

Taming Treacherous Data | DHSI 2019 | Day 1 PM | Deck 2

Best & Worst Visualization Practices

Defense Against the Dark Arts





AROUND
THE
WORLD

GIANT HORNETS KILL 42 PEOPLE IN CHINA

LIVE
CNN

RIGHT NOW

CHICAGO



71°

DETROIT



66°

HOUSTON



77°

MENTAL HEALTH EVALUATION IN MIRIAM CAREY'S HOME AFTER DC C

CNN.com

2012 PRESIDENTIAL RUN

GOP CANDIDATES



FOX

47°

SOURCE: OPINIONS

DYNAMIC

OBAMACARE ENROLLMENT

6,000,000

AS OF
MARCH 27

7,066,000

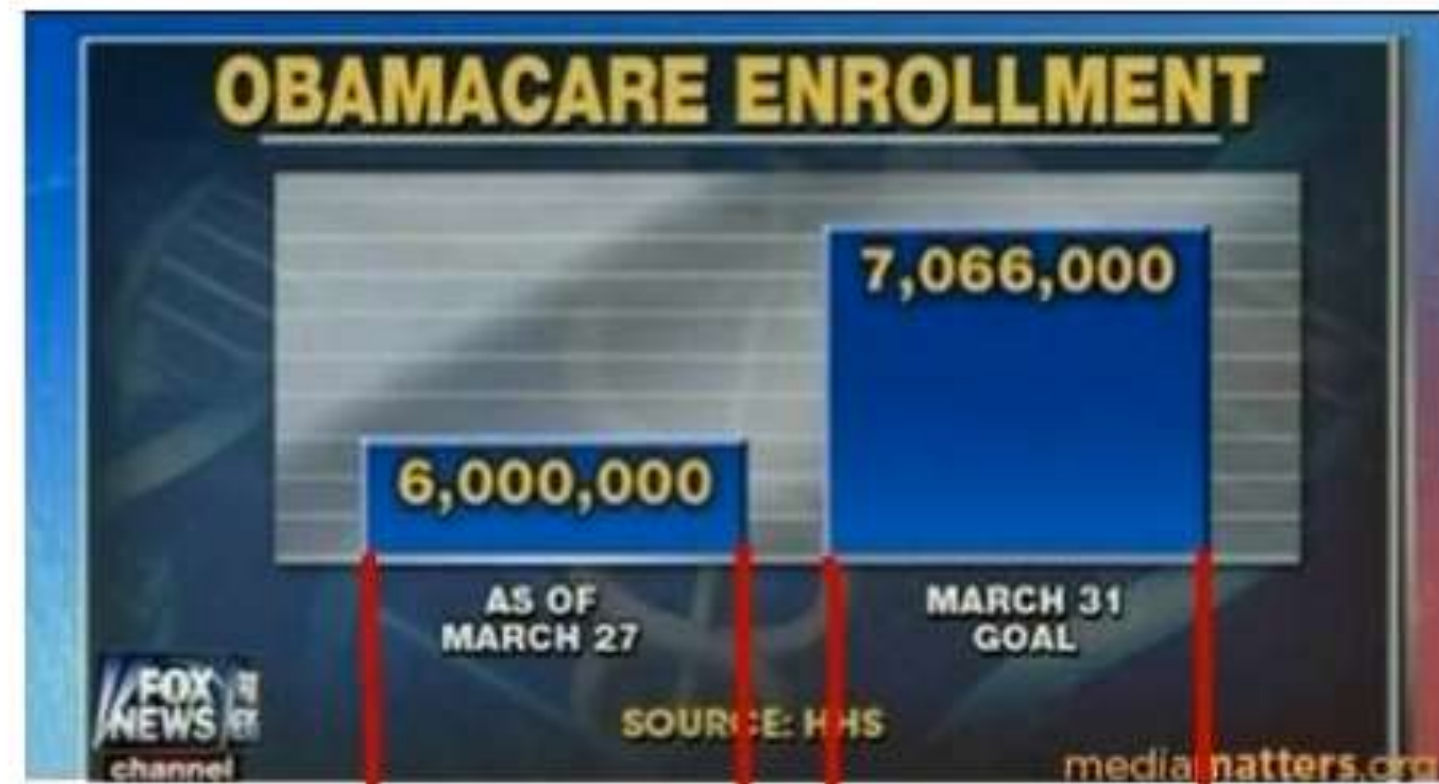
MARCH 31
GOAL



SOURCE: HHS

mediamatters.org

IE IN SECOND PLACE WITH \$26.5 MIL, WHILE "MUPP DOW FUT 16,325.00



OBAMACARE ENROLLMENT



FOX NEWS
channel

SOURCE: CBO

AMERICA'S
newsroom

ED FUEL TO FMR UKRAINIAN PRES VIKTOR Y

UNEMPLOYMENT RATE

UNDER PRESIDENT OBAMA



2011

SOURCE: BUREAU OF LABOR STATISTICS

EAR WAR AND A TROOP WITHDRAWAL AT THE E NAS FUT 2,292.50

UNEMPLOYMENT RATE

UNDER PRESIDENT OBAMA

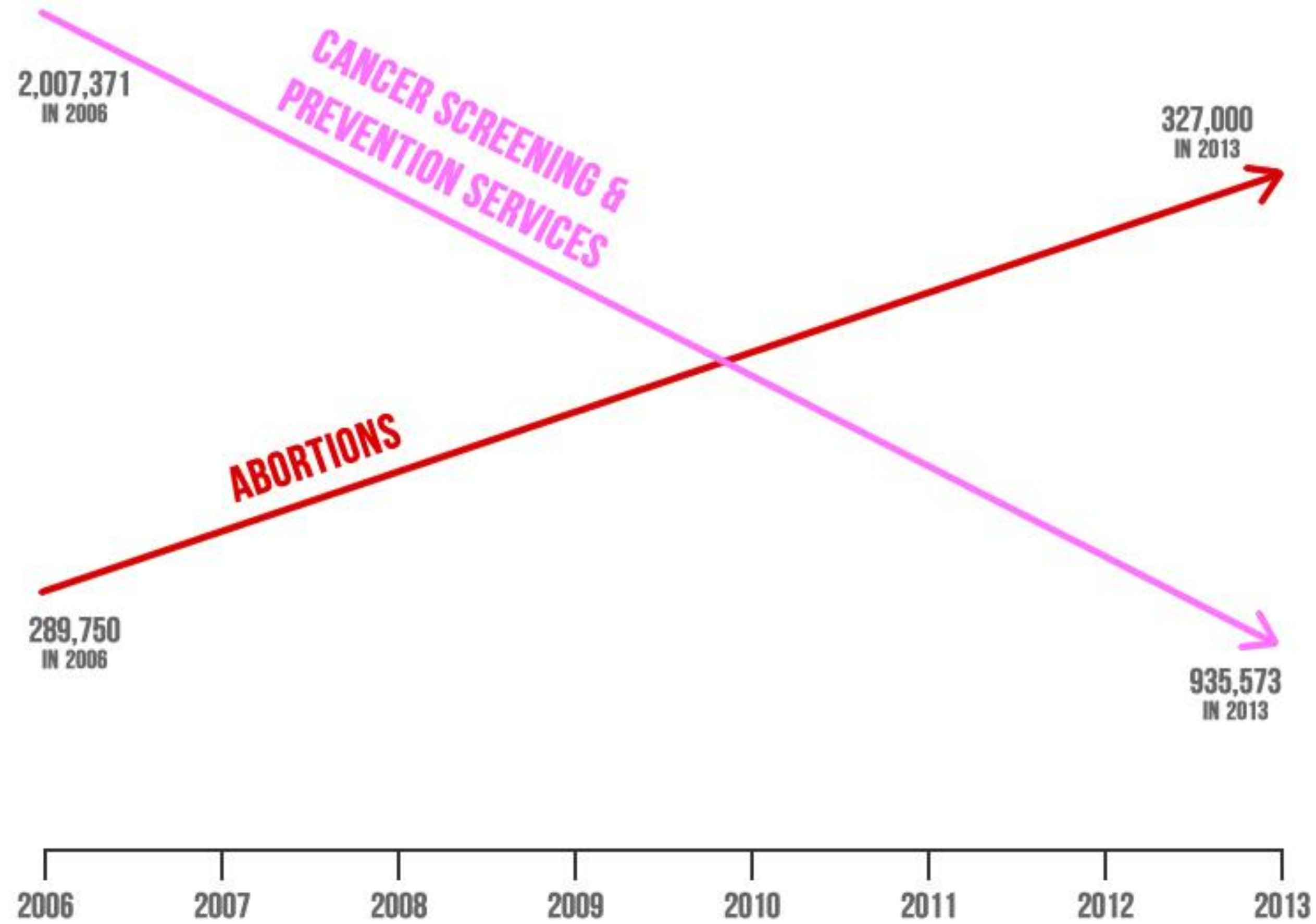


2011

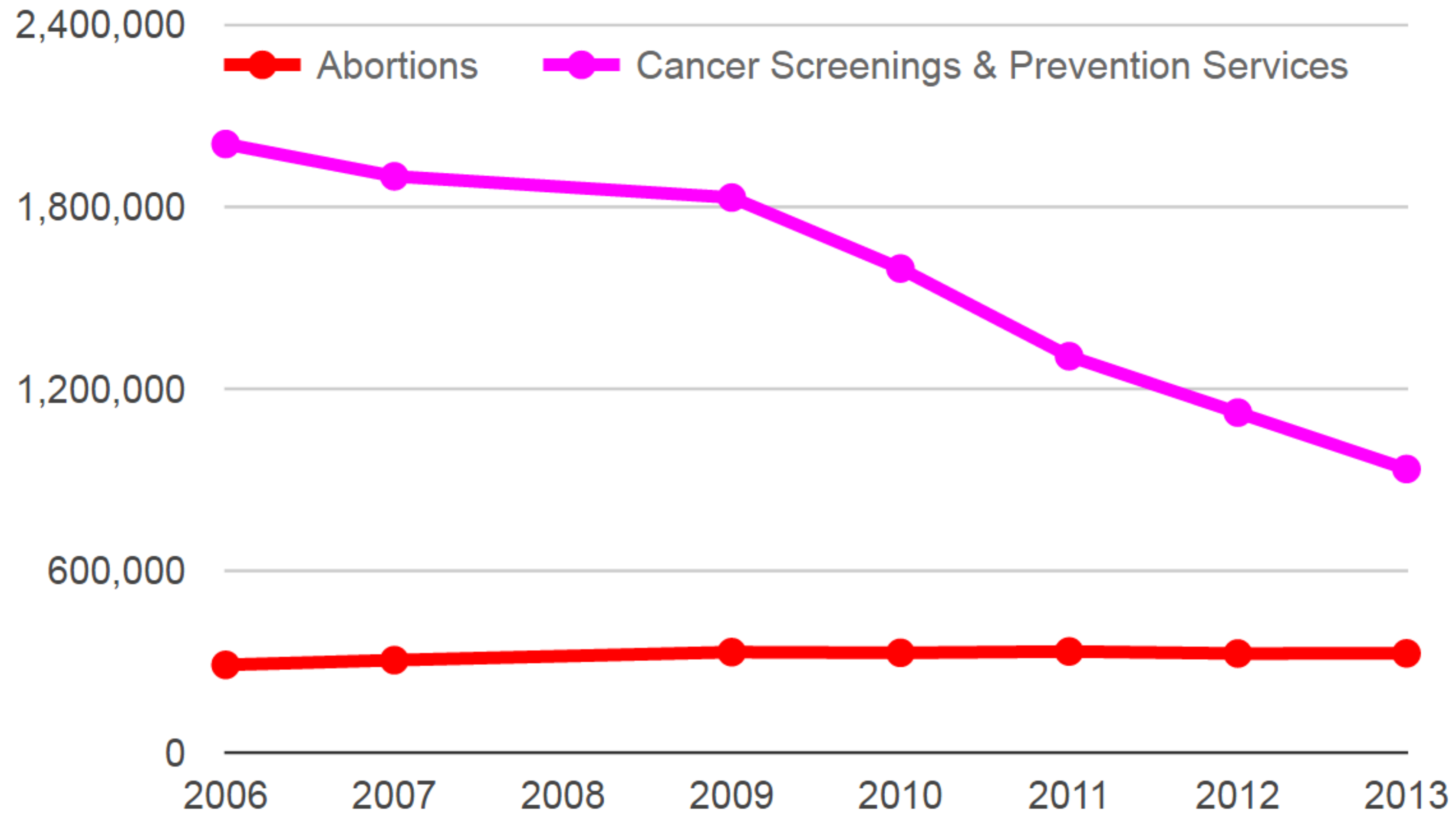
SOURCE: BUREAU OF LABOR STATISTICS

EAR WAR AND A TROOP WITHDRAWAL AT THE E NAS FUT 2,292.50

PLANNED PARENTHOOD FEDERATION OF AMERICA: ABORTIONS UP — LIFE-SAVING PROCEDURES DOWN

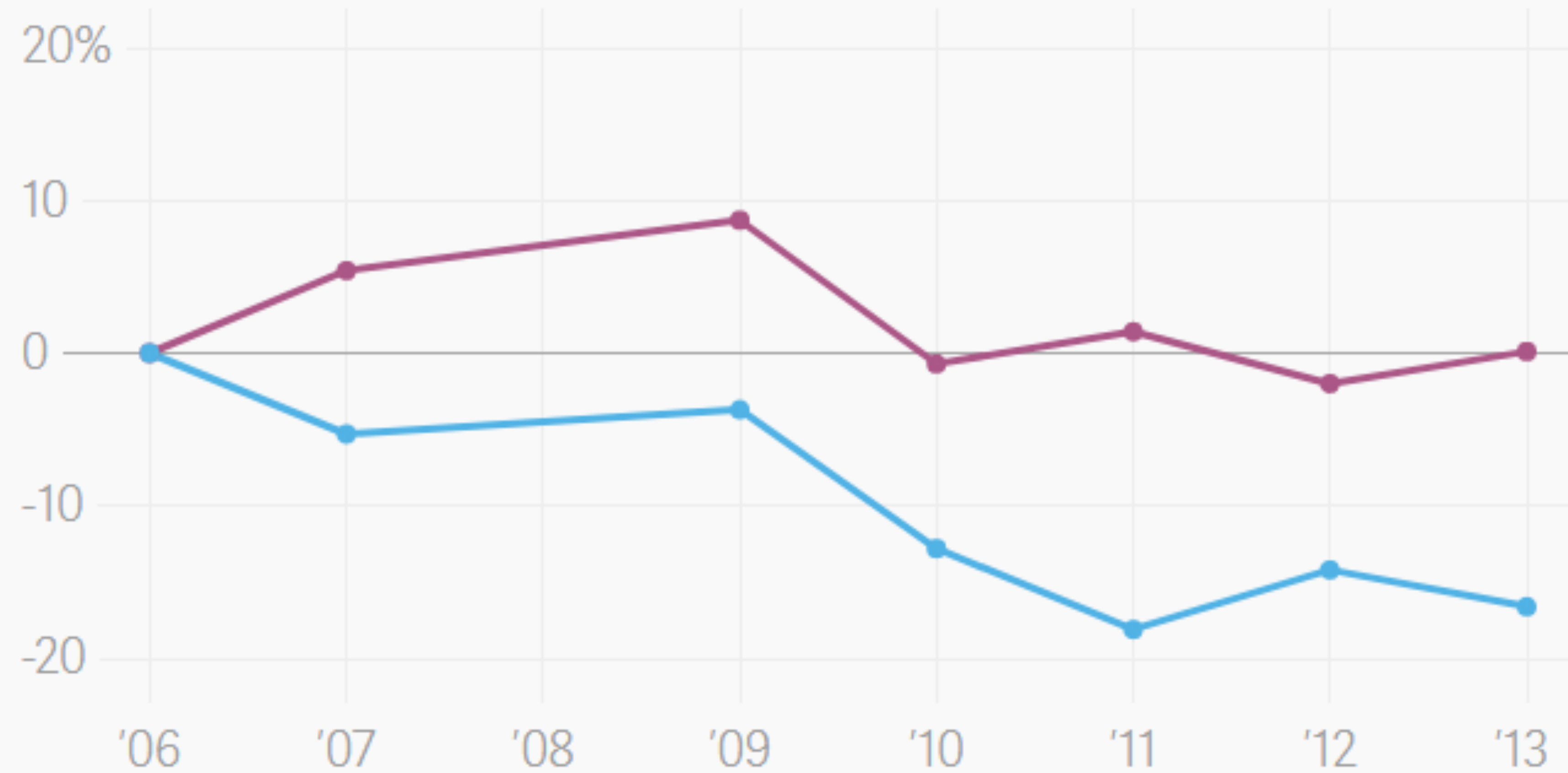


Planned Parenthood Federation of America: Abortions vs. Cancer and Prevention Services



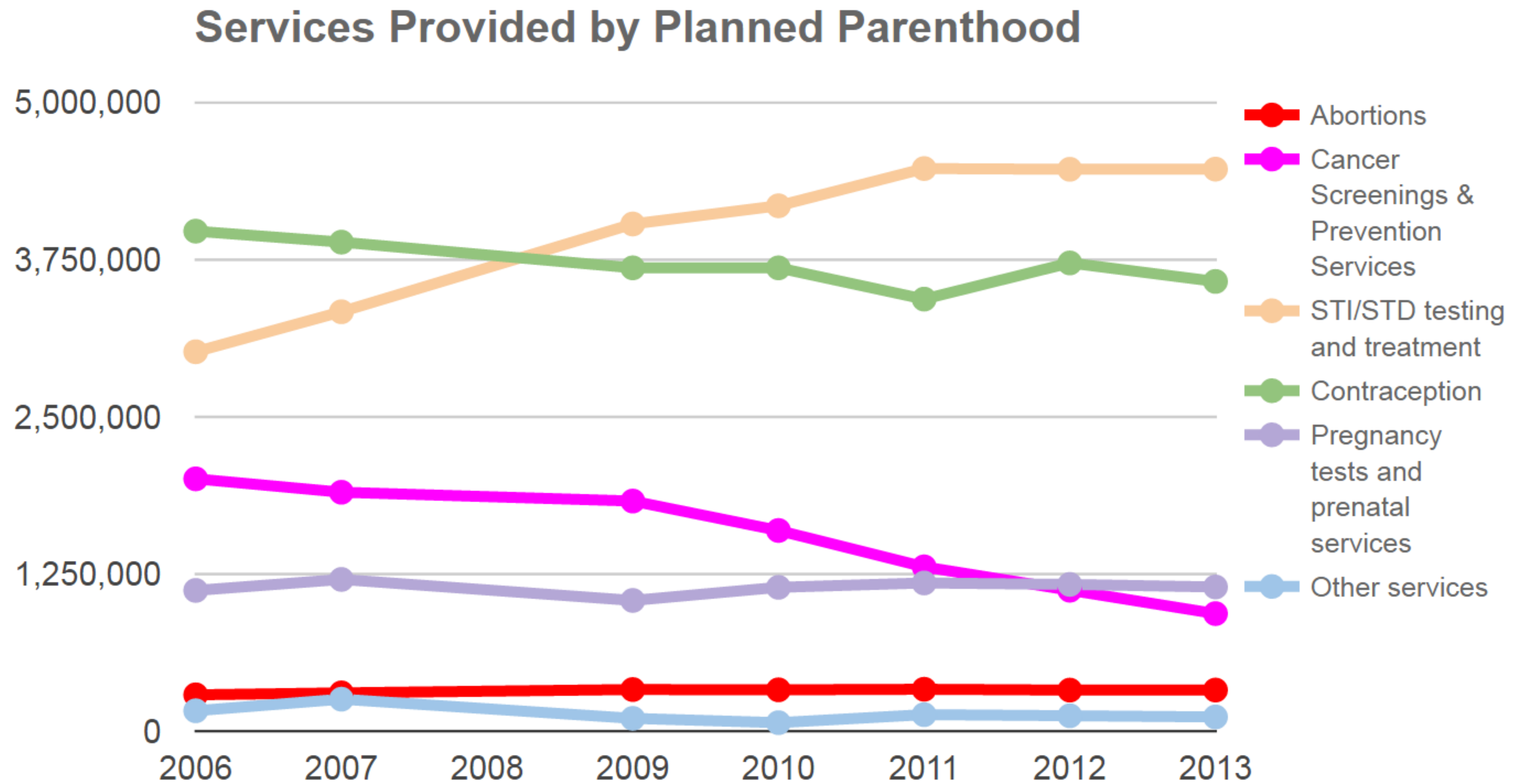
Planned Parenthood changes in services, year-over-year

■ Abortion procedures ■ Cancer screening / preventative services



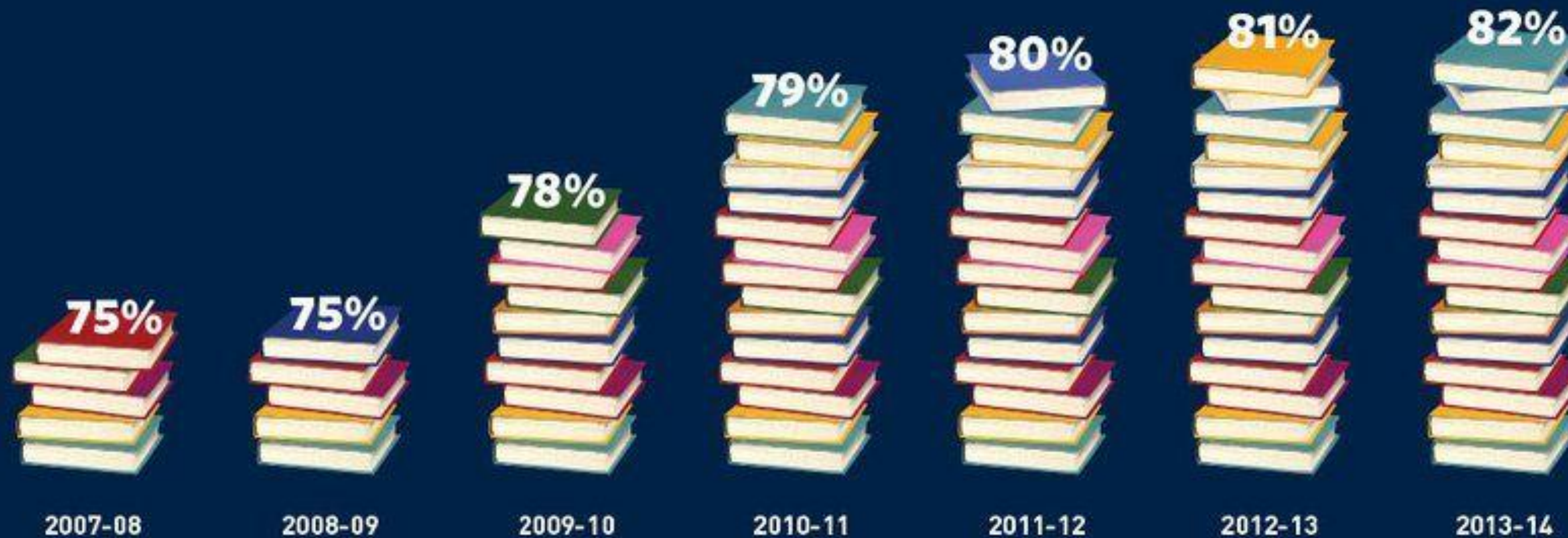
Δ T L Δ S | Data: Politifact

Share



UNDER PRESIDENT OBAMA,
MORE STUDENTS ARE EARNING THEIR HIGH SCHOOL DIPLOMAS THAN EVER BEFORE

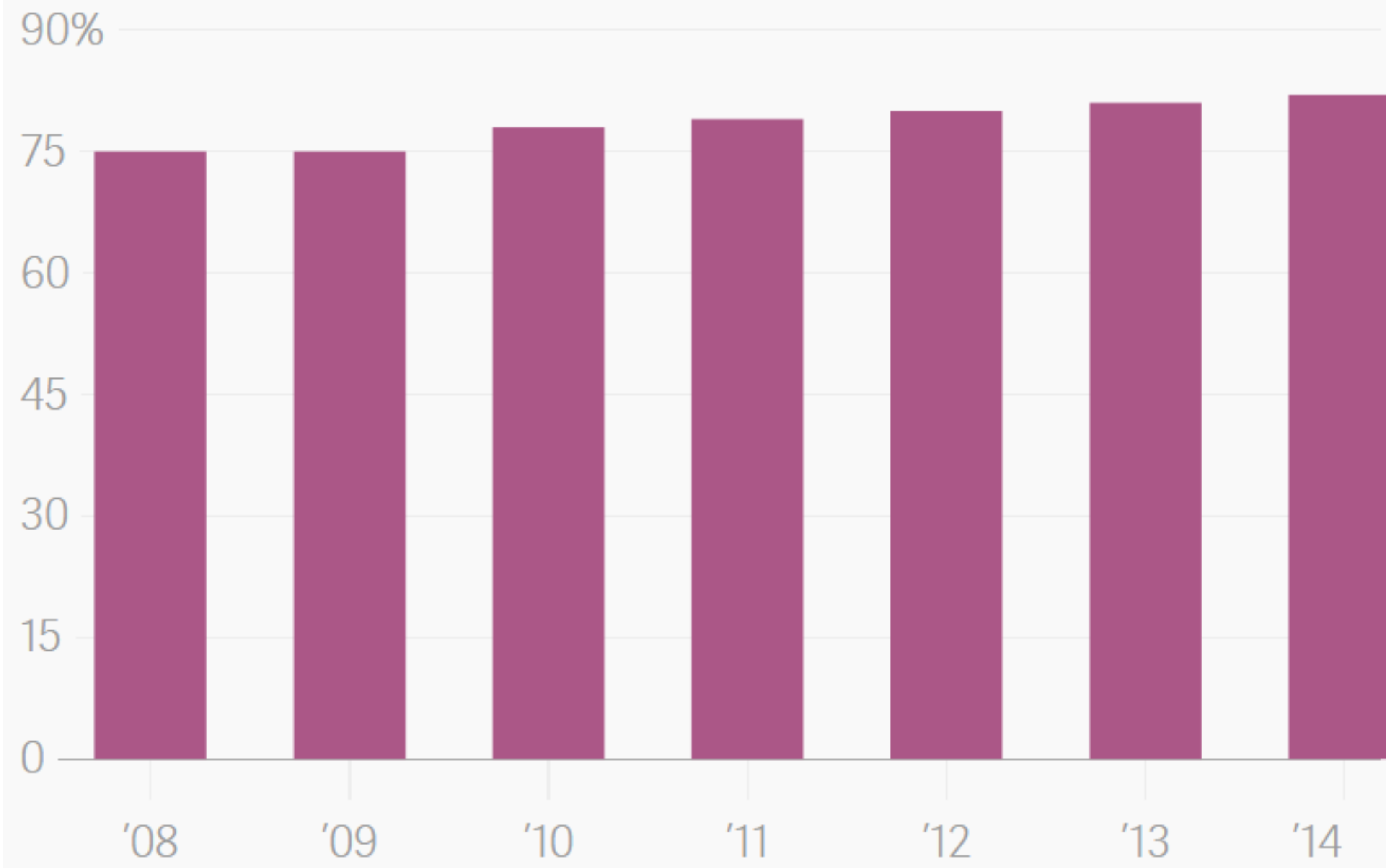
HIGH SCHOOL GRADUATION RATE



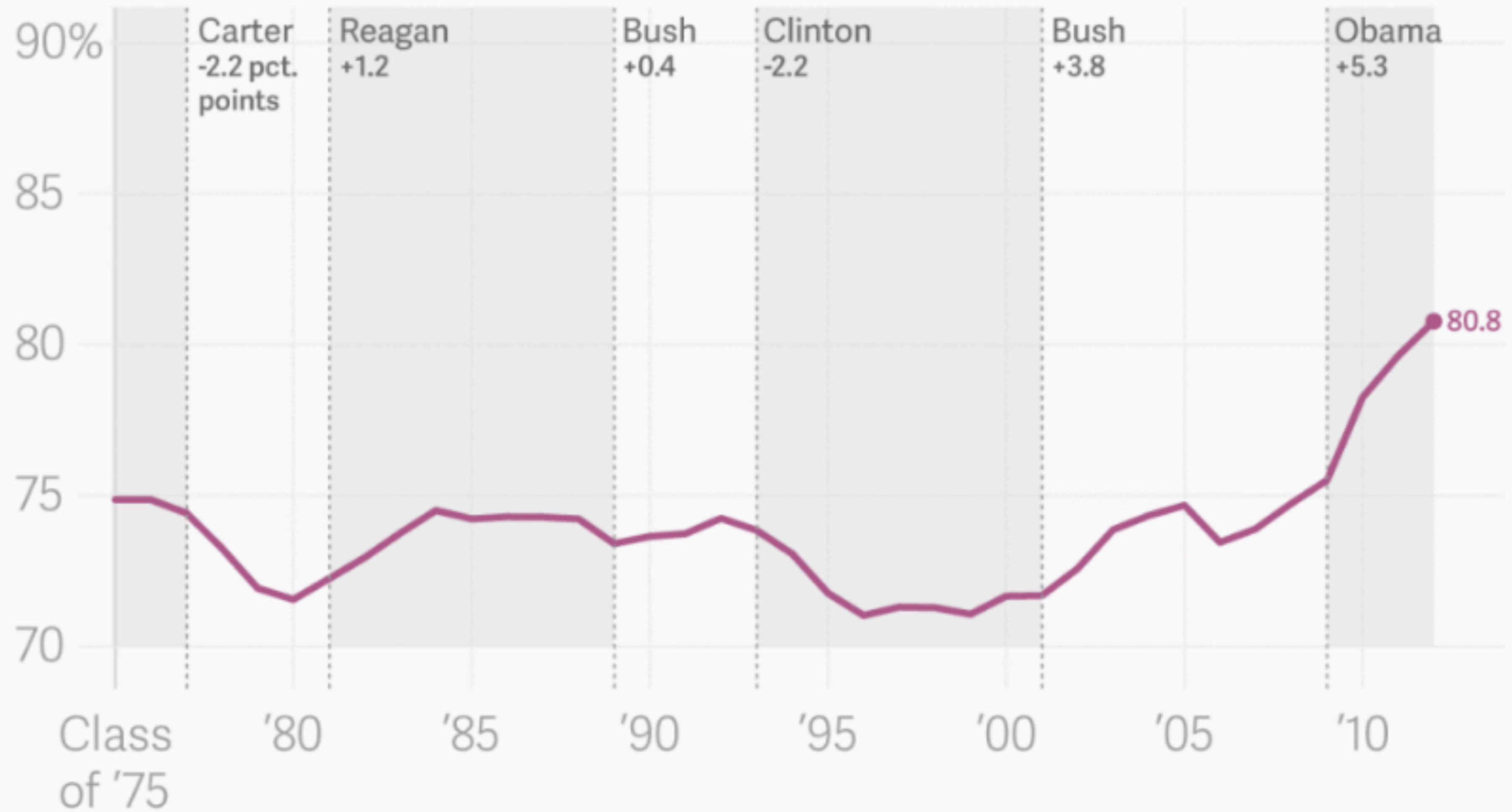
#LeadOnEducation

SOURCE: U.S. DEPARTMENT OF EDUCATION,
NATIONAL CENTER FOR EDUCATION STATISTICS

High school graduation rates in the US



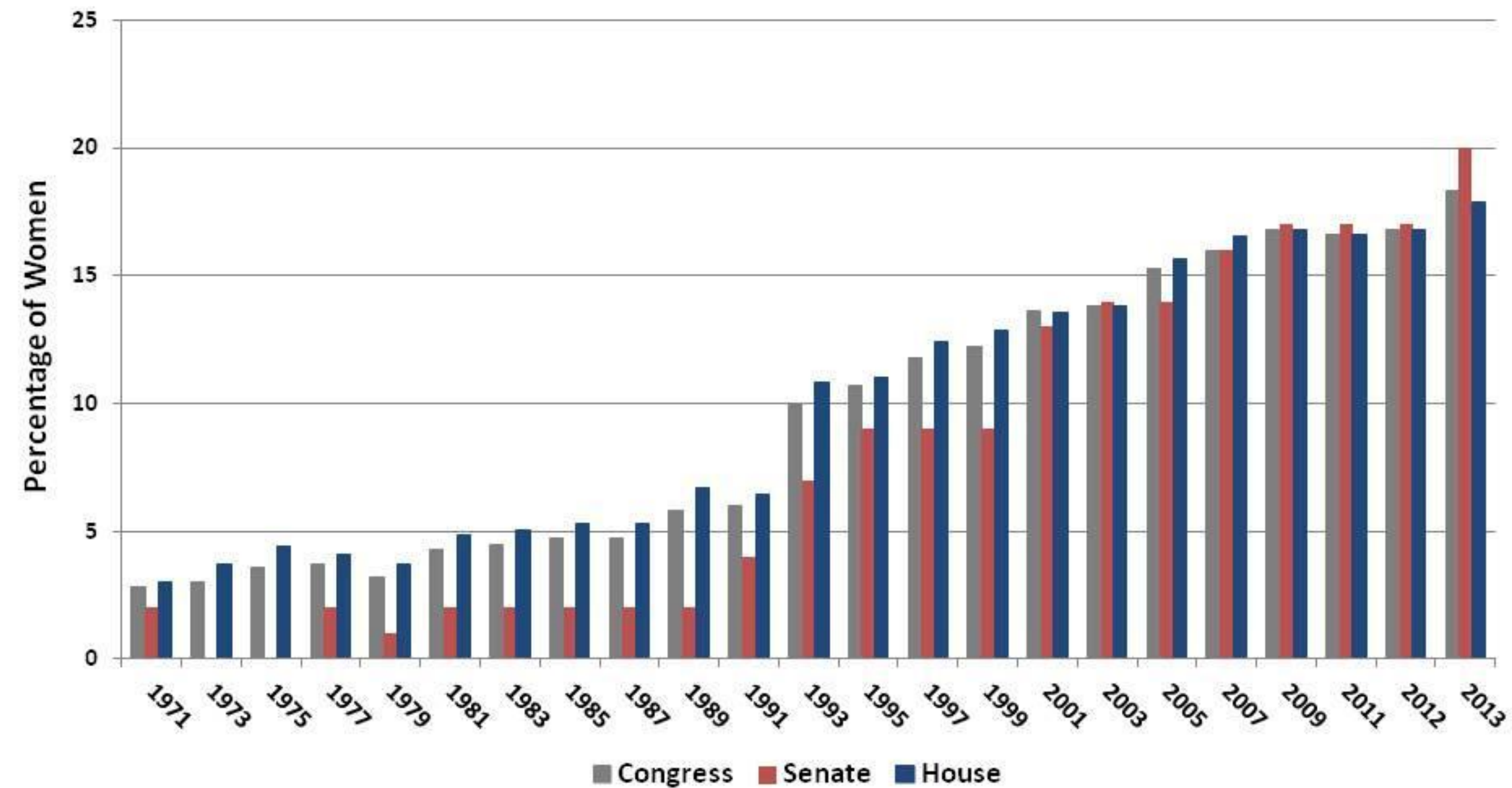
High school graduation rates in the US, 1975 to 2012



Quartz | qz.com

Data: National Center for Education Statistics

Women in the U.S. Congress 1971-2013

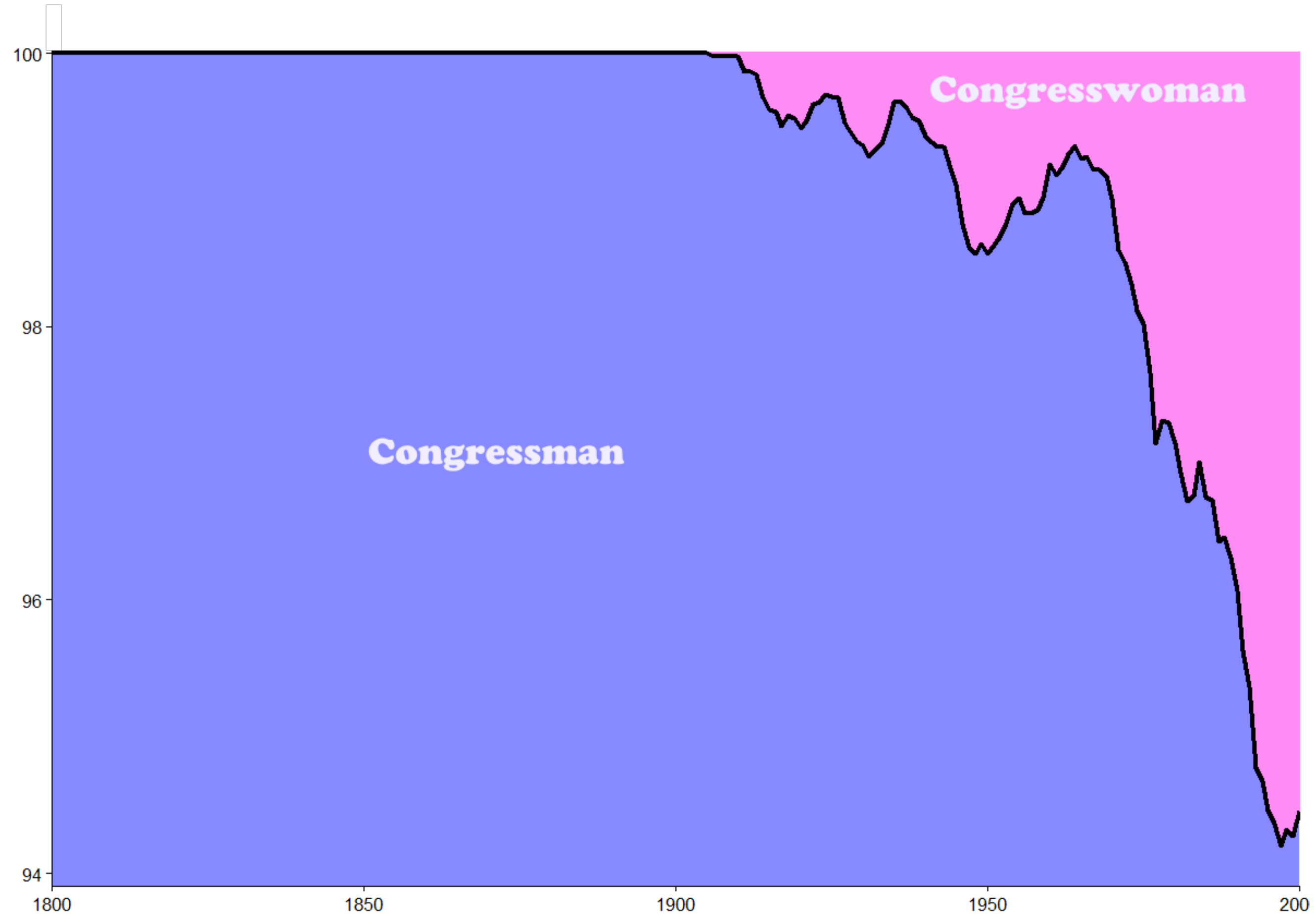


© Center for American Women and Politics
Updated 1/8/13

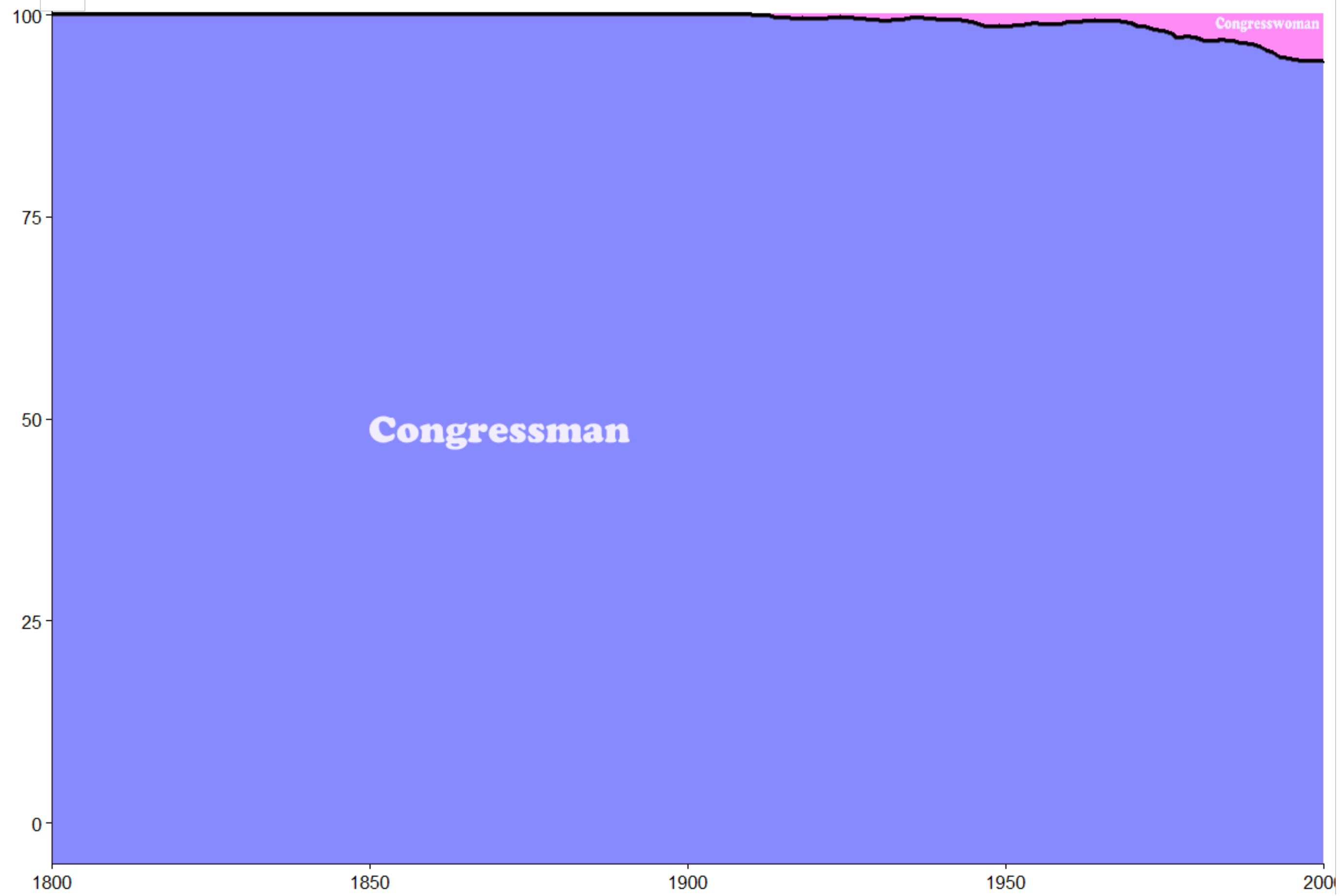
RUTGERS
Center for American
Women and Politics

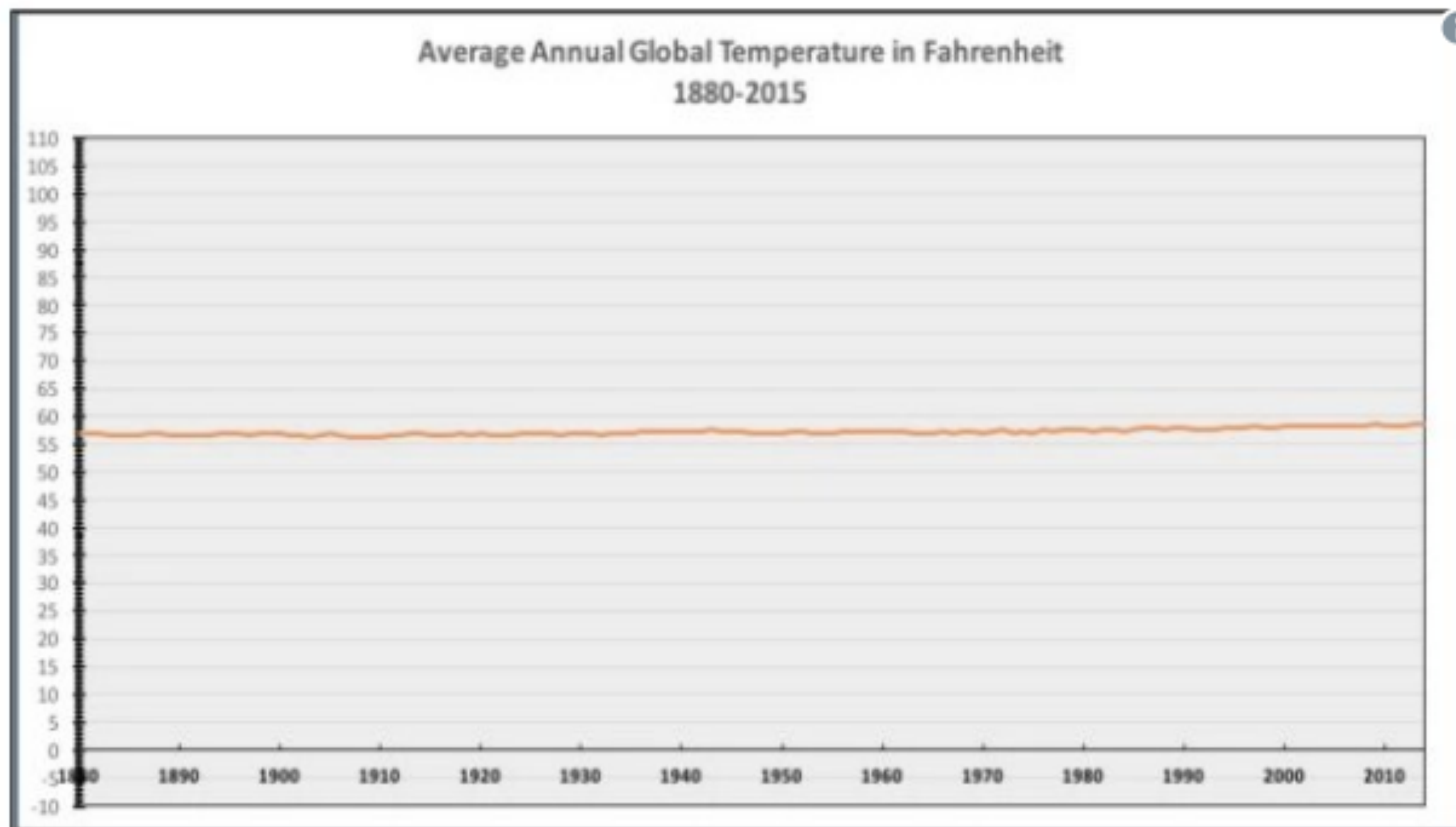


N-Gram, Congressman vs. Congresswoman as a total percentage of mentions (congressman + congresswoman)



N-Gram, Congressman vs. Congresswoman as a total percentage of mentions (congressman + congresswoman)





NR National Review 
@NRO



The only #climatechange chart you need to see. natl.re/wPKpro

Average global temperature, 1880 to 2014

60° fahrenheit

59

58

57

56

55

1880

1900

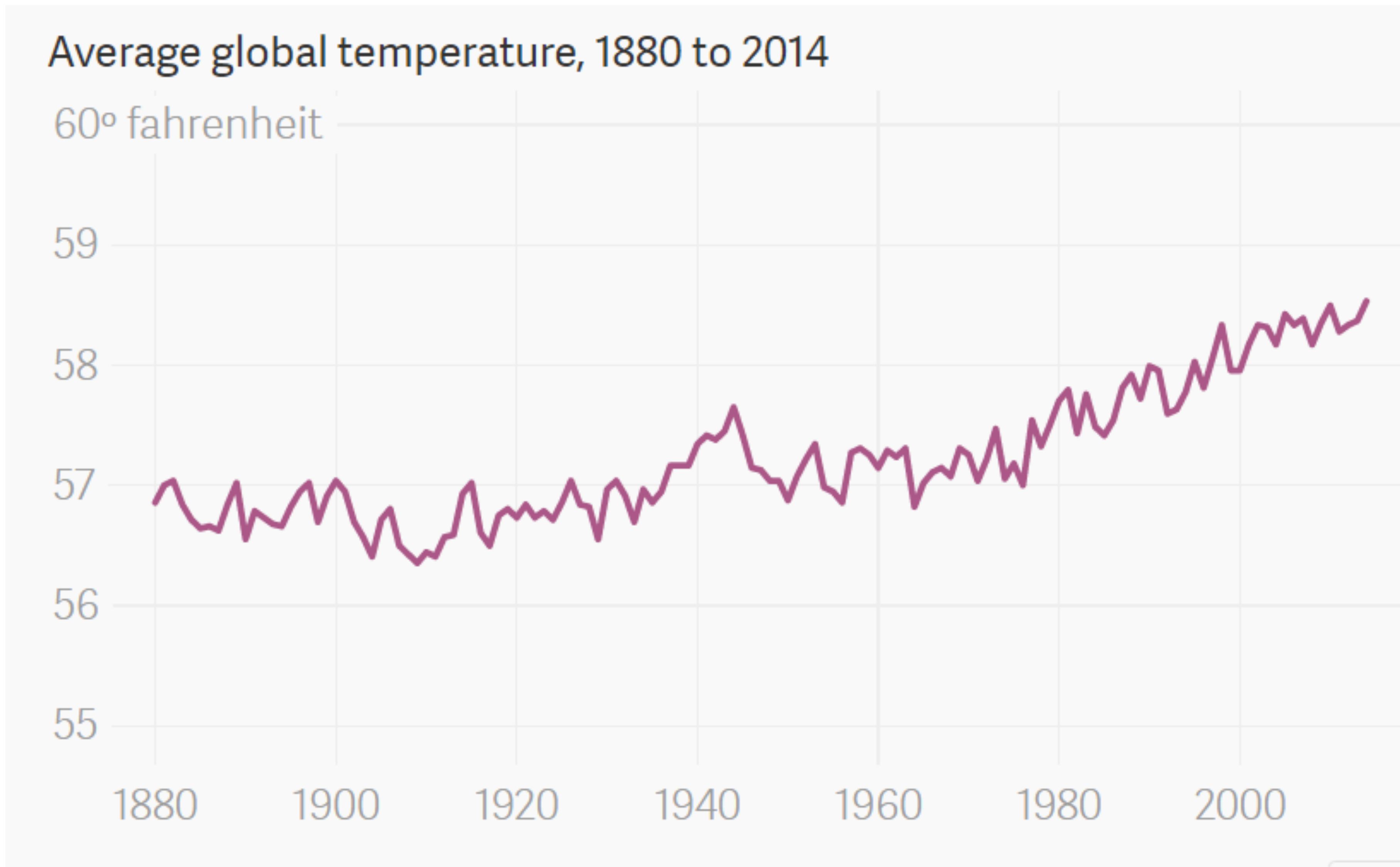
1920

1940

1960

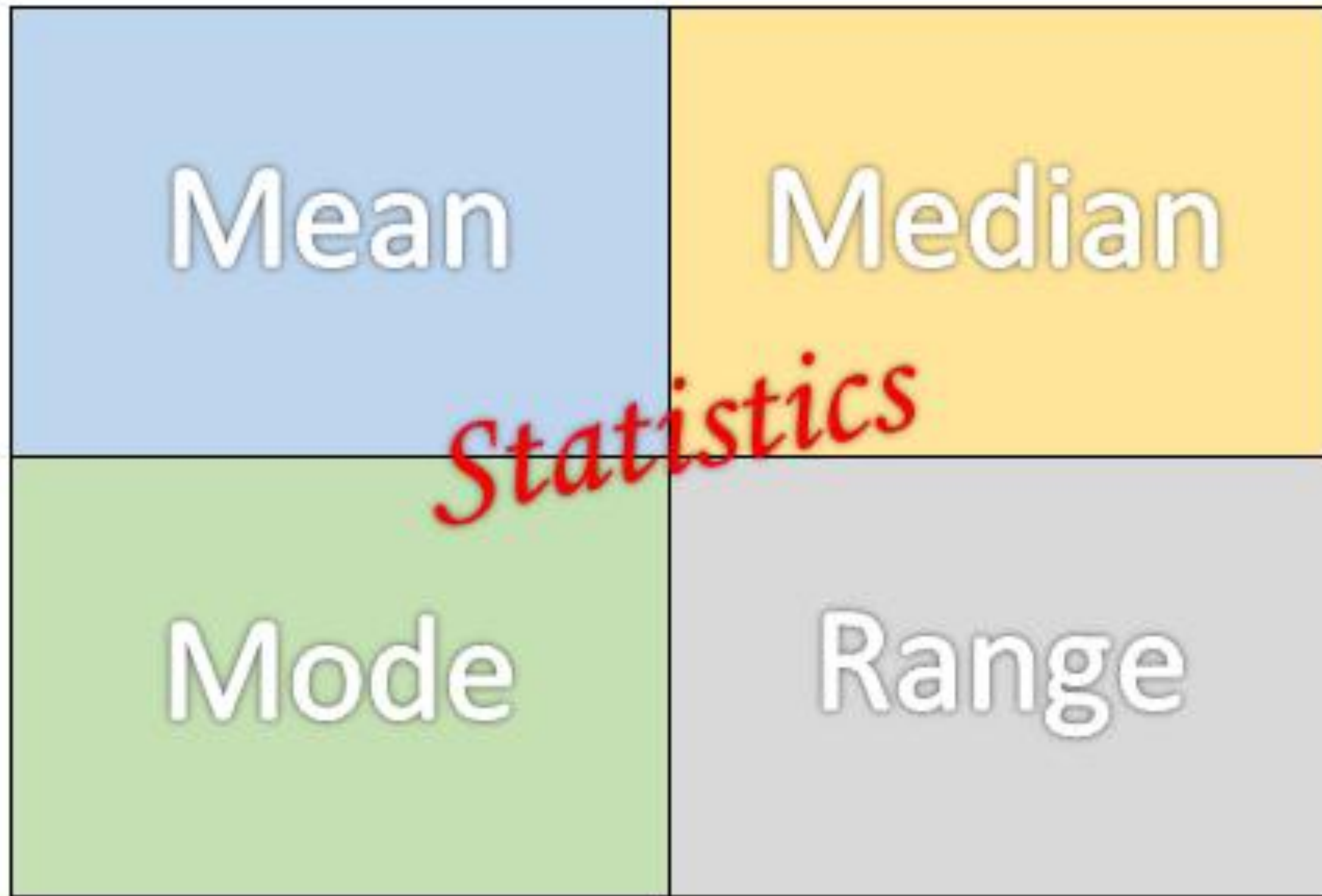
1980

2000

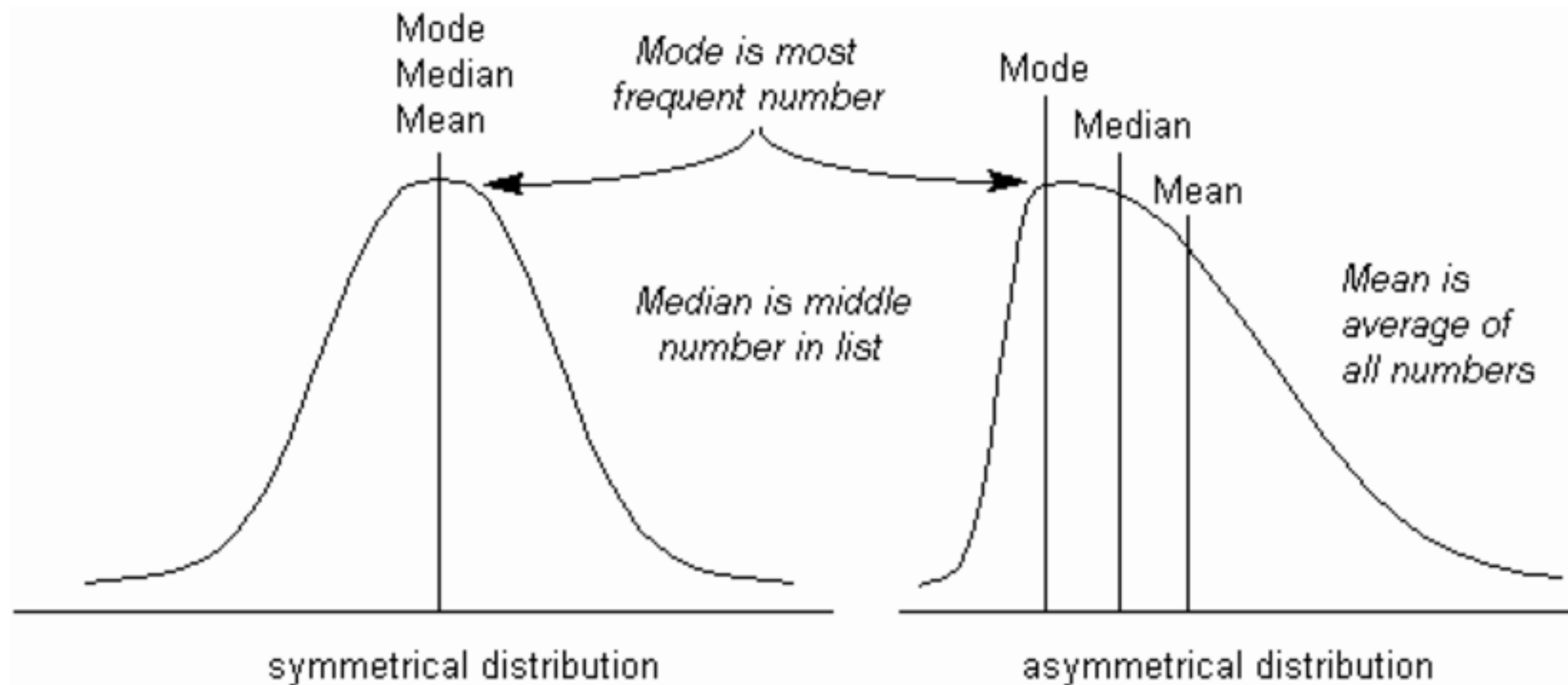


Lying with Statistics





Distribution Matters!



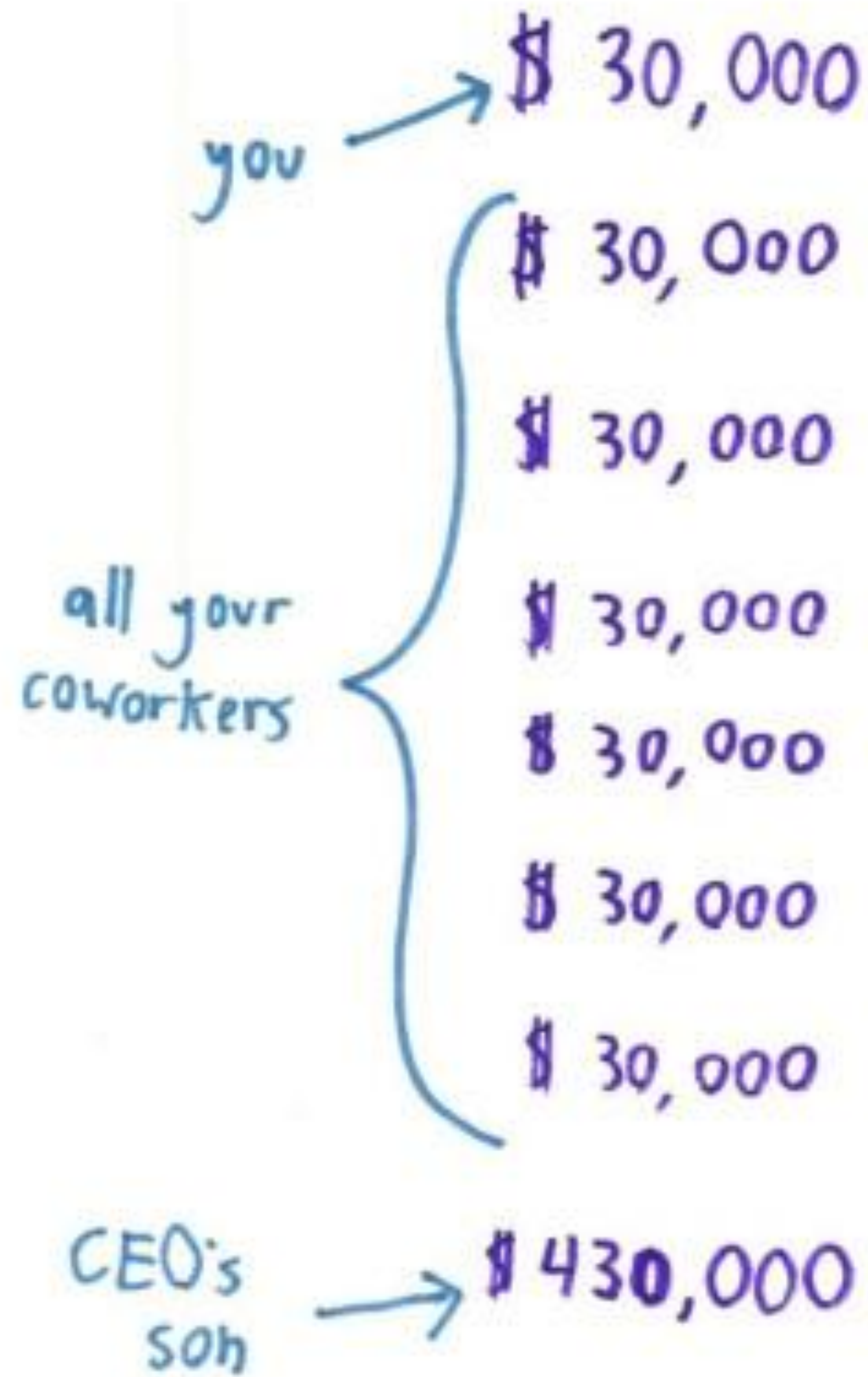
Mean

What would my
starting salary be?



I'll put it this way:
our average starting
salary is \$80,000!





Average: \$80,000.



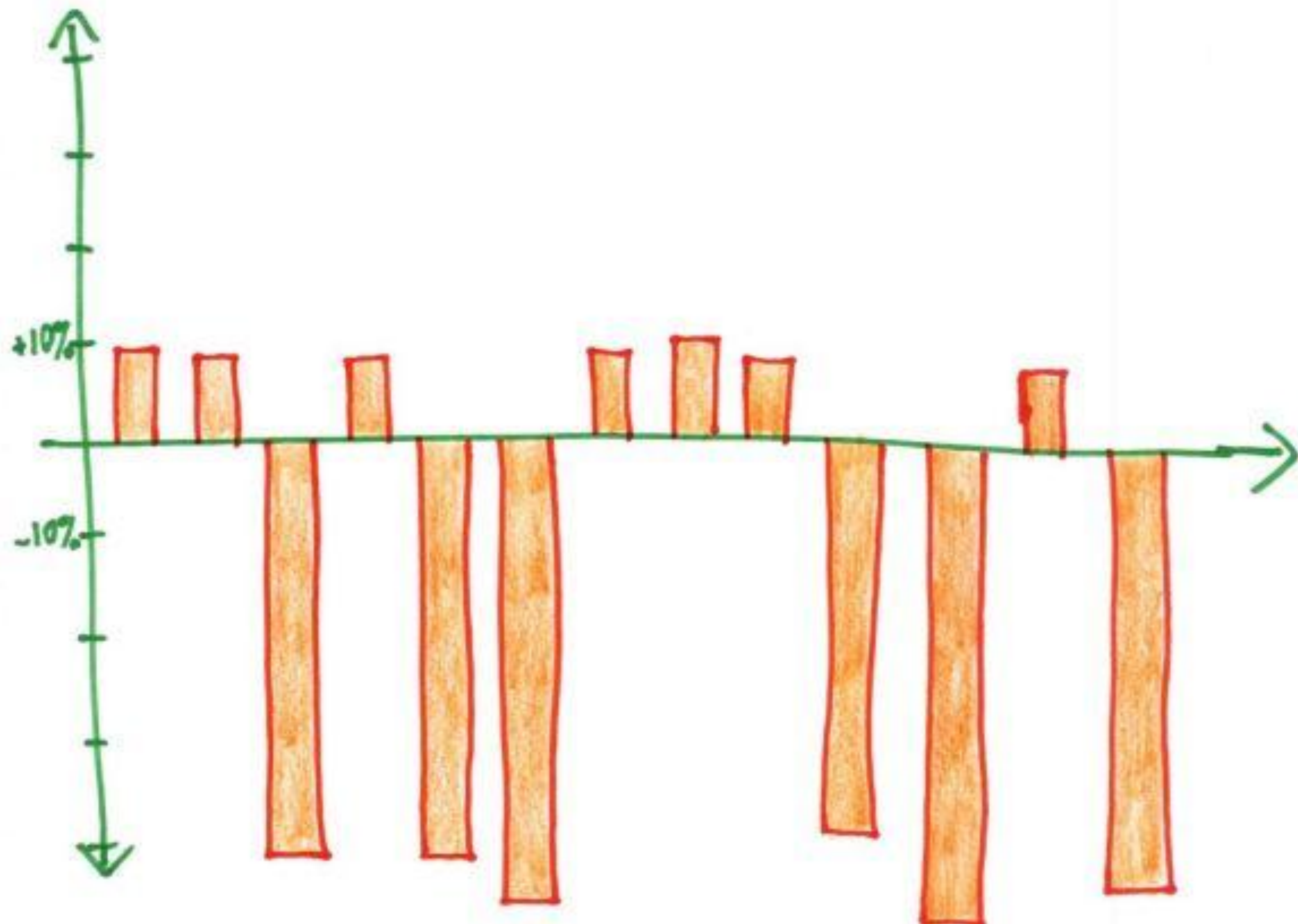
Median

So, why should I
invest with you?



Well, not to brag, but
my fund has a median
gain of 8% per year!





Mode

How are you doing
on your tests?



My modal category
is 70-80%!





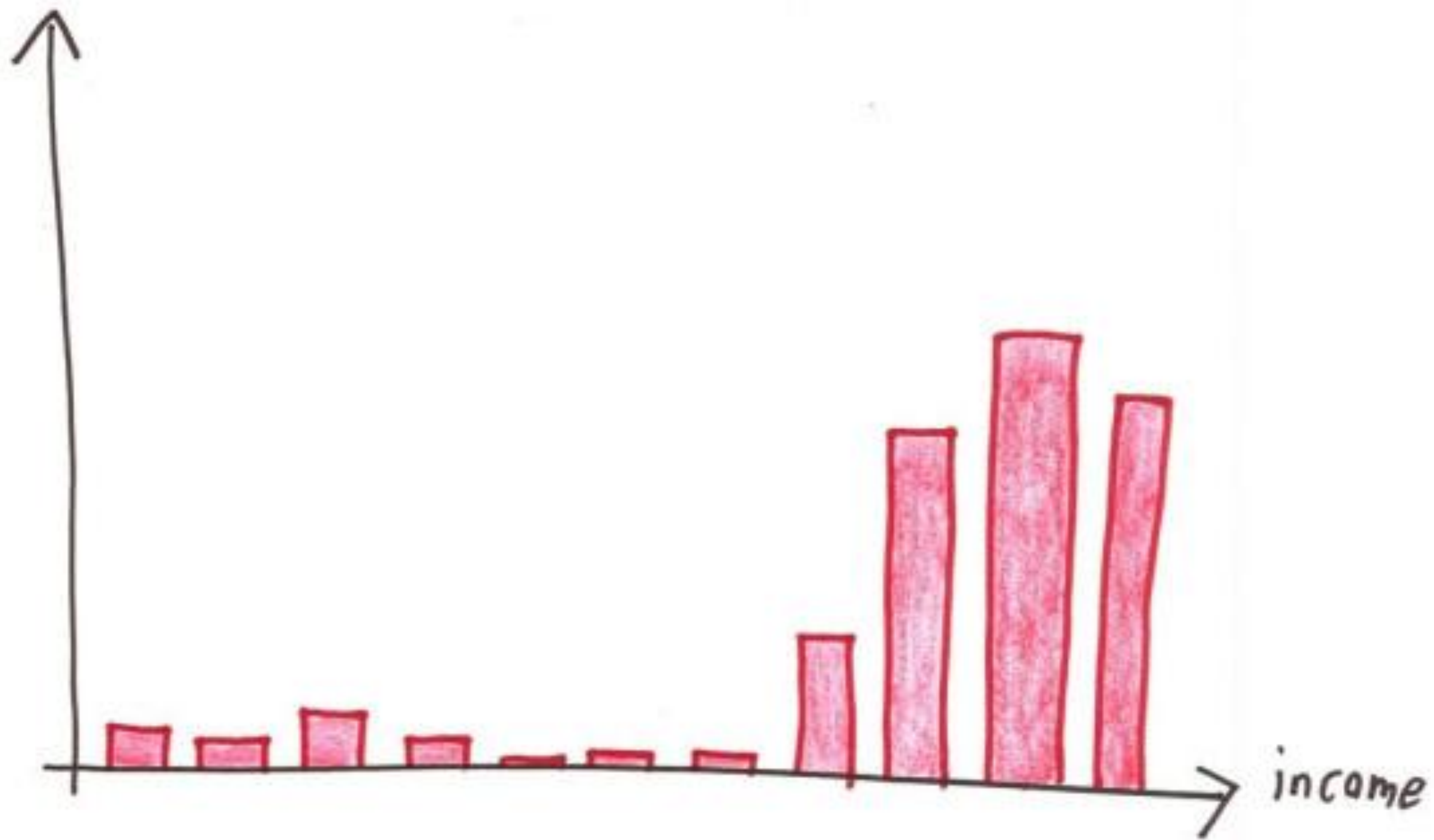
Score Category	Number of Tests
90s	0
80s	0
70s	2
60s	1
50s	1
40s	1
30s	1
20s	1

Range

Our students come from a
wide range of
socioeconomic
backgrounds...



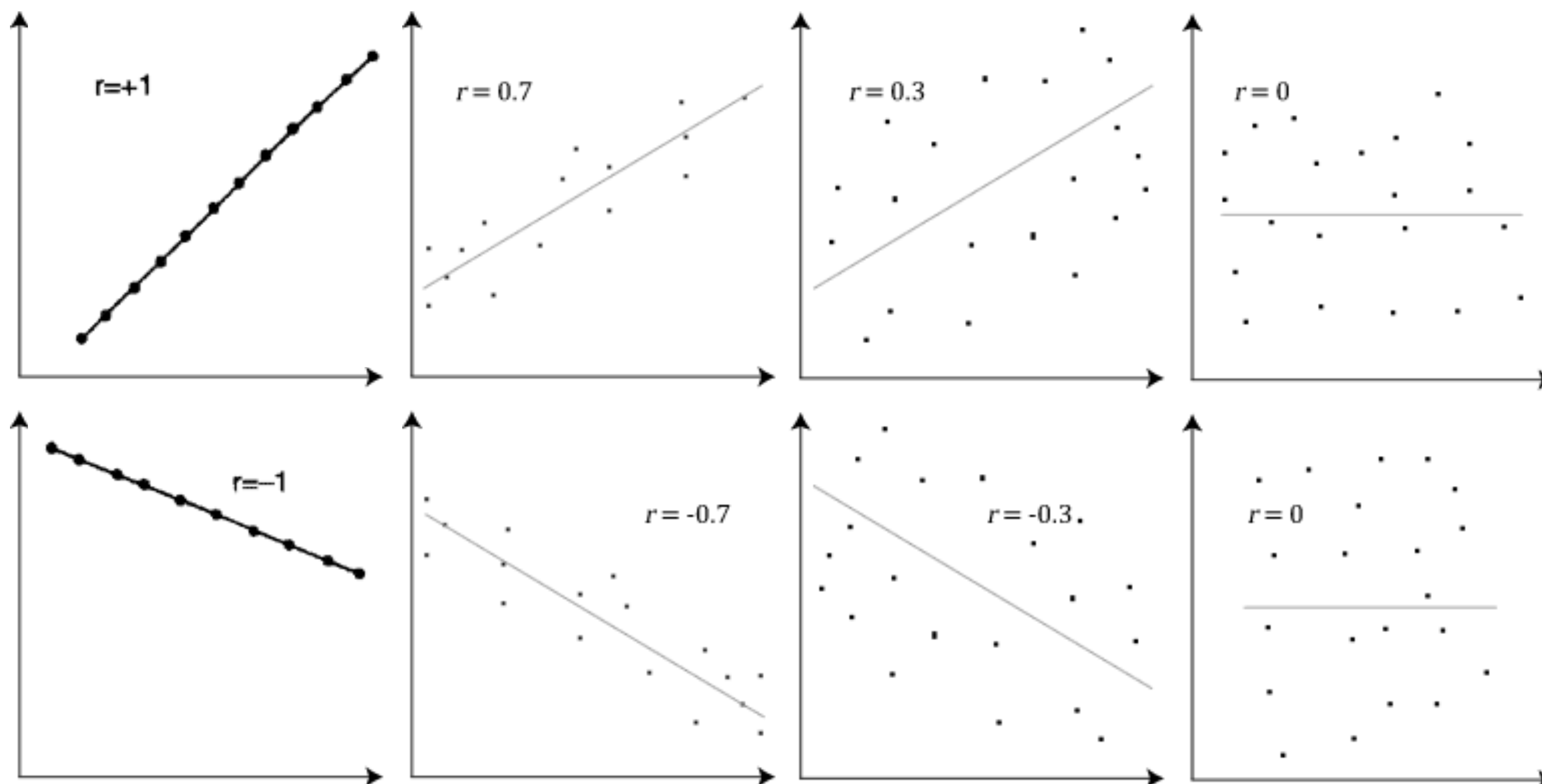
number
of students



Correlation Coefficient

Try our energy drink —
it's highly correlated with
performance!





Correlation Coefficient
Shows Strength & Direction of Correlation



athletic
performance

professional athletes we
paid to guzzle the stuff



amount of
drink consumed

Variance



Variance

These results are
a disaster!



Sure, they look bad,
but there's a lot of variance!



Don't rush
to judgment.

