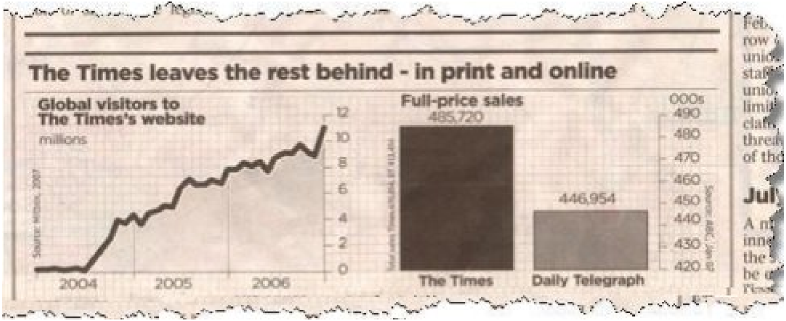
Misleading Graphs

January 20, 2017

Bar Graphs: Misleading Baseline

Does the Times have more than double the full price sales of the Daily Telegraph?



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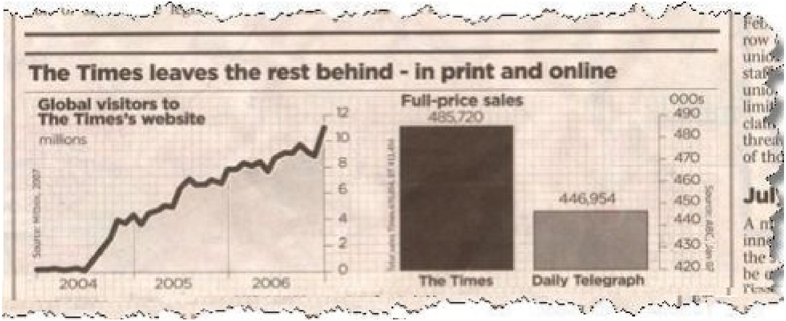
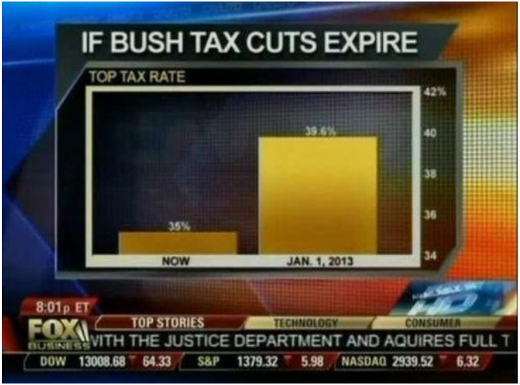


$$\frac{485,720}{446,954} \approx 1.086$$

About an 8.6% increase.

Bar Graphs: Misleading Baseline

Will the top tax rate increase sixfold?



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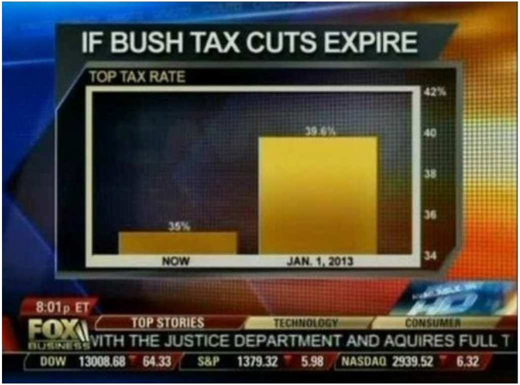
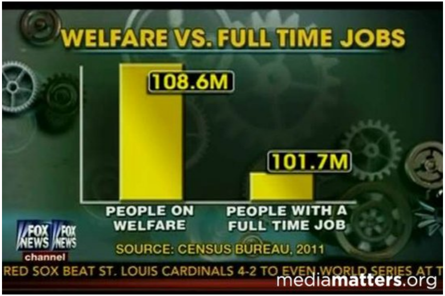


$$\frac{39.6}{35} \approx 1.13$$

About a 13% increase.

Bar Graphs: Misleading Baseline

Are there four times as many people on welfare as working full time?



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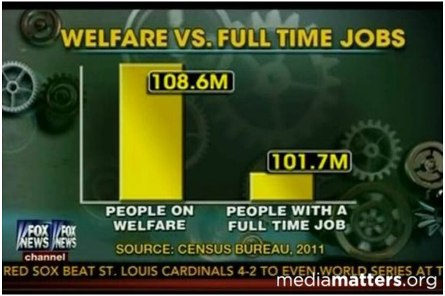
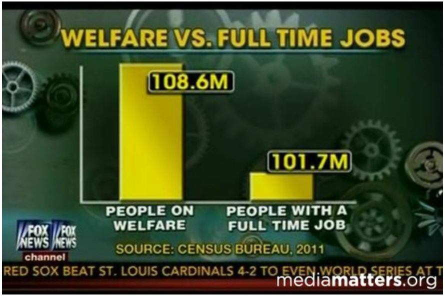


$$108.6/101.7 \approx 1.067, \quad \text{a } 6.7\% \text{ increase.}$$

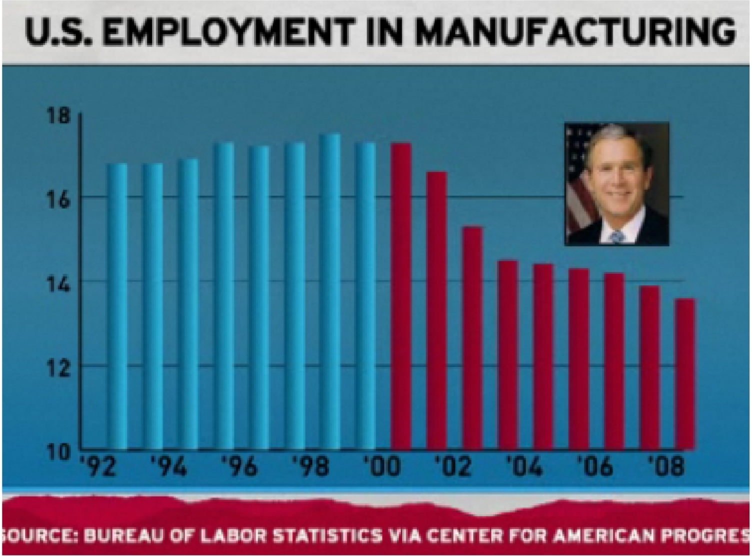
Bar Graphs: Misleading Baseline

Are there four times as many people on welfare as working full time?



Also, these populations are not mutually exclusive: A full-time, minimum wage worker ($7.25) can make as little as $15,080 per year, and the poverty threshold in 2014 (which determines eligibility for social services) was $23,850.

More Misleading Baselines



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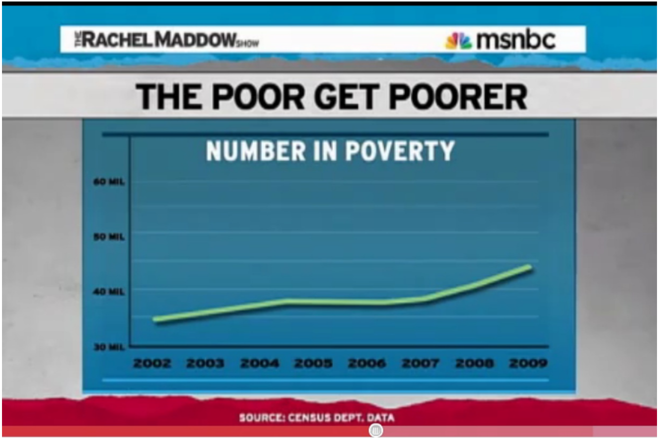

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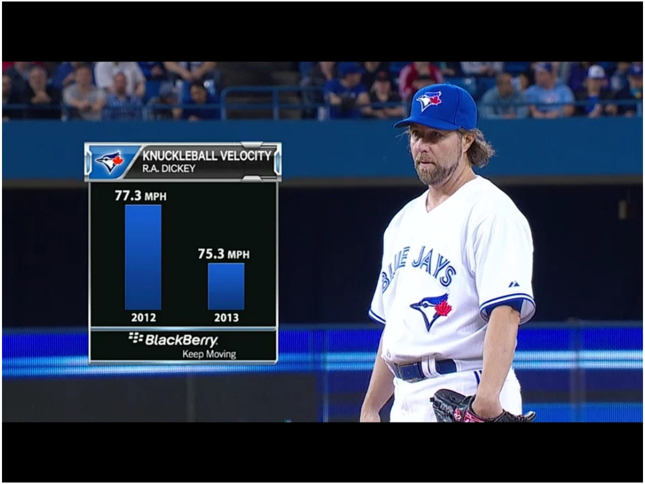

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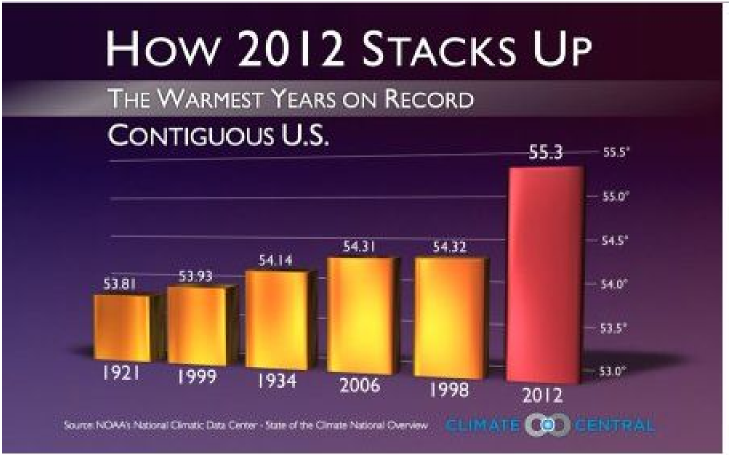
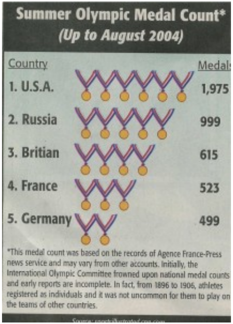


Source: NOAA's National Climatic Data Center - State of the Climate National Overview

Pictographs: Inconsistent Proportions

How many medals does each graphic medal represent?



Summer Olympic Medal Count*

(Up to August 2004)

Country	Medals
1. U.S.A.	1,975
2. Russia	999
3. Britian	615
4. France	523
5. Germany	499

*This medal count was based on the records of Agence France-Press news service and may vary from other accounts. Initially, the International Olympic Committee frowned upon national medal counts and early reports are incomplete. In fact, from 1896 to 1906, athletes registered as individuals and it was not uncommon for them to play on the teams of other countries.

Source: sportsillustrated.cnn.com

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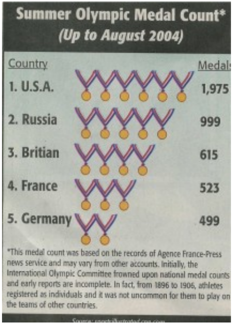

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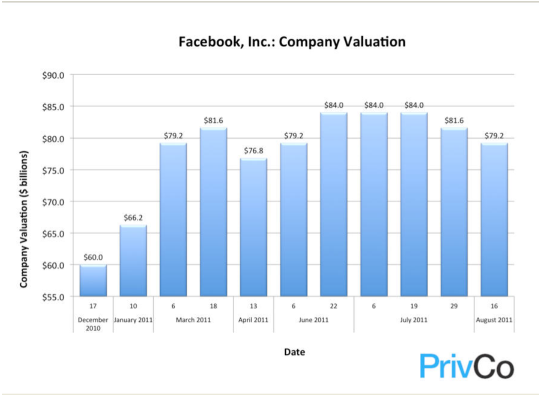
US: 329, Russia: 199, Britain: 153, France: 174, Germany: 249

Inconsistent Scale

How much time passes between consecutive bars?



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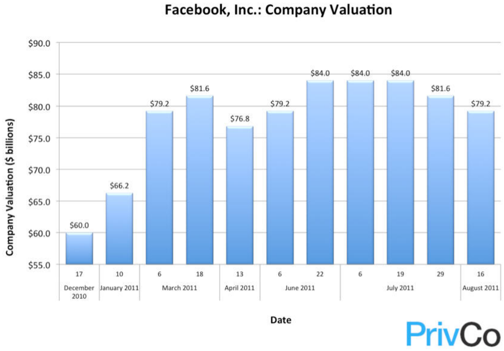
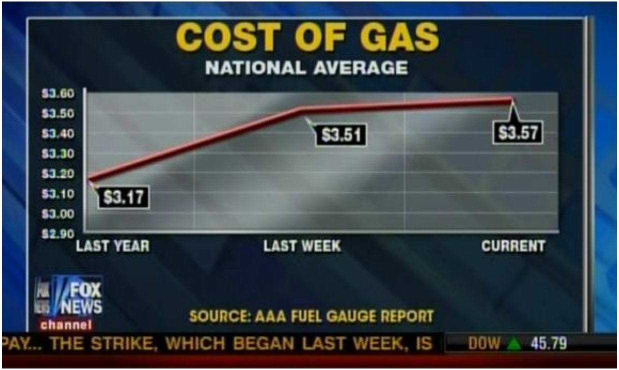
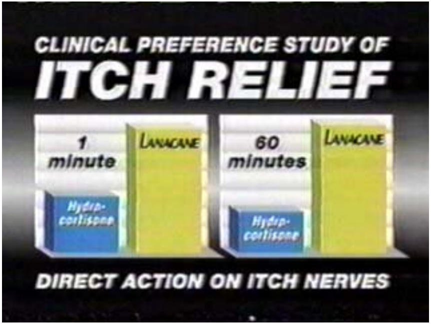


23 days, then 55, 12, 26, 54, 16, 14, 13, 10, 18.
(p.s. check the baseline.)

Inconsistent Scale

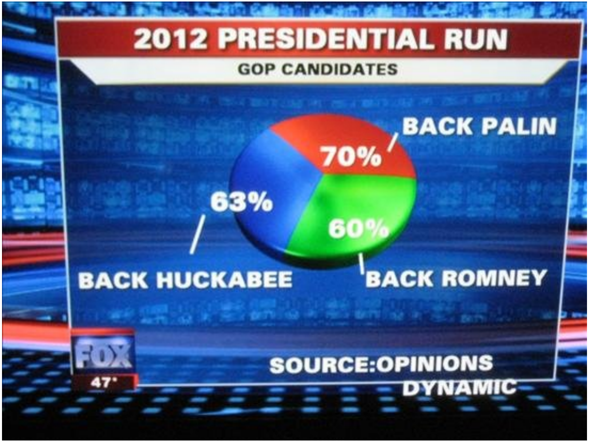


Just Wrong: No Labels

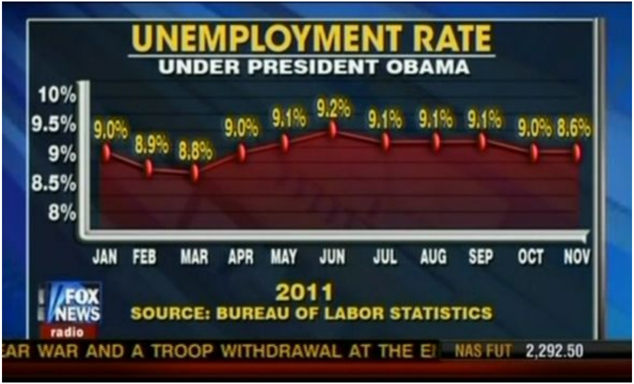


This graph contains no information!

Just Wrong: The Numbers Don't Add Up



Just Wrong: ???


UNEMPLOYMENT RATE
UNDER PRESIDENT OBAMA
10%
9.5%
9%
8.5%
8%
9.0%
8.9%
8.8%
9.0%
9.1%
9.2%
9.1%
9.1%
9.1%
9.0%
8.6%
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
2011
SOURCE: BUREAU OF LABOR STATISTICS
FOX NEWS radio
AR WAR AND A TROOP WITHDRAWAL AT THE E
NAS FUT 2,292.50