

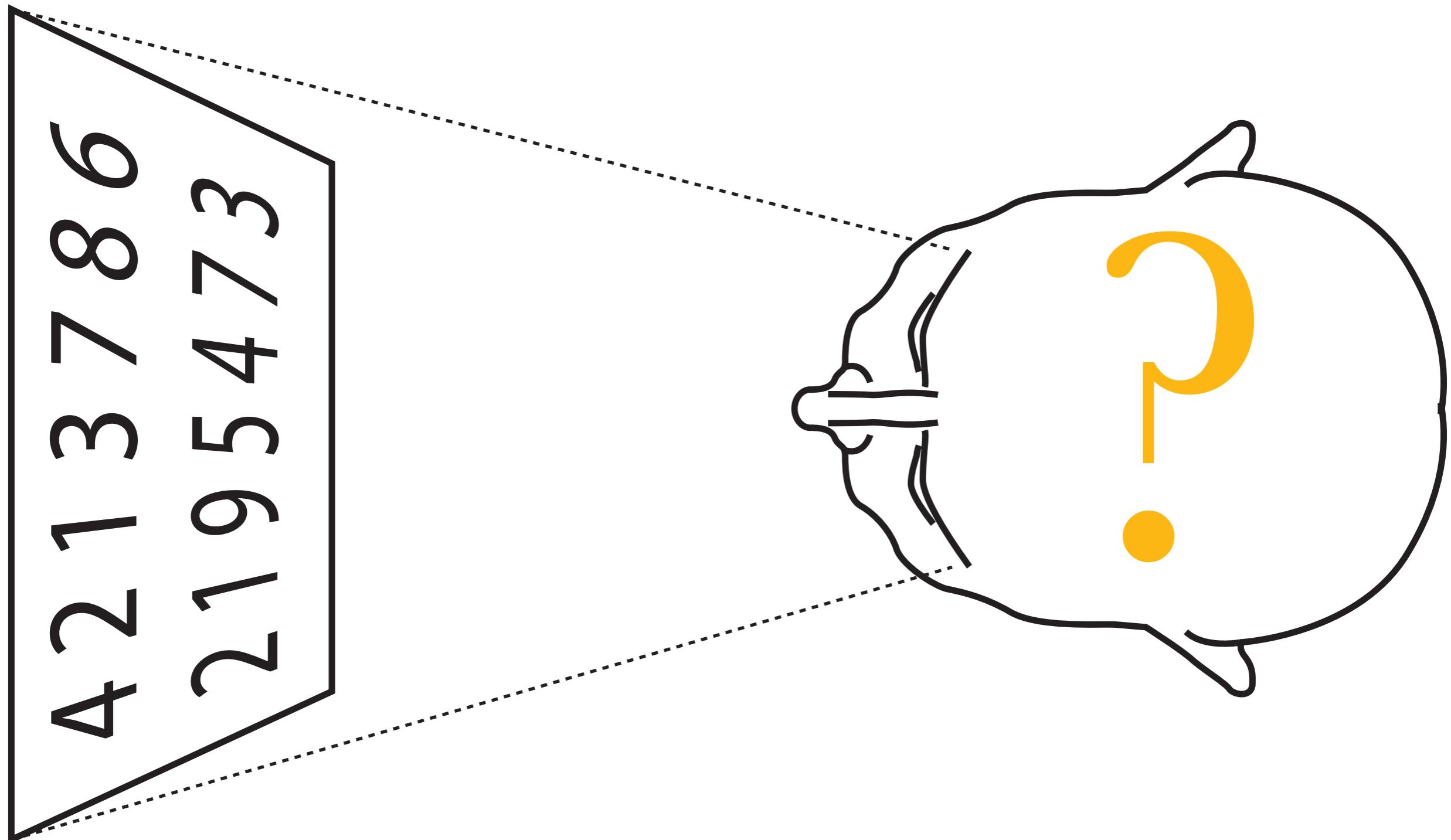
Lesson 1

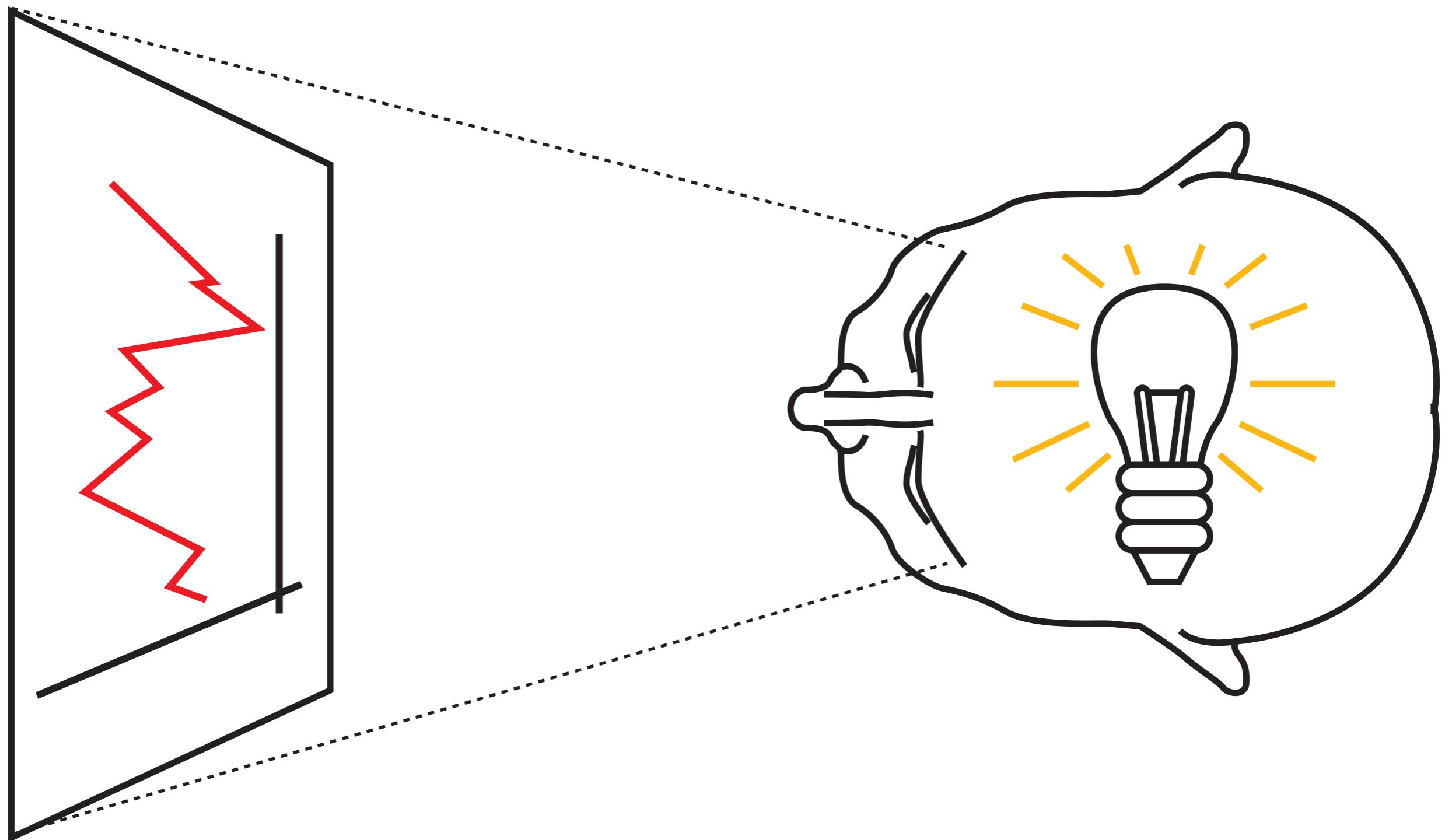
What Visualization Is



A visualization is any visual display
intended to reveal evidence, making
the invisible visible

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	Country or A	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010		Country or A	1970	1970	2008	VarGDP	VarNAT		
2	Afghanista	7.70	7.70	7.70	7.70	7.70	7.70	7.80	7.90	8.00	8.00	7.35	6.63		Afghanistan	147,7133	465,9868923	215,4671	-13,84			
3	Algeria	7.28	7.28	7.38	7.38	7.38	7.18	6.49	5.29	4.13	2.89	2.53	2.38		Algeria	375,8692	4958,84537	1219,301	-67,71			
4	Angola	7.00	7.20	7.40	7.40	7.20	7.20	7.20	7.20	7.10	6.92	6.63	5.79		Angola	470,9031	1942,142686	312,4294	-19,65			
5	Argentina	3.15	3.13	3.09	3.05	3.15	3.44	3.15	3.05	2.90	2.63	2.35	2.25		Argentina	1306,446	8357,509649	539,7134	-28,34			
6	Australia	3.18	3.41	3.27	2.87	2.54	1.99	1.91	1.86	1.86	1.78	1.75	1.83		Australia	3375,216	48252,77501	1329,62	-27,81			
7	Austria	2.08	2.50	2.78	2.57	2.04	1.65	1.59	1.44	1.47	1.37	1.39	1.38		Austria	2044,135	49596,39333	2326,277	-32,20			
8	Bahrain	6.97	6.97	7.18	6.97	5.95	5.23	4.63	4.08	3.36	2.76	2.51	2.29		Bahrain	1680,851	28239,78497	1580,088	-61,44			
9	Banglades	6.70	6.76	6.85	6.85	6.85	6.63	5.92	4.89	3.96	3.30	2.80	2.36		Bangladesh	89,56228	493,7427057	451,2842	-65,5			
10	Barbados	4.67	4.67	4.26	3.45	2.74	2.19	1.92	1.75	1.60	1.50	1.50	1.53		Barbados	799,694	14422,38651	1703,488	-44,34			
11	Belgium	2.34	2.50	2.64	2.39	2.02	1.71	1.60	1.56	1.61	1.60	1.64	1.77		Belgium	2736,932	47609,44498	1639,519	-12,10			
12	Belize	6.65	6.55	6.45	6.35	6.25	6.20	5.40	4.70	4.35	3.85	3.35	2.94		Belize	205,5303	4569,421947	2123,235	-53			
13	Bhutan	6.67	6.67	6.67	6.67	6.67	6.45	6.26	5.41	4.23	3.38	2.68		Bhutan	211,3921	1932,838541	814,338	-59,88				
14	Bolivia	6.75	6.75	6.63	6.56	6.50	5.80	5.30	5.00	4.80	4.32	3.96	3.50		Bolivia	239,8159	1722,815344	618,3909	-46,15			
15	Botswana	6.50	6.58	6.65	6.70	6.55	6.37	5.97	5.11	4.32	3.70	3.18	2.90		Botswana	123,528	6108,004265	4844,633	-55,75			
16	Brazil	6.15	6.15	6.15	5.38	4.72	4.31	3.80	3.10	2.60	2.45	2.25	1.90		Brazil	440,9046	8311,117551	1785,015	-59,72			
17	Bulgaria	2.48	2.27	2.18	2.15	2.17	2.17	2.01	1.92	1.51	1.22	1.25	1.40		Bulgaria	1060,124	6572,845401	520,0072	-35,39			
18	Burundi	6.80	6.80	6.80	6.80	6.80	6.80	6.79	6.45	6.08	5.41	4.66		Burundi	69,85529	137,6211112	97,00885	-31,56				
19	Cambodia	6.29	6.29	6.29	6.22	5.54	4.70	6.60	6.00	5.55	4.45	3.41	2.96		Cambodia	90,85125	768,6257419	746,0266	-46,4			
20	Cameroon	5.68	5.68	5.90	6.10	6.30	6.40	6.40	6.10	5.70	5.10	4.92	4.67		Cameroon	169,1264	1217,845953	620,0803	-25,92			
21	Canada	3.65	3.88	3.68	2.61	1.98	1.73	1.63	1.62	1.69	1.56	1.52	1.57		Canada	3973,997	45166,19217	1036,543	-20,7			
22	Central Afr	5.52	5.75	5.90	5.95	5.95	5.95	5.95	5.90	5.65	5.54	5.30	4.85		Central Afric	128,4357	464,4922527	261,6536	-18,54			
23	Chad	6.10	6.20	6.30	6.40	6.60	6.74	6.75	6.70	6.65	6.62	6.54	6.20		Chad	112,3869	765,4590255	581,0928	-6,138			
24	Chile	4.95	5.49	5.44	4.44	3.63	2.80	2.67	2.65	2.55	2.21	2.00	1.94		Chile	970,1871	10091,24945	940,1343	-46,44			
25	China	6.11	5.48	5.61	5.94	4.77	2.93	2.61	2.63	2.01	1.80	1.77	1.77		China, Peop	114,2003	3292,122201	2782,761	-62,95			
26	China, Hor	4.44	4.72	5.31	4.02	2.89	2.32	1.80	1.31	1.29	1.08	0.98	1.02		China: Hong	966,995	30872,11565	3092,583	-64,70			
27	Colombia	6.76	6.76	6.76	6.18	5.00	4.34	3.68	3.24	3.00	2.75	2.55	2.45		Colombia	449,9515	5415,088629	1103,483	-51,00			
28	Congo	5.68	5.79	5.99	6.19	6.29	6.29	5.99	5.55	5.21	4.87	4.78	4.41		Congo	196,6705	2933,563991	1391,613	-29,92			
29	Costa Rica	6.72	7.11	7.23	5.80	4.35	3.78	3.53	3.37	2.95	2.58	2.28	1.96		Costa Rica	686,7874	6599,109373	860,8664	-54,90			
30	Côte d'Ivoir	6.77	7.15	7.53	7.83	7.93	7.81	7.31	6.61	5.92	5.31	5.05	4.65		Côte d'Ivoire	286,8446	1136,703705	296,2786	-41,39			
31	Cuba	4.15	3.70	4.68	4.30	3.60	2.15	1.85	1.85	1.65	1.61	1.63	1.50		Cuba	653,2217	5596,276931	756,7194	-58,34			
32	Dem, Peop	2.70	3.80	3.41	4.09	3.72	2.58	2.93	2.45	2.35	2.09	1.92	1.86		Democratic	387,6021	555,3673573	43,28287	-49,91			
33	Dem, Rep	5.98	5.98	6.04	6.15	6.20	6.46	6.72	6.98	7.14	7.04	6.70	6.07		Democratic	97,394	180,7331607	95,61137	3,415			





Dataclysm

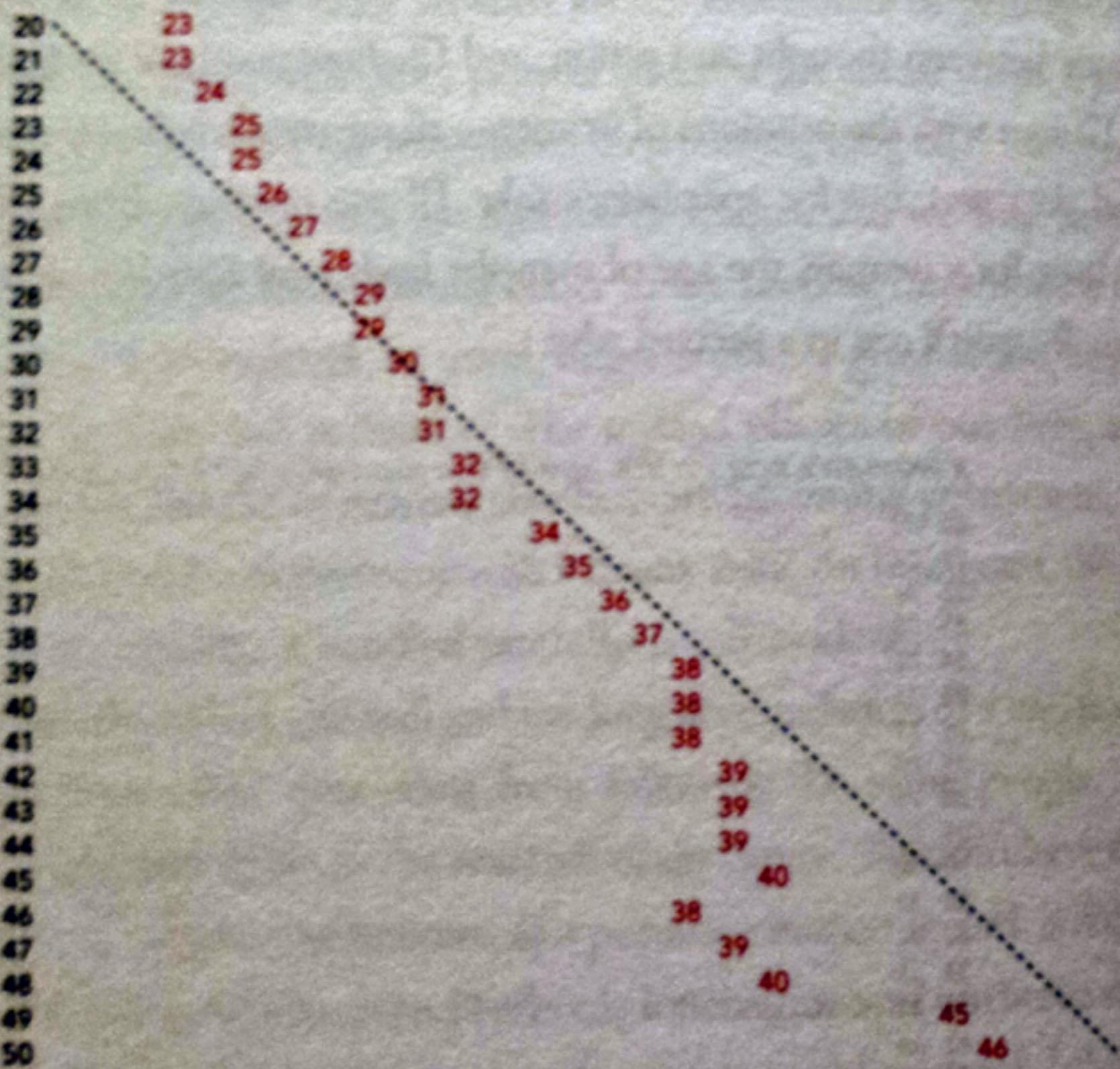
Who We Are*

Christian Rudder

* When We Think No One's Looking

[http://www.thefunctionalart.com/
2014/09/facing-dataclysm.html#more](http://www.thefunctionalart.com/2014/09/facing-dataclysm.html#more)

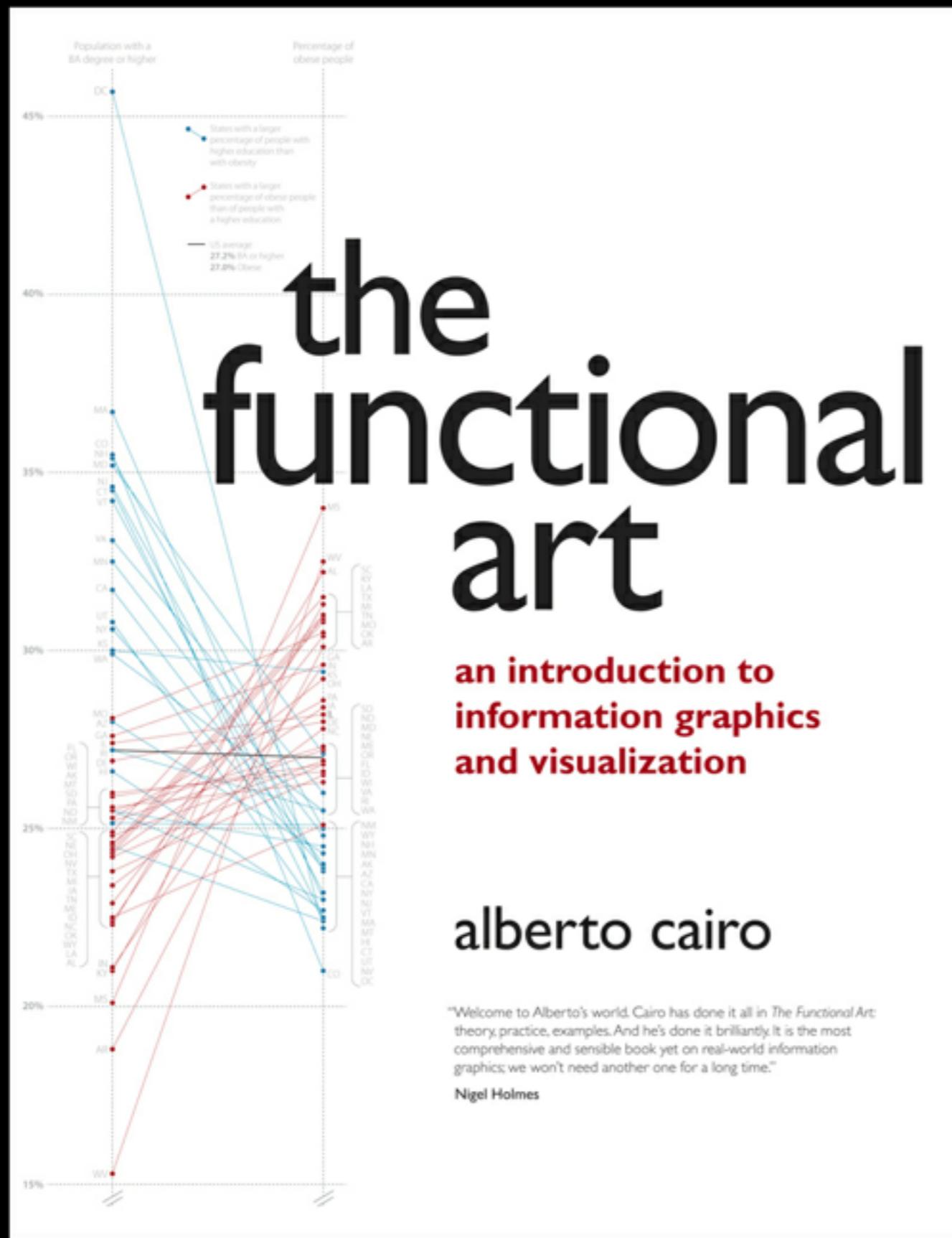
a woman's age vs. the age of the men who look best to her



a man's age vs. the age of the women who look best to him

20	20
21	20
22	21
23	21
24	21
25	21
26	22
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28	20
29	20
30	20
31	20
32	20
33	20
34	20
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36	20
37	22
38	20
39	20
40	21
41	21
42	20
43	23
44	21
45	24
46	20
47	20
48	23
49	20
50	22

This graph—and it's practically not even a graph, just a table with a couple



A visualization is any kind of visual **representation** of data and information intended to enable analysis, communication, or understanding

Visualizations are useful because they can **reveal truths** that hide behind data and complexity

But aren't there different kinds of visualizations?

visualization

charts

maps

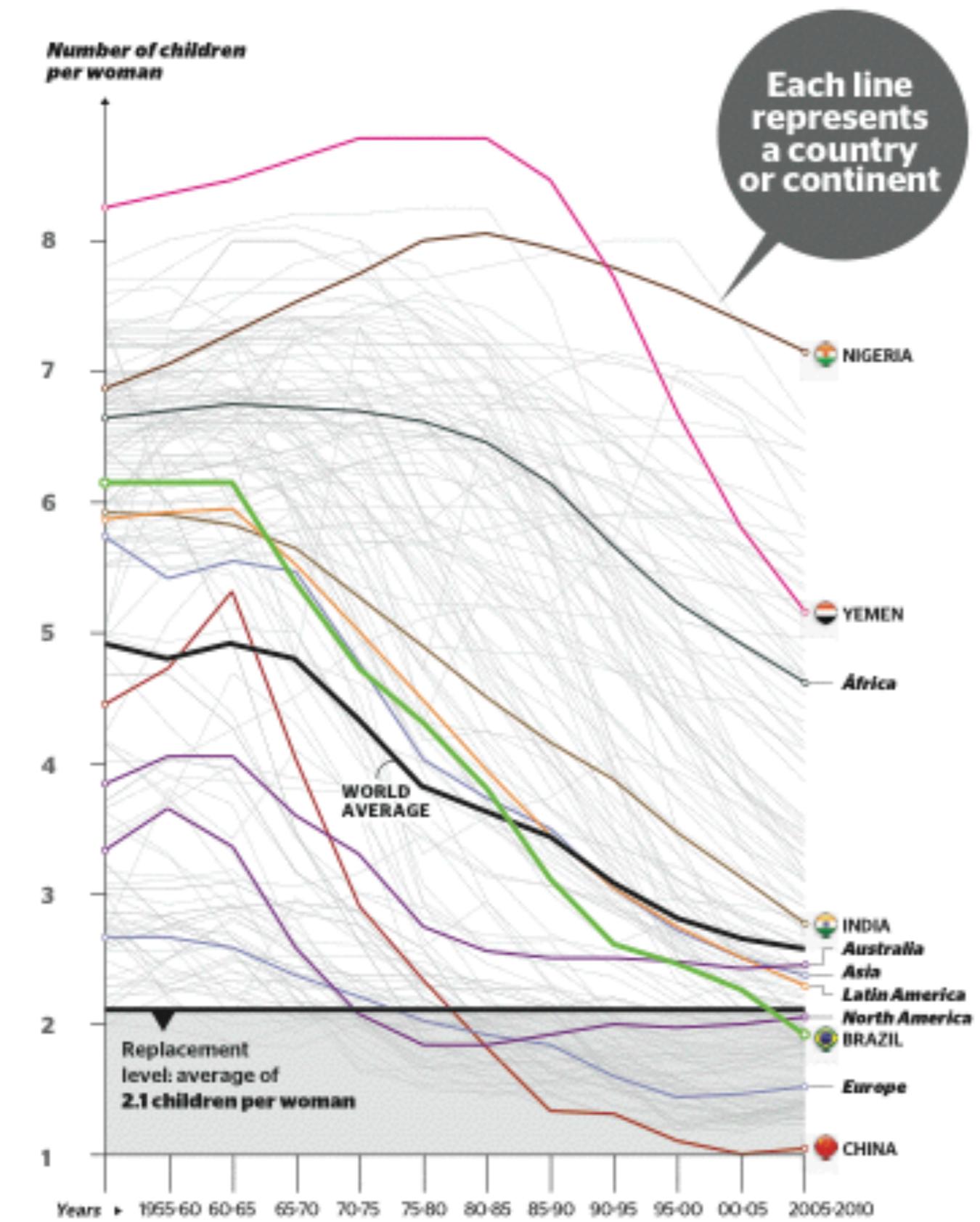
data visualizations

infographics

news applications

2 –BUT THE FERTILITY RATE IS MUCH LOWER THAN EXPECTED

A study in 2004 estimated that in 2010, the fertility rate would be 2.4 children per woman, on average. But new data collected by the IBGE prove that the fertility rate is already 1.9, below the threshold called "replacement rate". When the fertility rate drops below this number, the population of a country will eventually start to shrink and grow older.



visualization

charts

maps

data visualizations

infographics

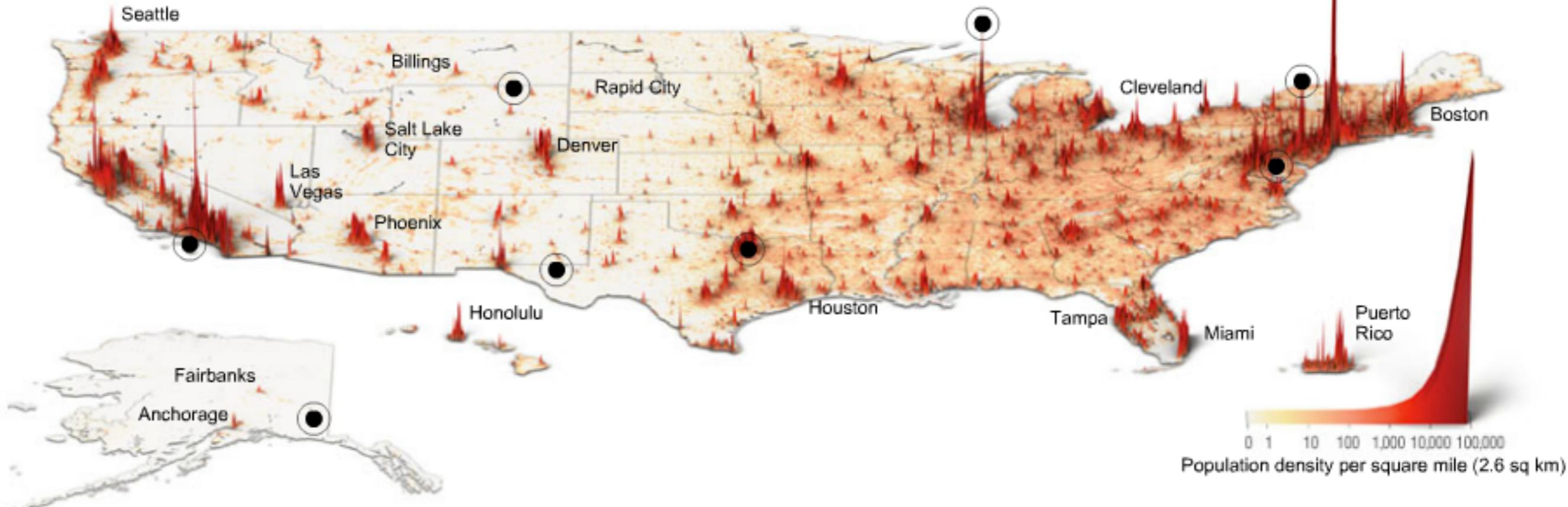
news applications

SOURCE & CREDITS**This Is Where We Live**

Take a look at America by the numbers.

Roll over the map to learn more»

80% of the U.S. population lives in a metropolitan area. Top five population centers are numbered



visualization

charts
maps
data visualizations

infographics
news applications

DIAGRAM
NEWS IN PERSPECTIVE

Brazil's Demographic Opportunity

How Brazil can take advantage of a future with fewer children per couple.

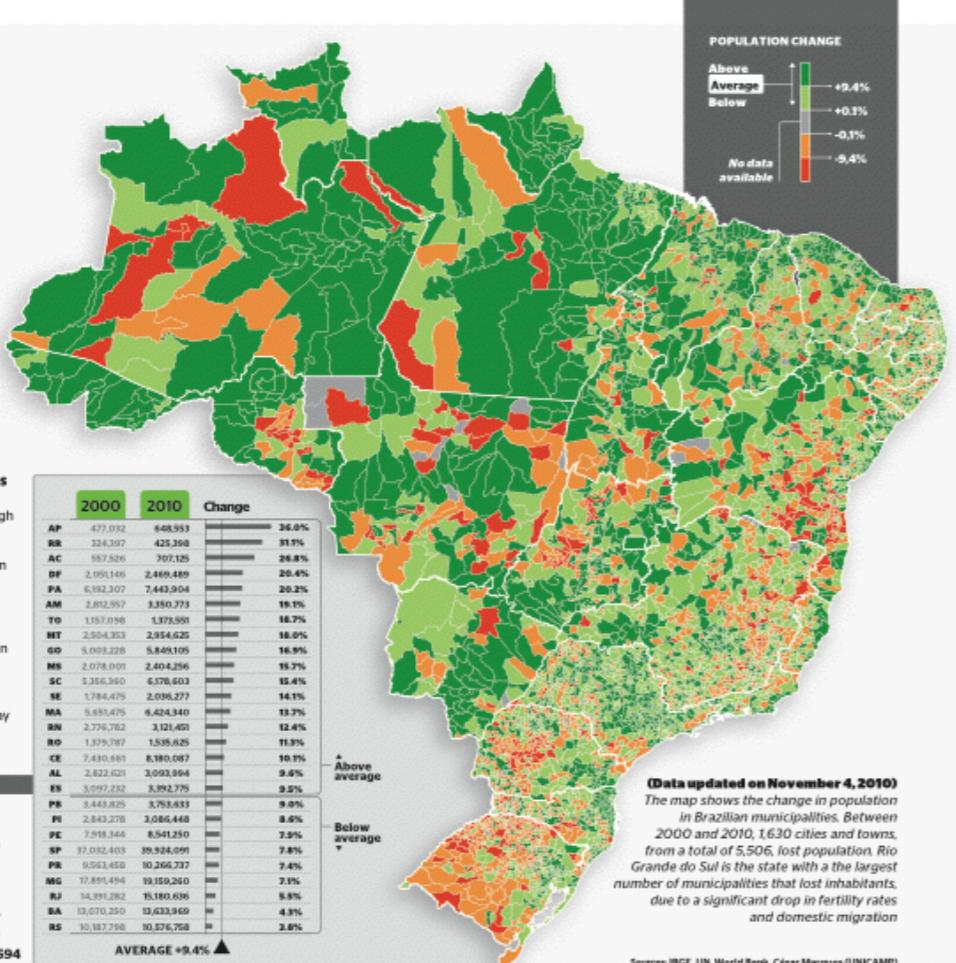
Alberto Cairo, Francine Lima,
Marco Vergotti

PRELIMINARY DATA FROM THE 2010 CENSUS
create an interesting picture of the changes that the Brazilian population has gone through in the past ten years. Brazil's population grew, on average, 10% between 2000 and 2010, but the fertility rate is below 2.1 children per woman, the minimum to keep a population from shrinking. According to César Marques, a demographer from the University of Campinas, the main challenge Brazil will face in the future is how to maintain a healthy Social Security system if the number of older and retired people will likely be much larger than it is today. Read on to learn about all the variables at play in this story.

1 BRAZIL'S POPULATION IS BIGGER

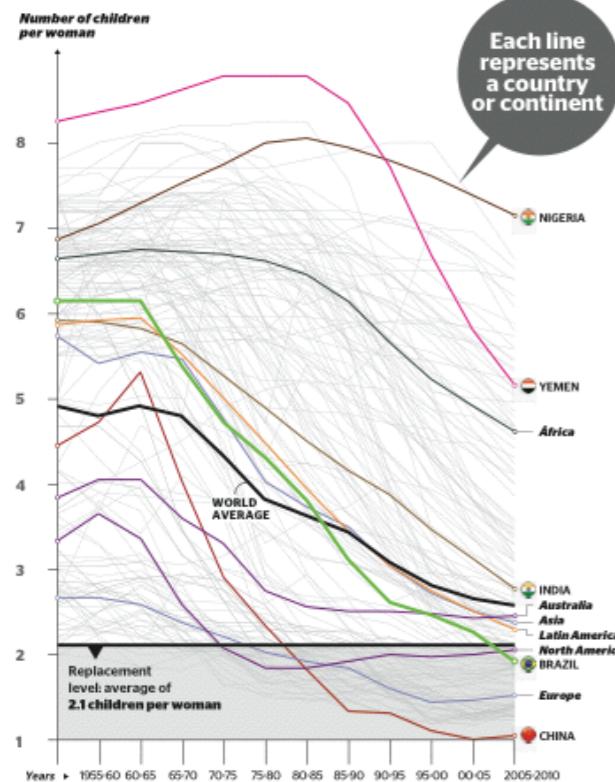
The 2010 Census has revealed a 9.4% population increase between 2000 and 2010. The differences between states, as you can see on the chart on the right, are noticeable. Most rich states, such as São Paulo and Rio, didn't grow as fast as the ones in the north east.

2000 169,799,170
2010 190,732,694



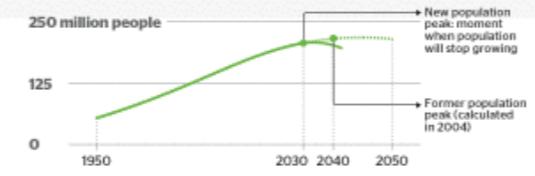
2 BUT THE FERTILITY RATE IS MUCH LOWER THAN EXPECTED

A study in 2004 estimated that in 2010, the fertility rate would be 2.4 children per woman, on average. But new data collected by the IBGE prove that the fertility rate is already 1.9, below the threshold called "replacement rate". When the fertility rate drops below this number, the population of a country will eventually start to shrink and grow older.



3 AS A CONSEQUENCE, POPULATION WILL STOP GROWING

Forecasts made in 2004 anticipated that Brazil's population would stop growing in 2040. But the most recent data from the IBGE suggests that this could happen much earlier, in 2030.



4 AND IT WILL BECOME OLDER

Comparing the current population pyramid with the one predicted for 2050

2005 Forecast for 2050

Men Women

75 years 65 50 30 20

2 1 0 1 2 Millions of people per age group

How Brazil can transform the population challenge into an opportunity

- As the population ages, the proportion of people of working age increases. The country will therefore have more people producing wealth (if the labor market can absorb them) and fewer children to consume investments. It is a window of opportunity, because in some cases the number of people of working age to fall back when older people are leaving the market.
- The population under 15 years of age is falling today. A smaller number of students in public schools will facilitate the quality of teaching, if the amount invested in education stays the same.
- Educational policy focused on low-income youth favors the formation of more skilled workforce and greater social mobility.
- In the future, Brazil will reach the stage of Europe and Japan, which struggle to support their elders. This is why it's so important to prepare a more balanced retirement system, which will include retirement at a later age.

This is NOT an “infographic”

visualization

charts

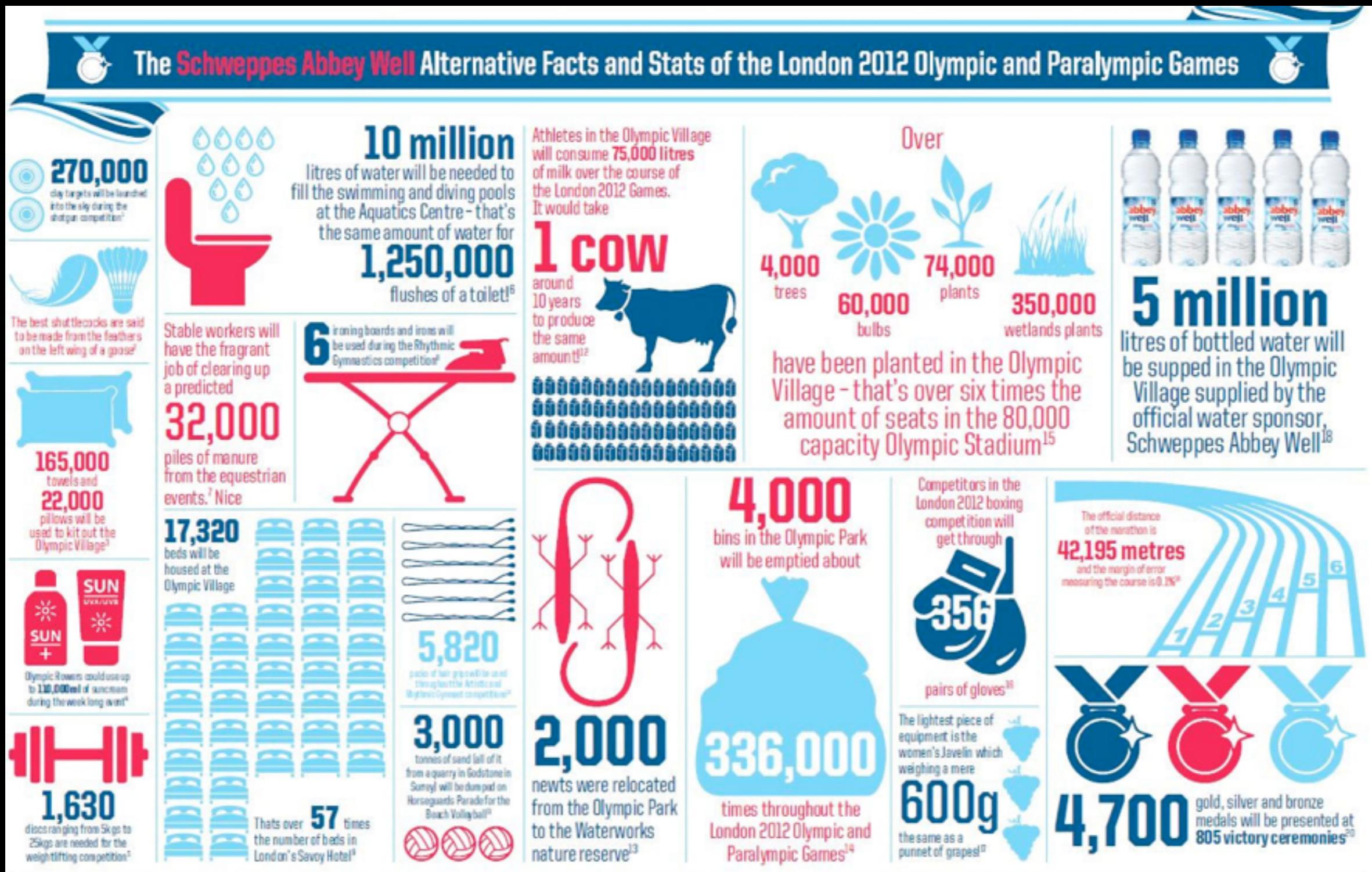
maps

infographics

Ratios

data visualizations

news applications



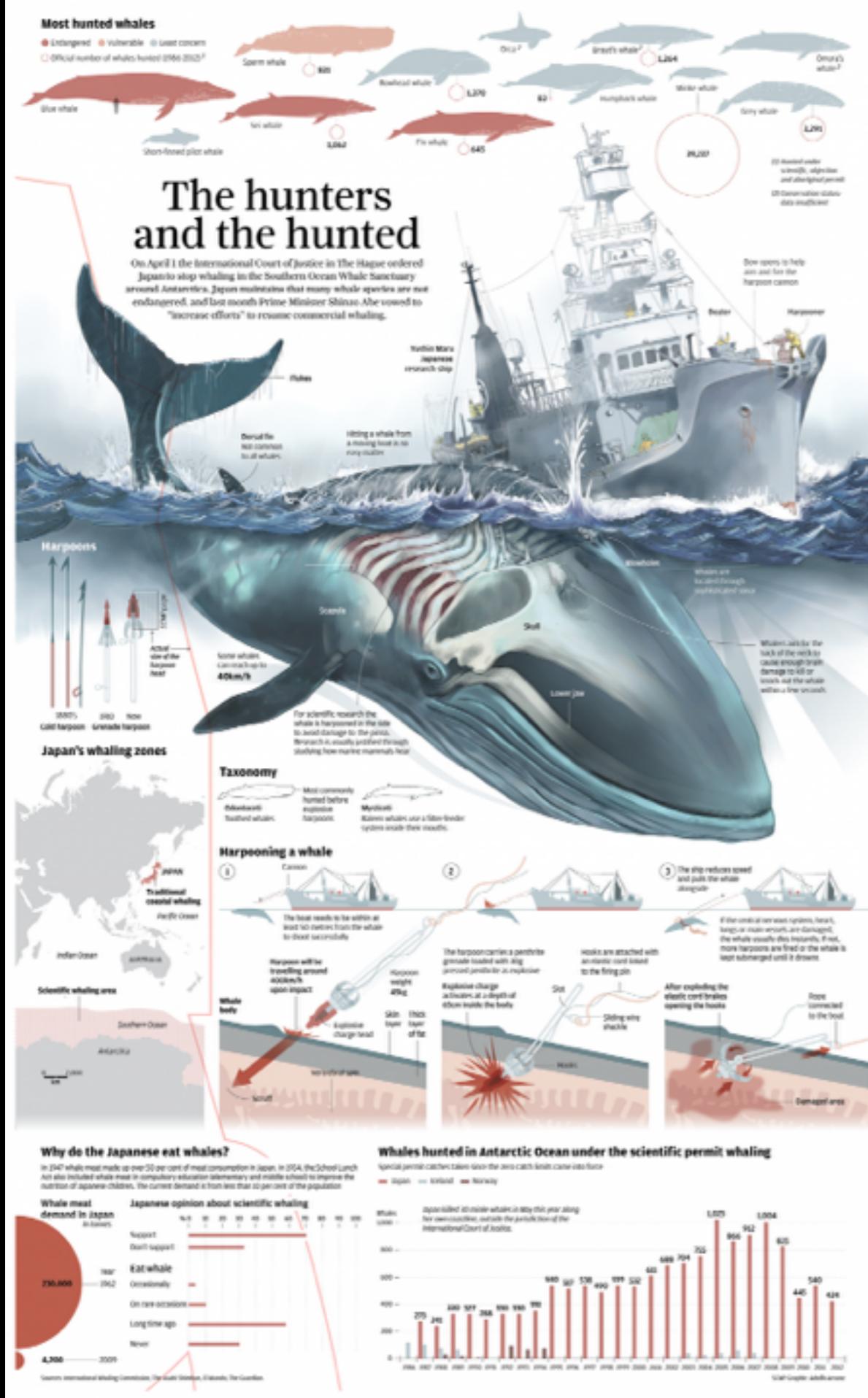
The image shows two logos side-by-side. On the left is the 'abbey well' logo, which consists of the words 'abbey' in blue and 'well' in red, all in a lowercase, sans-serif font. To its right is the official logo for the London 2012 Olympic Games, featuring the five interlocking rings above a stylized figure of a person in motion.

visualization

charts

maps

infographics
news applications



visualization

charts

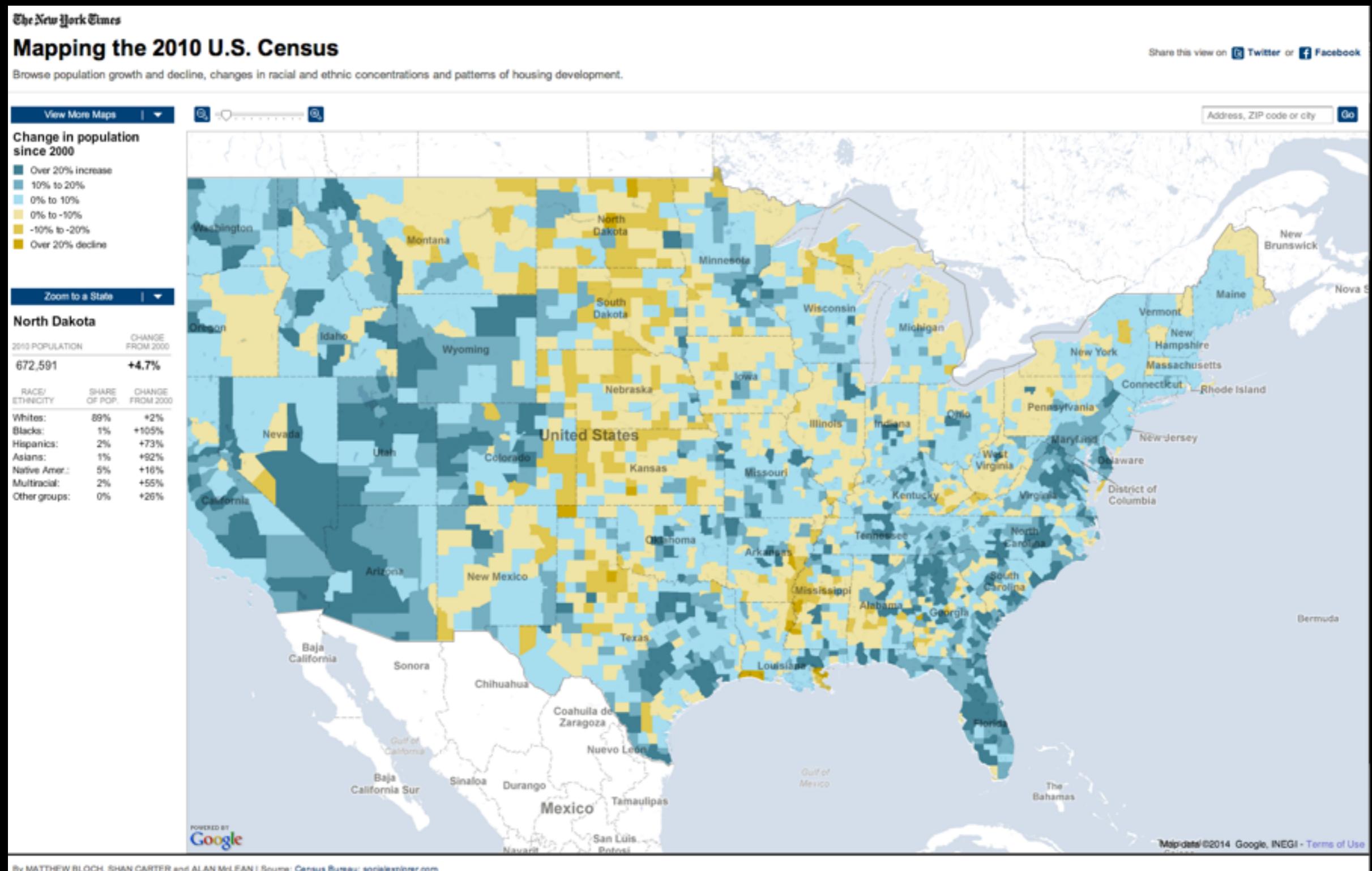
maps

infographics

data visualizations

news applications

<http://projects.nytimes.com/census/2010/map>



<http://graphics.wsj.com/health-care-explorer/>

HealthCare.gov Explorer

See the rates for health plans available through HealthCare.gov, the federal insurance exchange. Many consumers will also be eligible for federal subsidies to help buy coverage through the exchanges, and may pay lower rates. Plans are labeled Catastrophic, Bronze, Silver, Gold or Platinum depending on the level of coverage.

Interactive by: Martin Burch, Madeline Farbman, Jonathan Keegan, Adam Suharja, Christopher Weaver, Kurt Wilberding/The Wall Street Journal.
Write to the editors at WSJGraphicsEditors@WSJ.com.



How Health-Insurance Subsidies Are Calculated



AGE PLAN TYPE STATE COUNTY OR ADDRESS

30 Silver Alabama Autauga SEARCH GEO LOCATE

Range of prices for lowest-cost Silver plans on HealthCare.gov

\$144 Allegheny, Pa.	\$215 Autauga, Ala.	\$409 Worth, Ga.
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Alabama: Autauga

Results

CALCULATE SUBSIDY ▶

SHOW ALL

\$215 monthly premium

Silver PLAN DETAILS ▶
AGE 30 AUTAUGA, ALA.

BLUE CROSS AND BLUE SHIELD OF ALABAMA
Blue Value Silver

DEDUCTIBLE	\$2,400
OUT-OF-POCKET MAX	\$6,350
COST OF DOCTOR'S VISIT	\$40

About Silver plans ▶

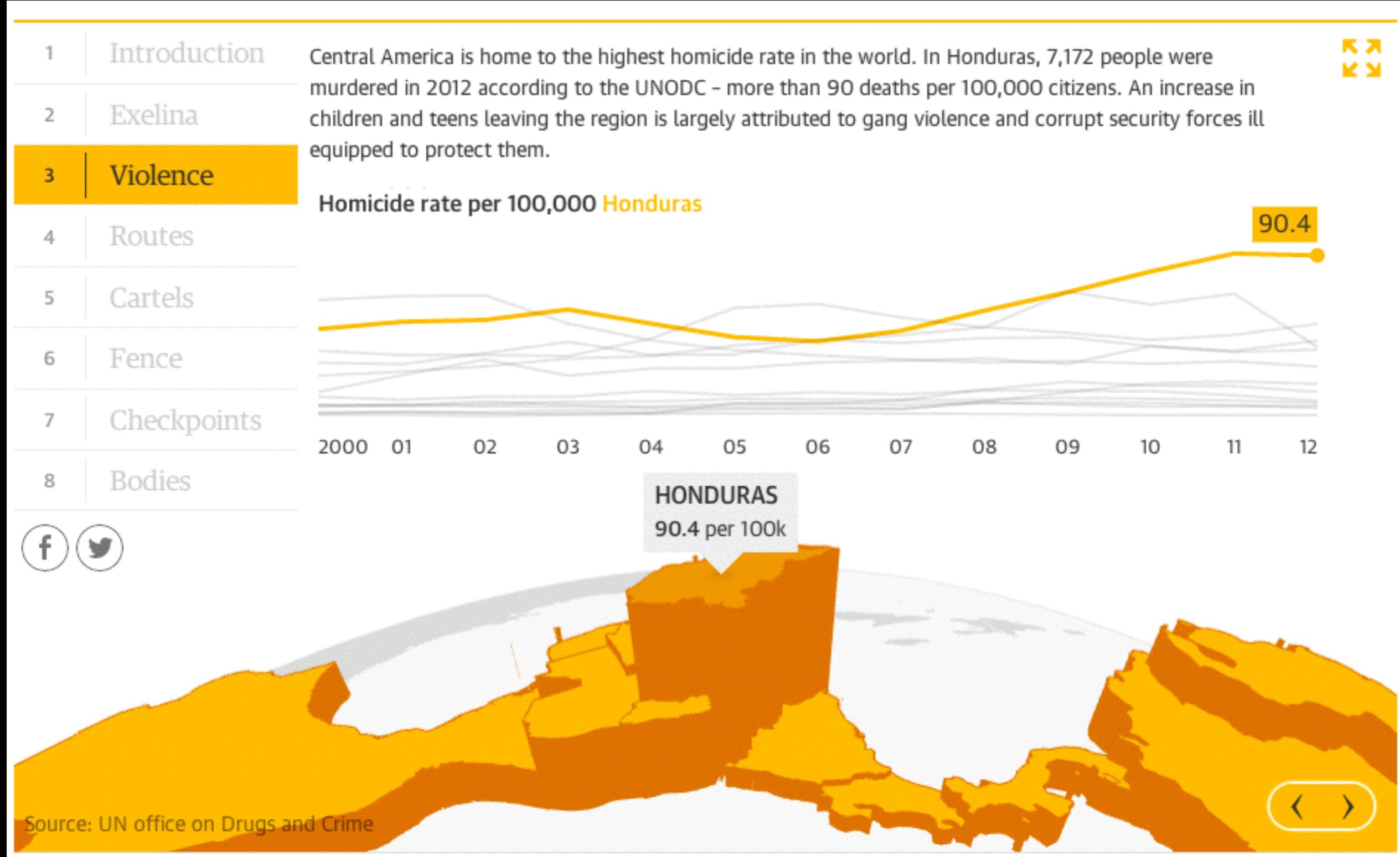
\$228 monthly premium

Silver PLAN DETAILS ▶

Click pins to compare and share plans

but the boundaries aren't always clear

how do we call this?



or this?



THE LENS Losing Ground



DONATE TO PROPUBLICA

DONATE TO THE LENS



Louisiana is drowning, quickly.

In just 80 years, some 2,000 square miles of its coastal landscape have turned to open water, wiping places off maps, bringing the Gulf of Mexico to the back door of New Orleans and posing a lethal threat to an energy and shipping corridor vital to the nation's economy.

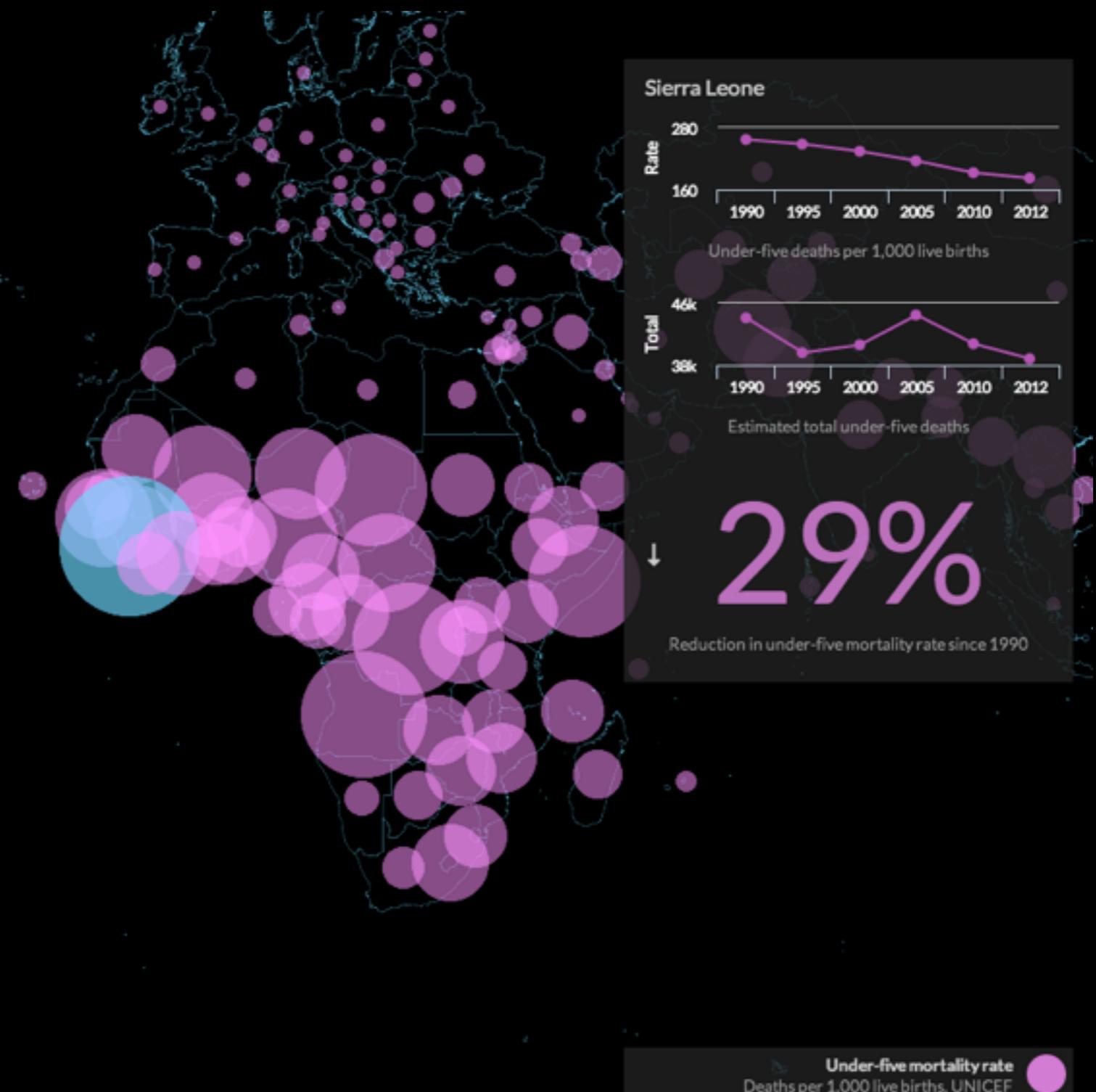
And it's going to get worse, even quicker.

Scientists now say one of the greatest environmental and economic disasters in the nation's history is rushing toward a catastrophic conclusion over the next 50 years, so far unabated and largely unnoticed.

At the current rates that the sea is rising and land is sinking, National Oceanic and Atmospheric Administration scientists say by 2100 the Gulf of Mexico could rise as

<http://projects.propublica.org/louisiana/>

or this?



Pulitzer Center