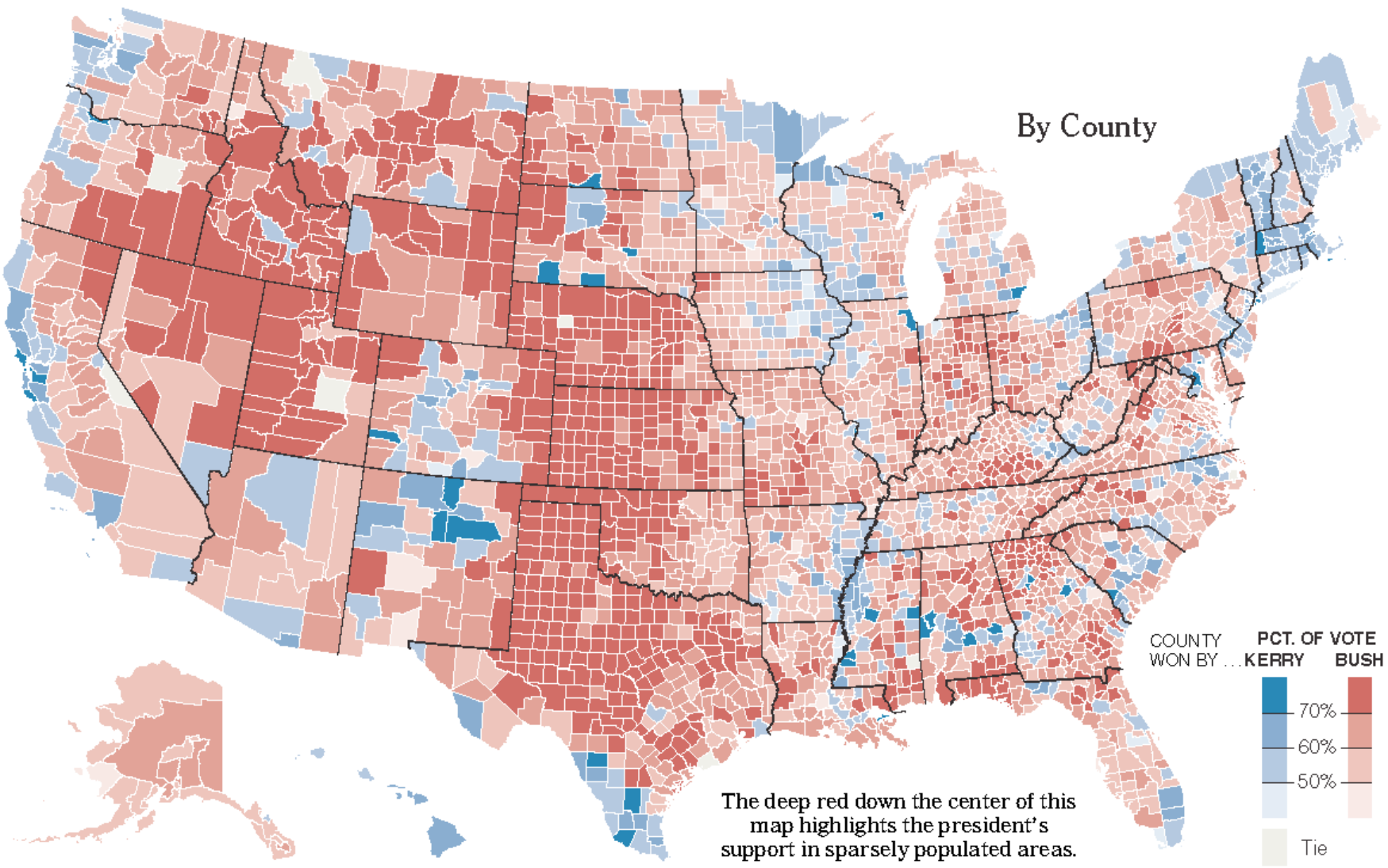


Matthew Ericson, NY Times



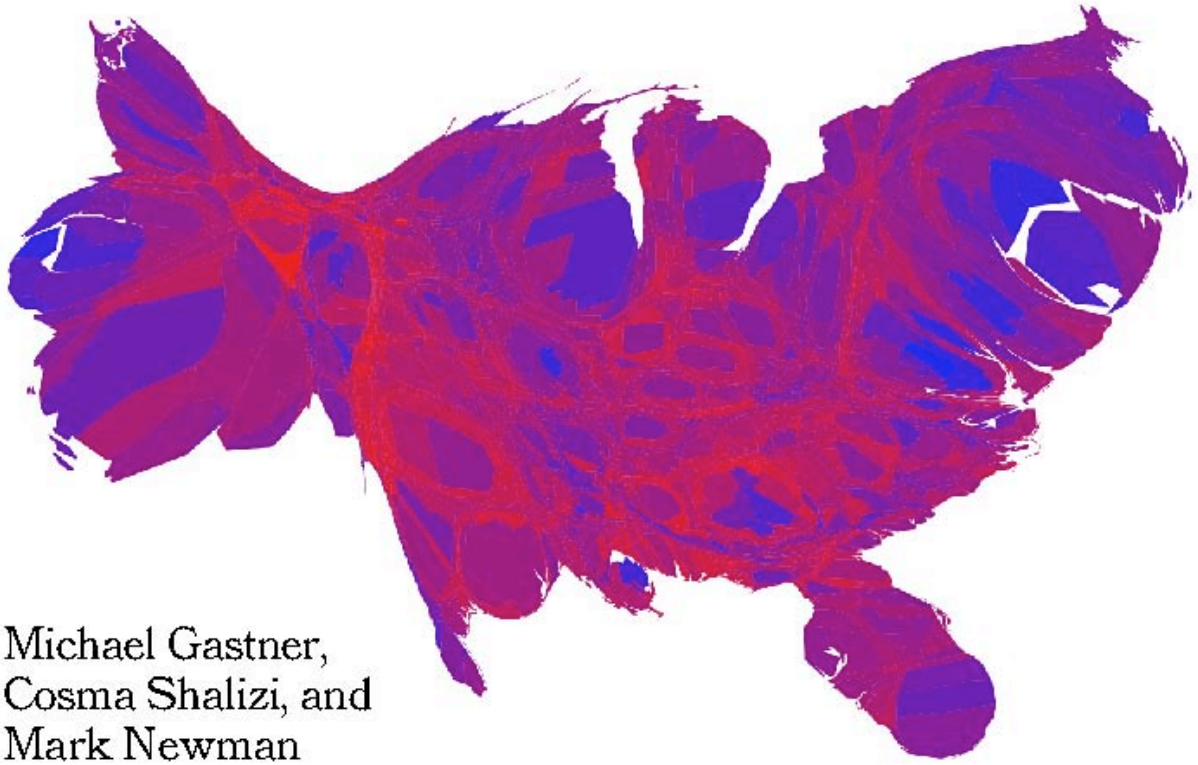


Matthew Ericson, NY Times



Matthew Ericson, NY Times

Cartogram

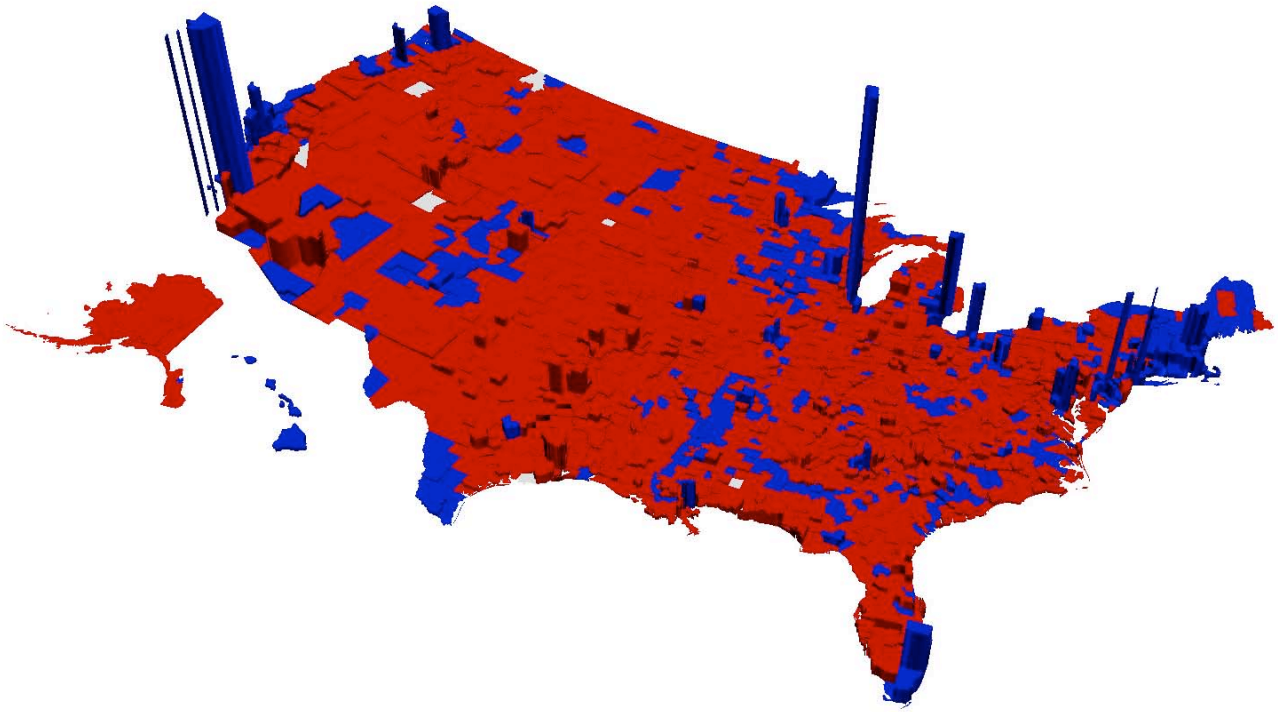


Michael Gastner,
Cosma Shalizi, and
Mark Newman

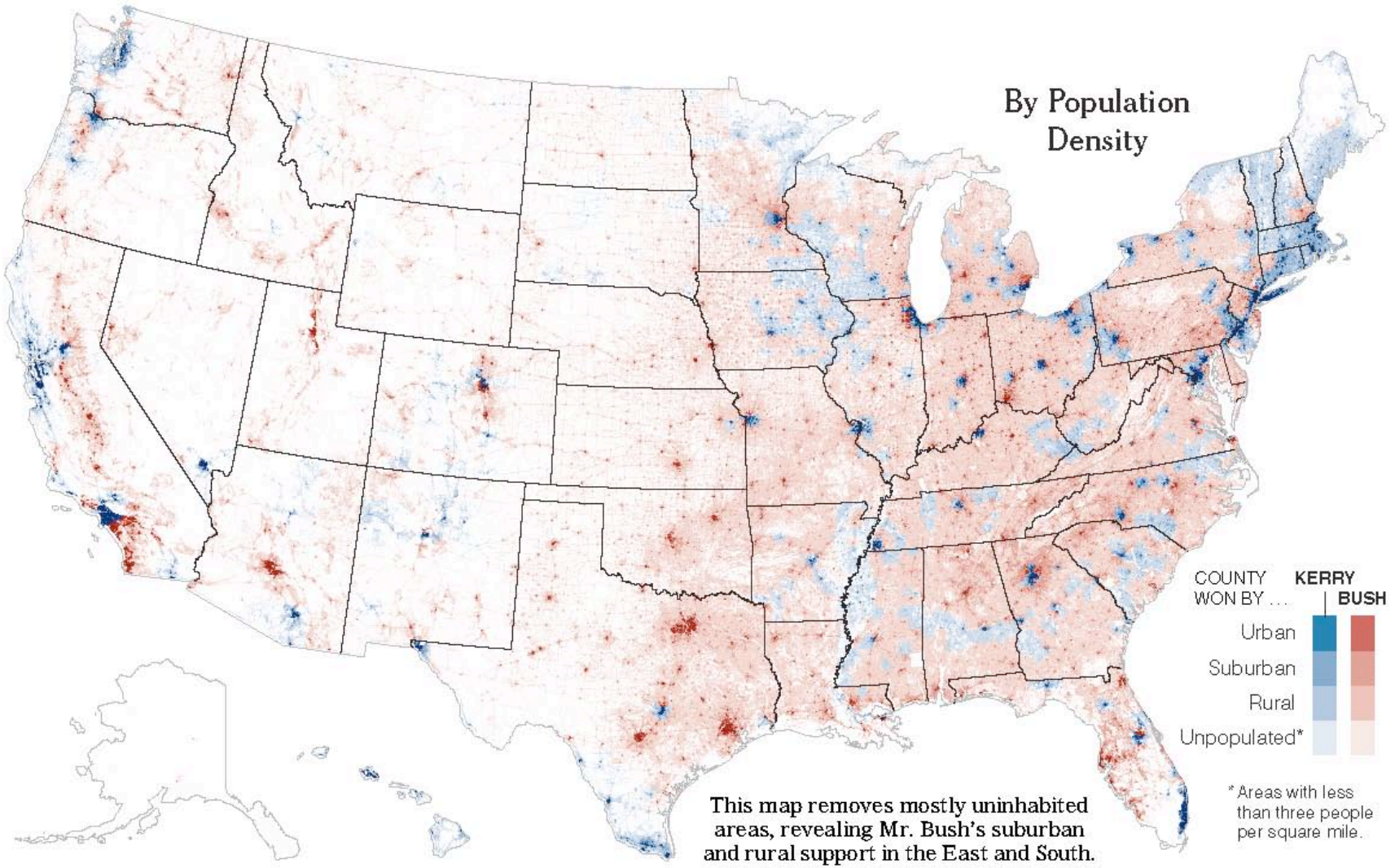
University of Michigan

Matthew Ericson, NY Times

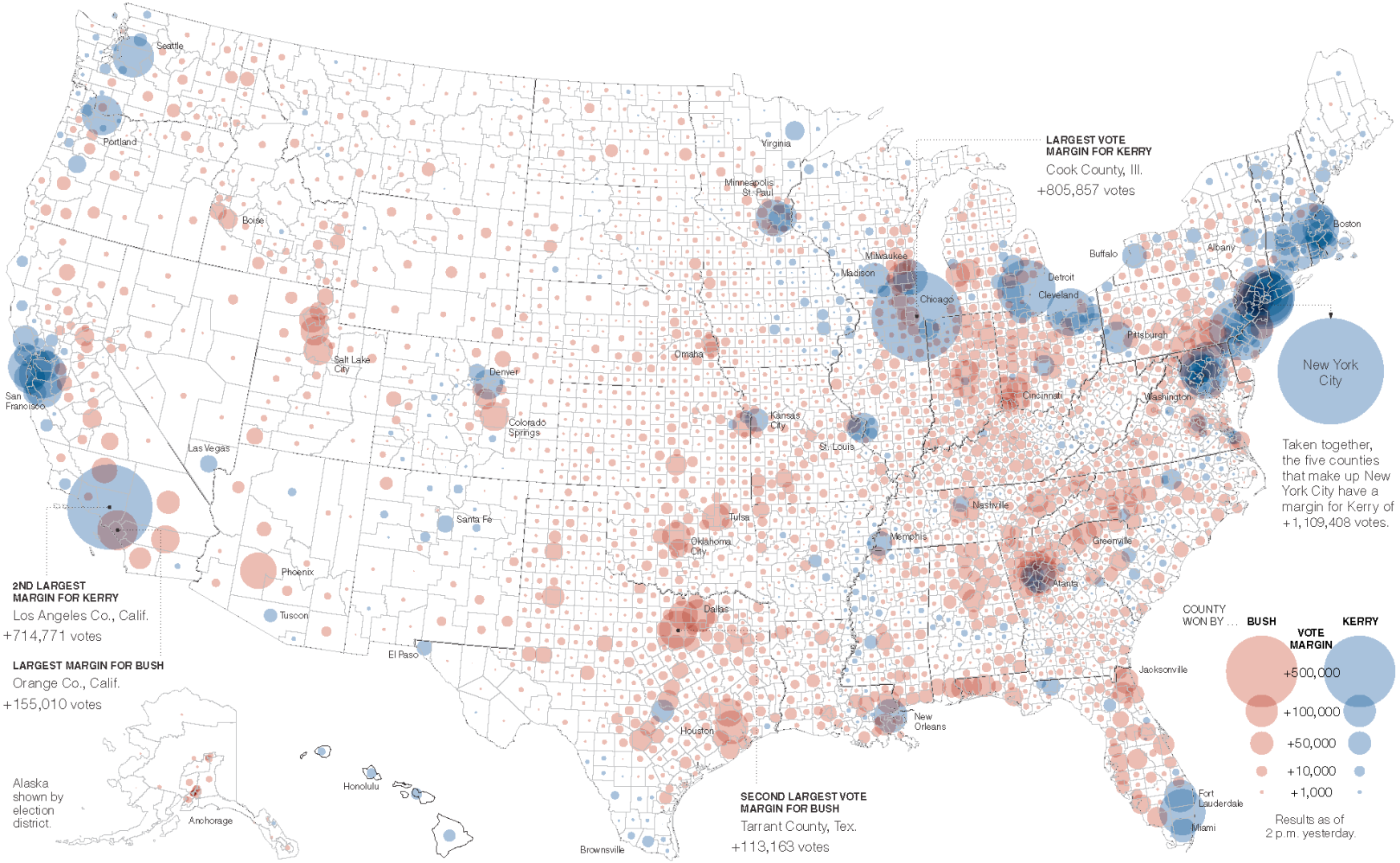
3D



Matthew Ericson, NY Times

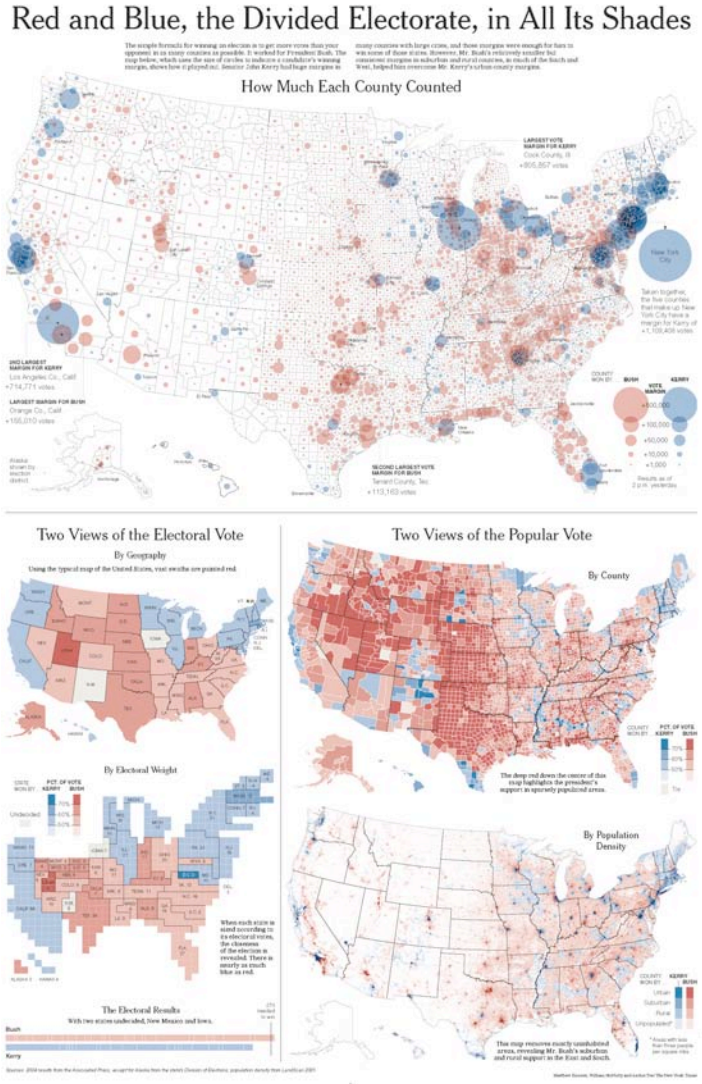


Matthew Ericson, NY Times



Matthew Ericson, NY Times

Different Views



Matthew Ericson, NY Times

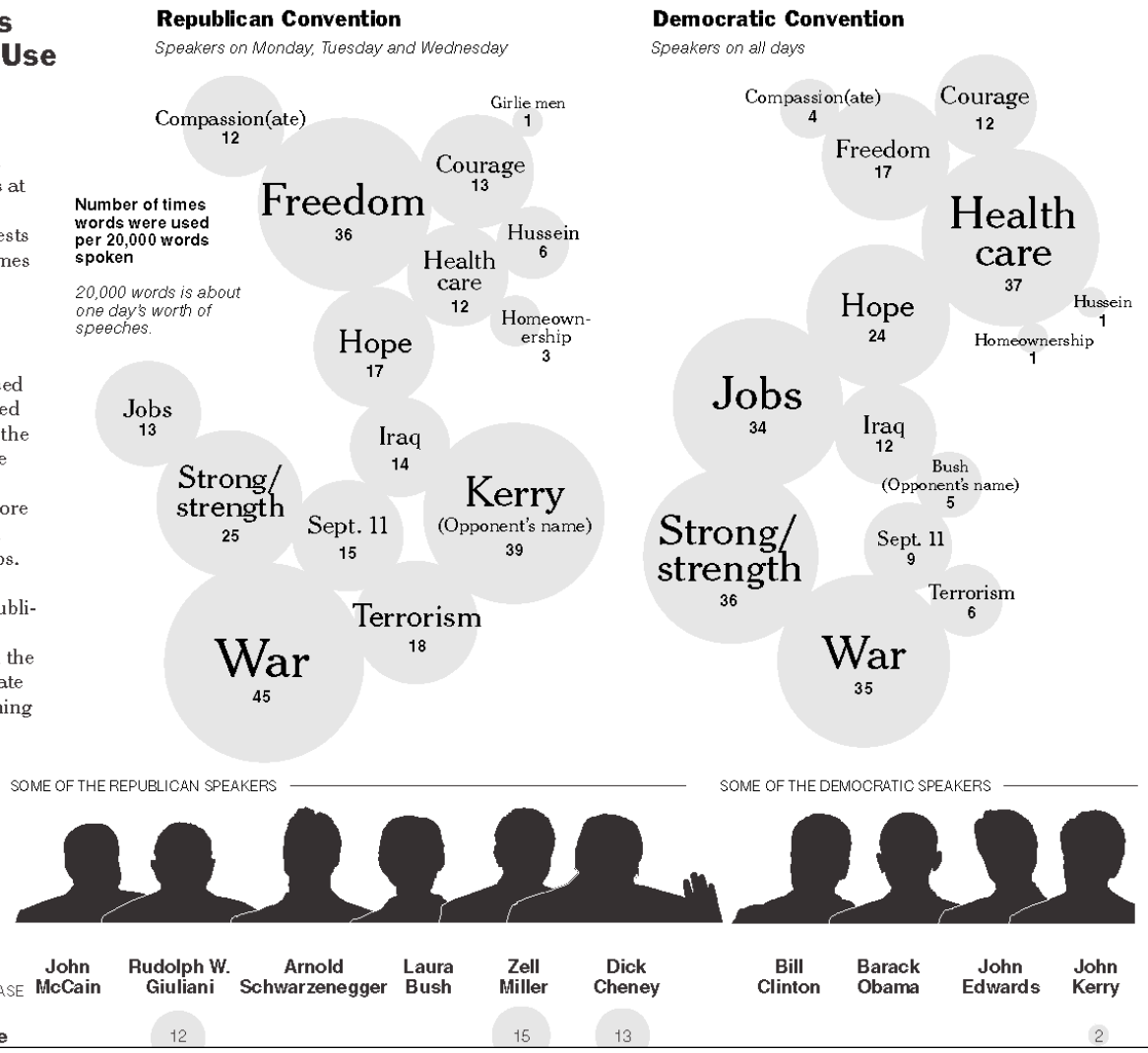
Uncover Patterns

The Words Speakers Use

Looking at the number of times words have been used by speakers at each party's convention suggests the different themes the parties have highlighted.

The Republican speakers have used more terms related to terrorism and the war in Iraq, while the Democratic speakers were more likely to mention health care or jobs.

In addition, Republicans were more likely to mention the opposing candidate by name, something the Democrats rarely did.



NUMBER OF TIMES SPEAKERS USED EACH WORD OR PHRASE	John McCain	Rudolph W. Giuliani	Arnold Schwarzenegger	Laura Bush	Zell Miller	Dick Cheney	Bill Clinton	Barack Obama	John Edwards	John Kerry
Opponent's name		12			15	13				2

Matthew Ericson, NY Times

755

Steroids or Not, the Pursuit Is On

Barry Bonds is taking aim at the career home run record. He needs only six more to tie Babe Ruth and 47 to equal Hank Aaron.

Lines are cumulative home runs.

Hank Aaron
755 homers
23 seasons

Babe Ruth
714 homers
22 seasons

Barry Bonds
708 homers
20 seasons

Bonds takes lead
Home runs after 16 seasons

Bonds	567
Aaron	554
Ruth	516

Bonds was injured last season. He played 14 games and hit 5 homers.

According to allegations in a book about Bonds, he began taking steroids before the 1999 season, his 14th in the league. Two seasons later, he hit 73 home runs, surpassing Aaron's career pace.

Homer Pace After Age 34

If the accusations are correct, Bonds was 34 in his first season on steroids. Here are projected home run paces for each player after age 34.

PROJECTED PACE BASED ON AVERAGE OF PREVIOUS FIVE SEASONS

Aaron
Actual homers slightly outpace projected homers for five seasons.

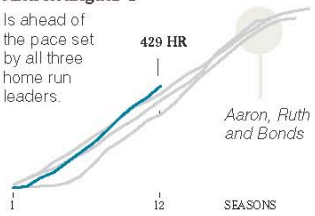
Ruth
Averaged 46.4 homers a season from age 30 to 34. Averaged 42.5 for next four seasons.

Bonds
From age 35 to 39, he averaged 14 more homers a season than projected.

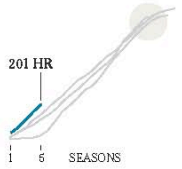
Note: Ages as of July 1 of each season.

Others Taking Aim

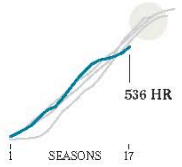
Alex Rodriguez ▲
Is ahead of the pace set by all three home run leaders.



Albert Pujols
Averaging 40 homers a season, he has started stronger than the three leaders did.

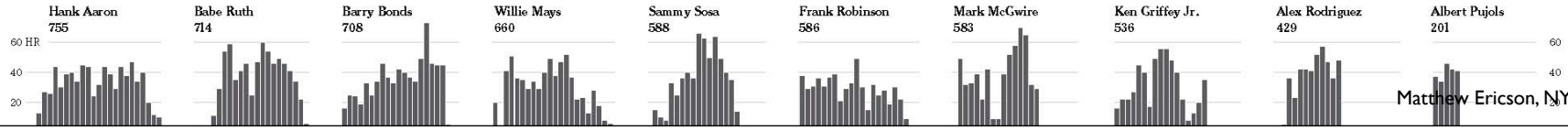


Ken Griffey Jr.
Many thought he would be the first to catch Ruth and Aaron until injuries limited his output.



Differing Paths to the Top of the Charts

The top seven players on the career home run list, along with a look at Griffey (12th), Rodriguez (37th) and Pujols (tied 257th).



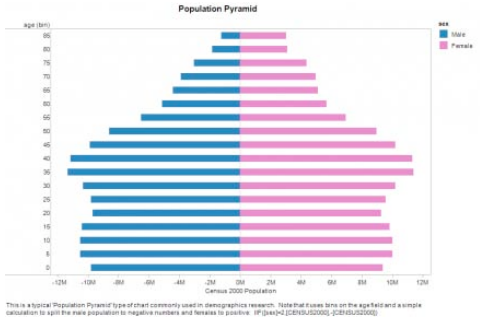
Matthew Ericson, NY Times

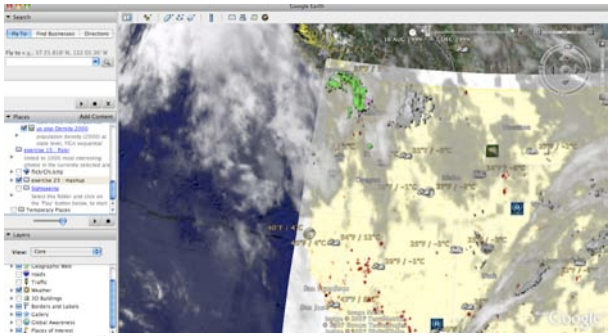
CS 171

- Learn basic design and interaction principles
- Learn about different visualization methods
- Implement an interactive visualization system
- Take your programming a step further (processing.org)

Topics

- Data and Image Models
- Visual Perception & Cognitive Principles
- Color Encoding
- Visualization Software Design
- Designing 2D Graphs
- Maps & Google Earth
- Higher-dimensional Data
- Unstructured Text and Document Collections
- Trees and Networks
- Particles and Scalar Data
- Vector and Tensor Data
- Scientific Photography
- Animation
- Interaction Techniques
- Empirical Evaluation of Visualizations
- Visualization & The Arts





Administrivia

- Lectures: M, W, 1:00 - 2:30 pm
- Section: F, 1:00 - 2:30 pm (not mandatory)
- 4 HWs, 1 mid-term
- Final project: Work in teams to create an interactive visualization

Don't Let it Get to This!!

We can Help.

CS179: Design of Usable Interactive Systems
Mondays and Wednesdays 2:30-4:30
Spring 2008