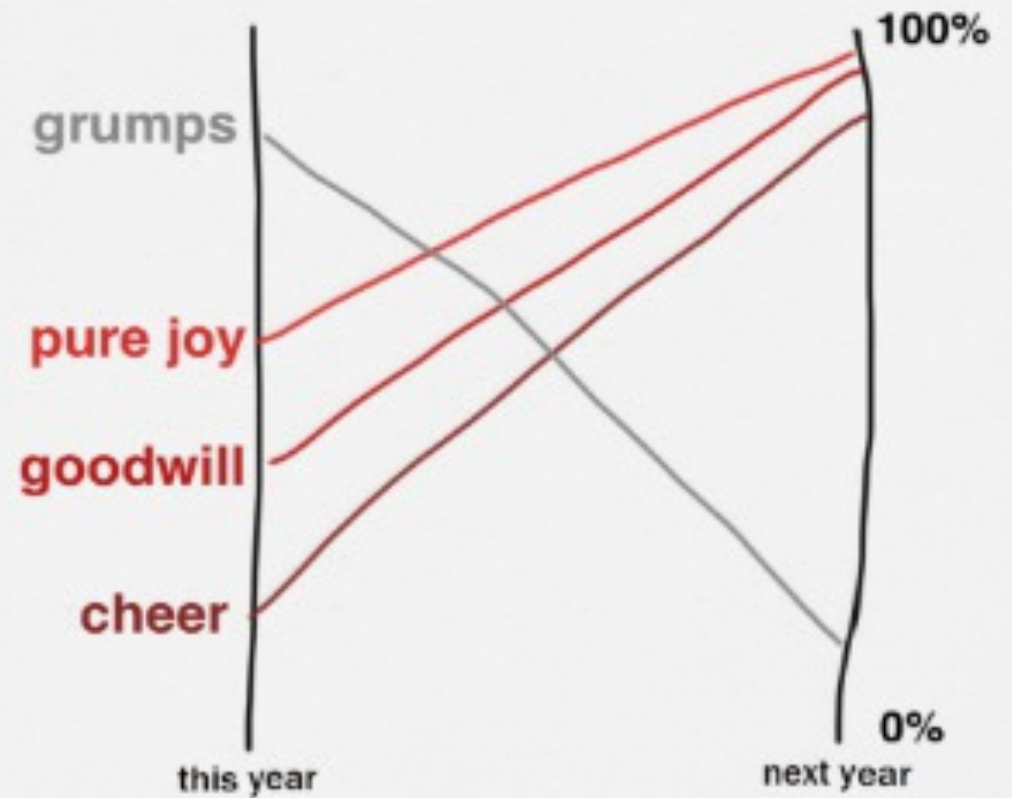


Effective visuals | Alignment, proximity

Telling Stories with Data
November 1, 2017

**May your New Year see
a significant increase in
all the good stuff.**



Plan for today

Visuals and truth

Effective visuals

Alignment

Proximity

Visuals and truth



What gets in the way of truth?

Patterns

Lies and deception

Storytelling and confirmation

Patterns

frontiers in
NEUROSCIENCE

REVIEW ARTICLE
published: 22 August 2014
doi: 10.3389/fnins.2014.00265



Superior pattern processing is the essence of the evolved human brain

Mark P. Mattson^{1,2*}

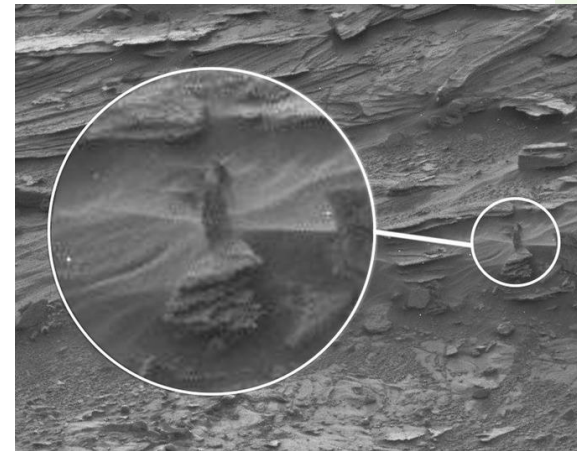
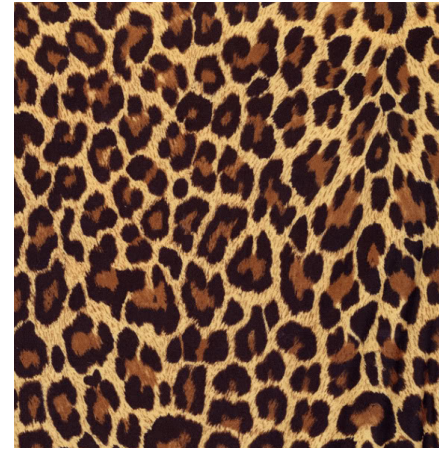
¹ Laboratory of Neurosciences, National Institute on Aging Intramural Research Program, Baltimore, MD, USA

² Department of Neuroscience, Johns Hopkins University School of Medicine, Baltimore, MD, USA

Edited by:

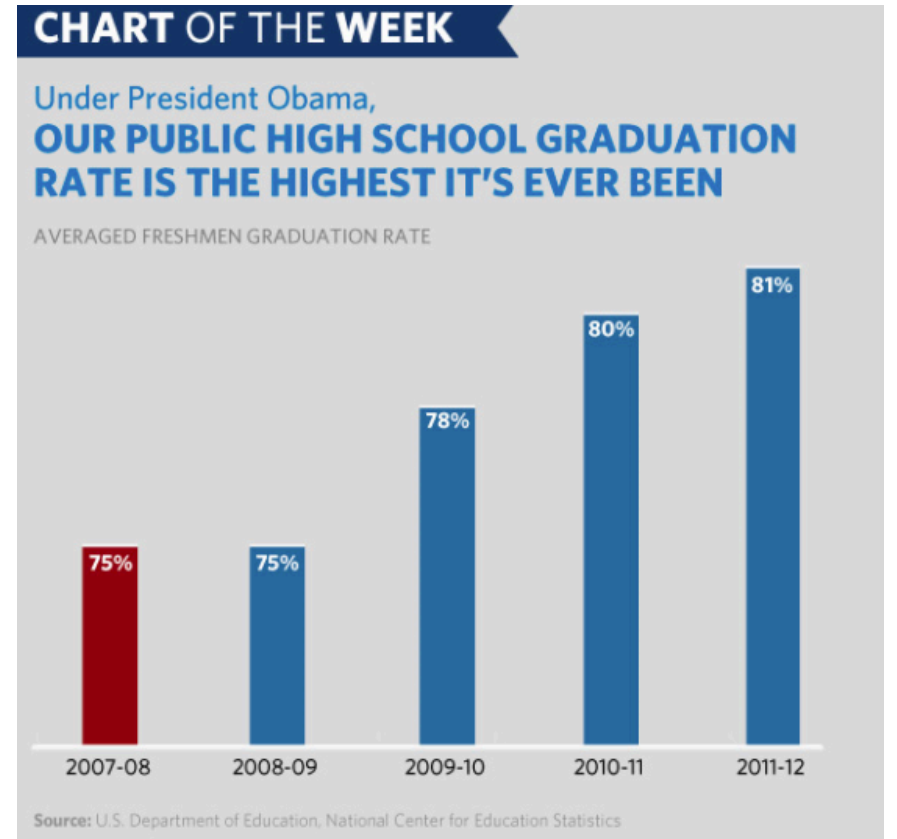
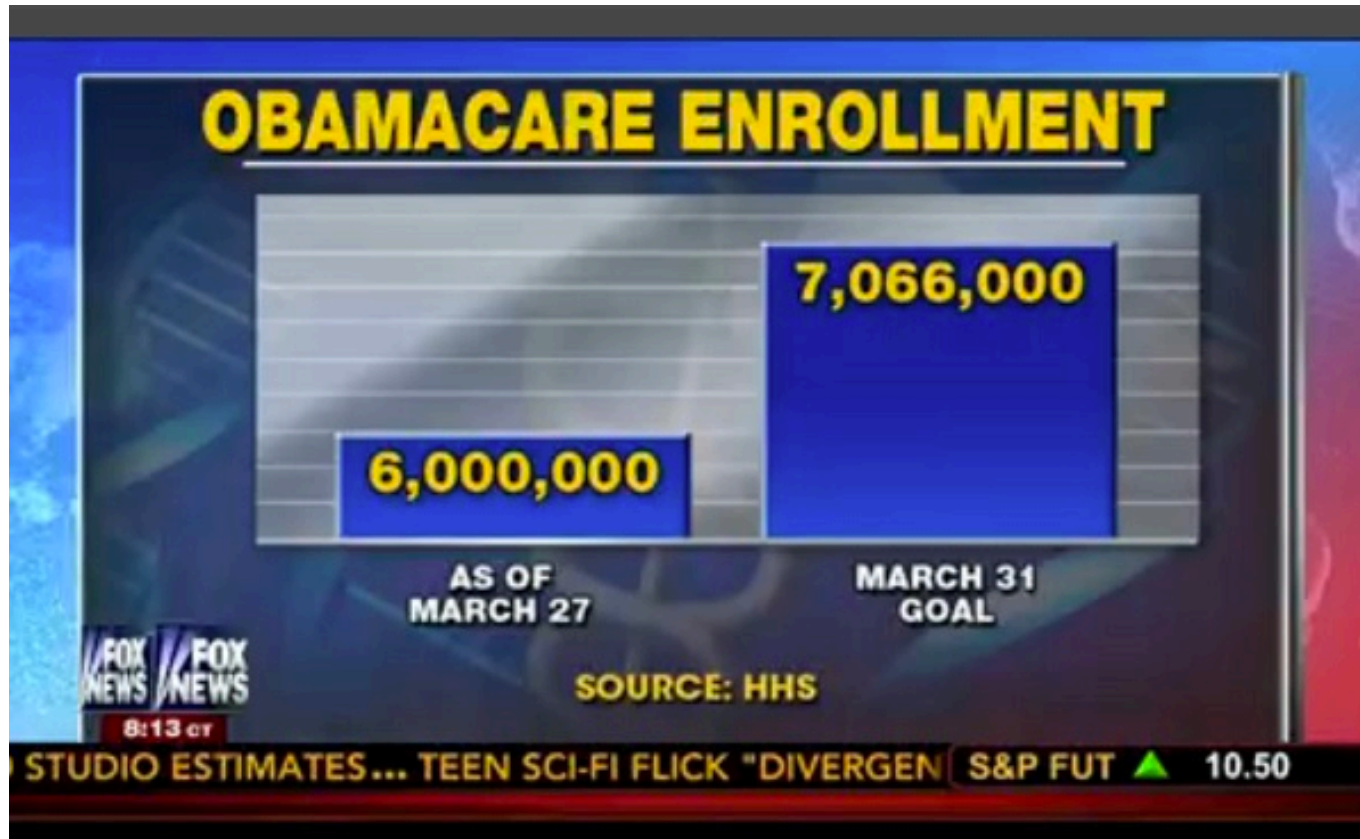
J. Michael Williams, Drexel University, USA

Humans have long pondered the nature of their mind/brain and, particularly why its capacities for reasoning, communication and abstract thought are far superior to other species, including closely related anthropoids. This article considers superior pattern



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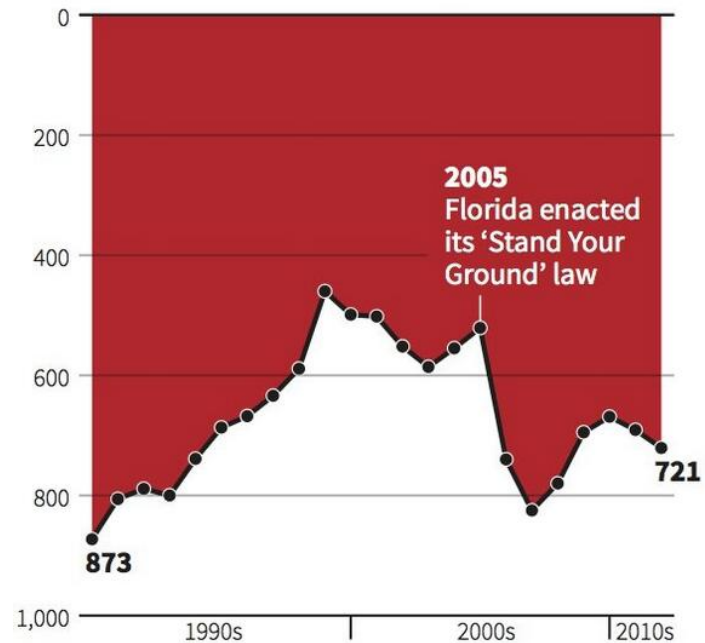
Lies and deception



Lies and deception

Gun deaths in Florida

Number of murders committed using firearms



Source: Florida Department of Law Enforcement

C. Chan 16/02/2014

REUTERS



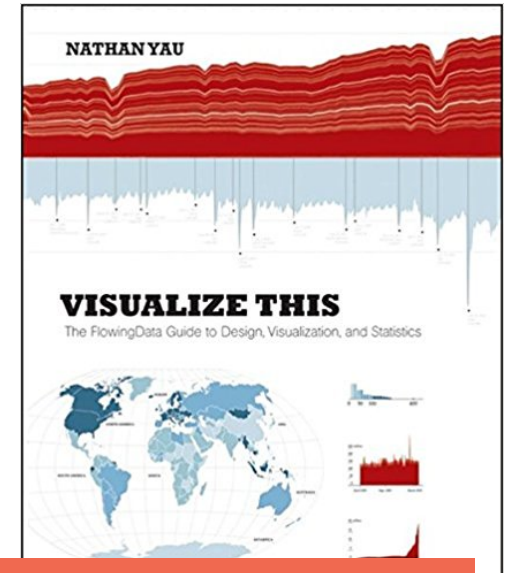
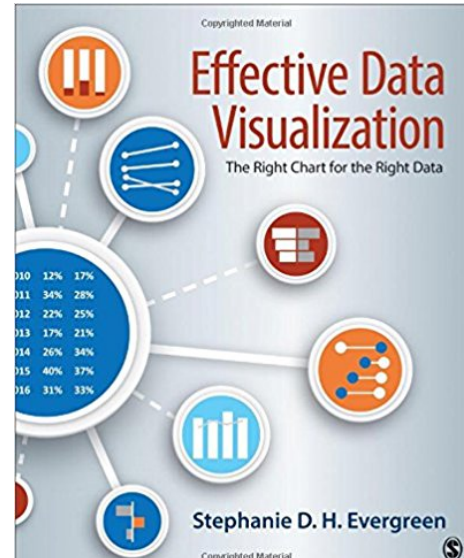
Storytelling and confirmation



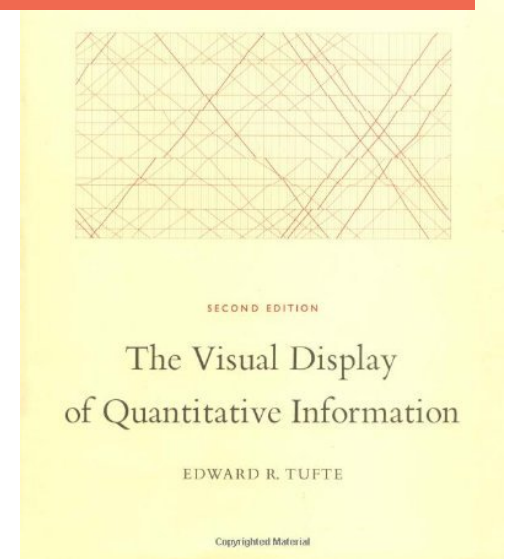
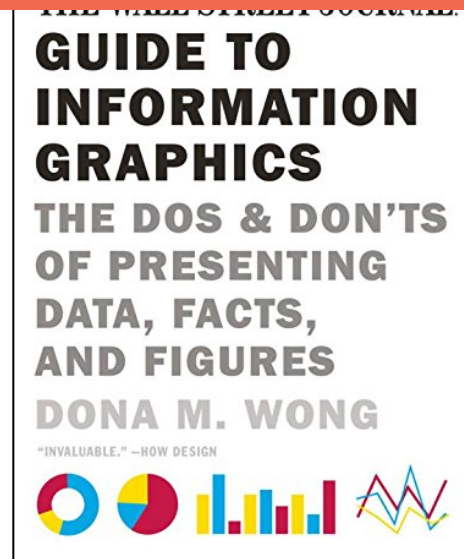
**Rural or
urban?**

Effective visuals

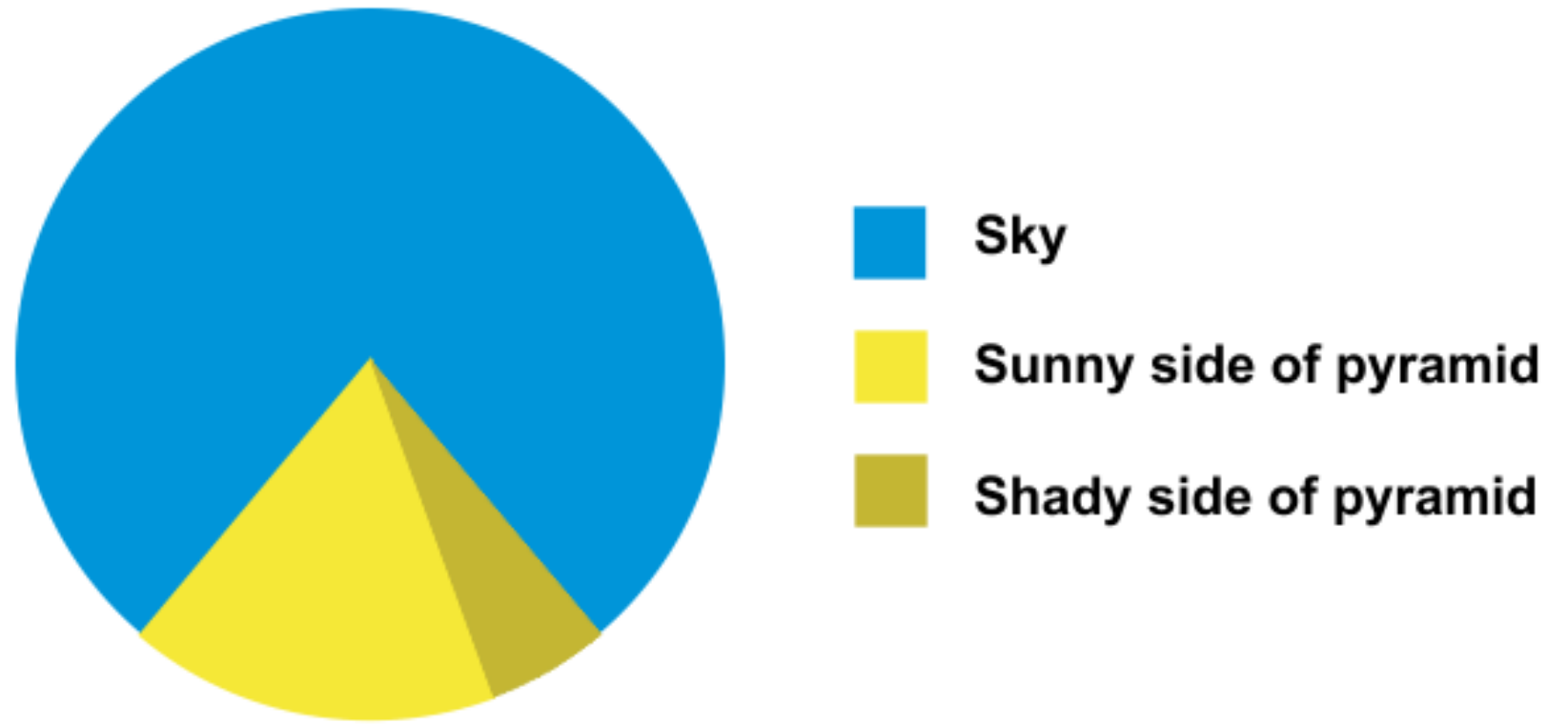
How do avoid hiding or distorting truth with graphs



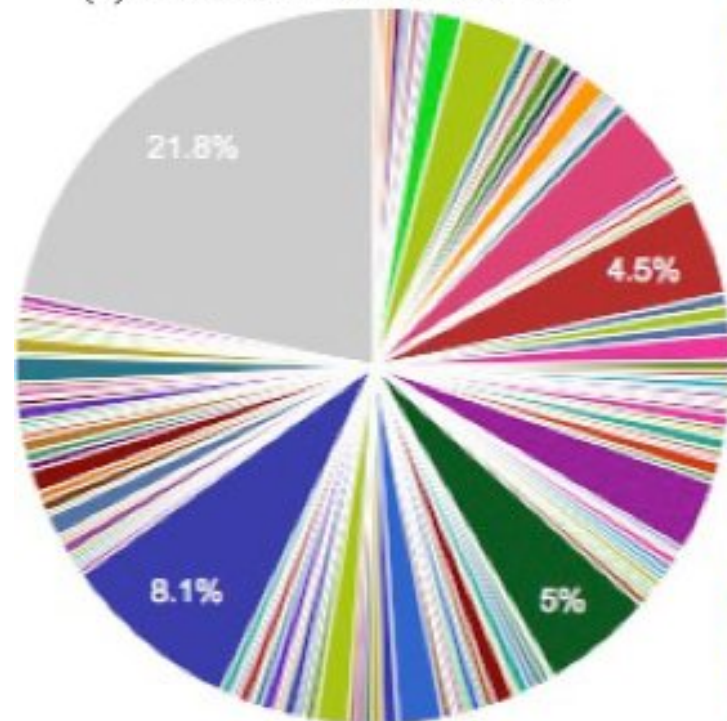
storiesf17.classes.andrewheiss.com/reference/



Pies, waffles, and bars

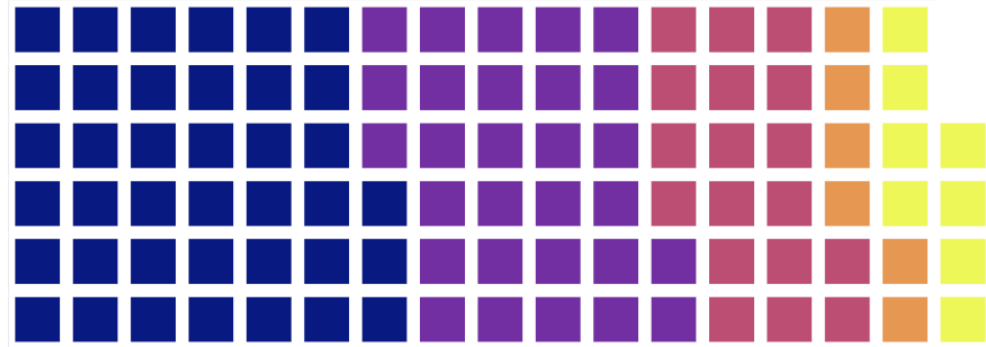
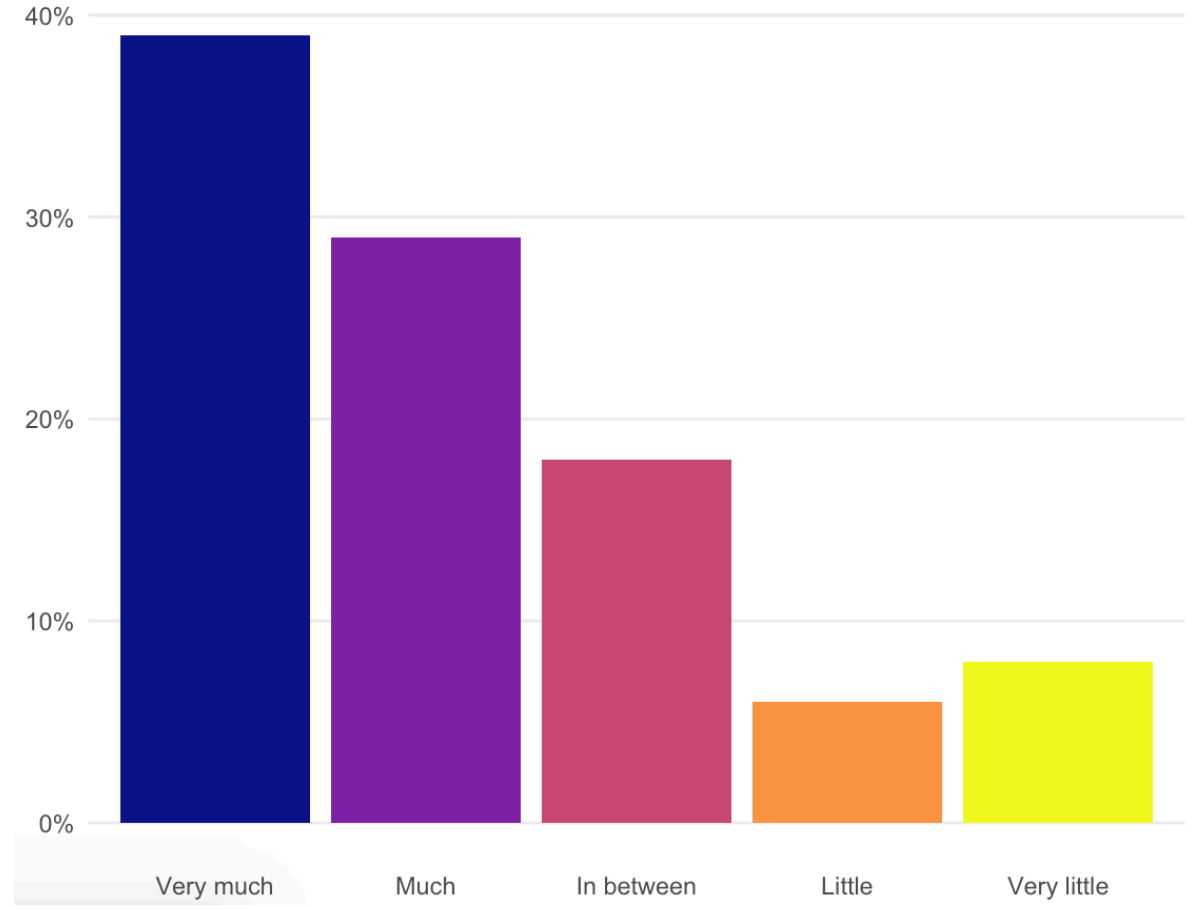
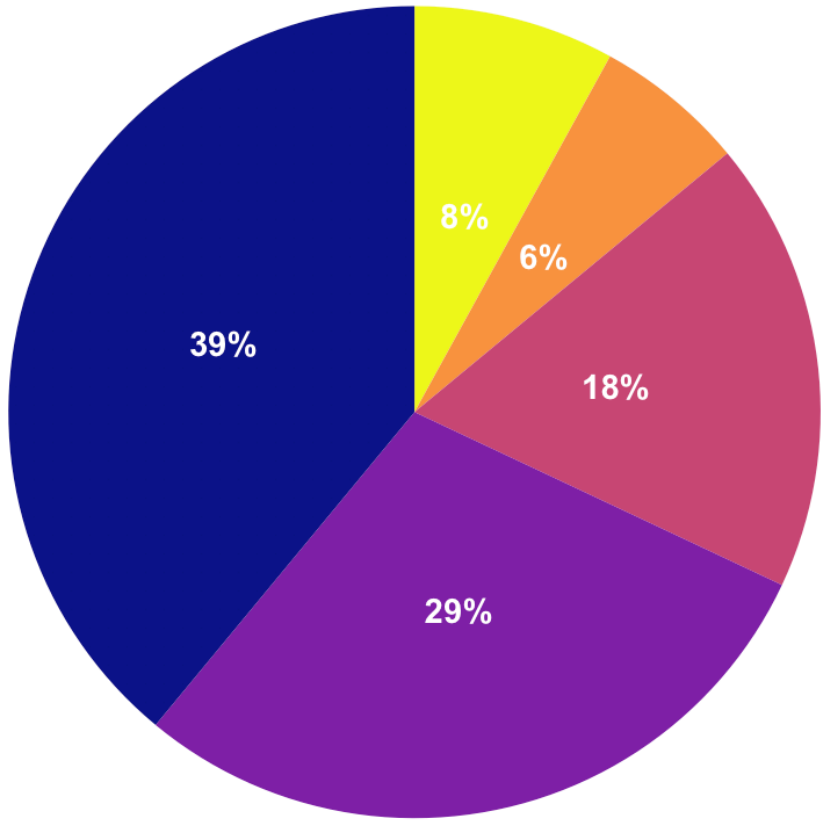


(f) Distribution of Genus



- | | | | |
|-------------------|-------------------------|-------------------|----------------------|
| ● Acaryochloris | ● Aromatoleum | ● Carboxydothermu | ● Desulfarculus |
| ● Achromobacter | ● Arthrospira | ● Caulobacter | ● Desulfatibacillum |
| ● Acidiphilium | ● Azoarcus | ● Chitinophaga | ● Desulfitobacterium |
| ● Acidobacterium | ● Bacillus | ● Chlorobaculum | ● Desulfobacterium |
| ● Acidovorax | ● Bacteroides | ● Chlorobium | ● Desulfococcus |
| ● Acinetobacter | ● Bordetella | ● Chloroflexus | ● Desulfotomaculum |
| ● Albidiferax | ● Bradyrhizobium | ● Chthoniobacter | ● Desulfovibrio |
| ● Algoriphagus | ● Burkholderia | ● Clostridium | ● Desulfuromonas |
| ● Alkalilimnicola | ● Caldanaerobacter | ● Cupriavidus | ● Dictyoglomus |
| ● Allochromatium | ● Caldicellulosiruptor | ● Cyanothece | ● Dyadobacter |
| ● Ammonifex | ● Candidatus Accumulib | ● Cytophaga | ● Flavobacterium |
| ● Anabaena | ● Candidatus Desulforu | ● Dechloromonas | ● Frankia |
| ● Anaerolinea | ● Candidatus Koribacter | ● Dehalococcoides | ● Gemmata |
| ● Anaeromyxobac | ● Candidatus Solibacter | ● Deinococcus | ● Geobacillus |

- | | | | | | |
|--------------------|--------------------|------------------|------------------|-------------------|-----------------------|
| ● Geobacter | ● Methylococcus | ● Nodularia | ● Pseudomonas | ● Sphingomonas | ● Thermodesulfovibrio |
| ● Gloeobacter | ● Methylobacterium | ● Nostoc | ● Ralstonia | ● Spirochaeta | ● Thermomicrobium |
| ● Haliangium | ● Methylobacterium | ● Opitutus | ● Rhizobium | ● Spirosoma | ● Thermosinus |
| ● Heliobacterium | ● Methylobacterium | ● Oscillatoria | ● Rhodopirellula | ● Stigmatella | ● Thermosynechococcus |
| ● Herpetosiphon | ● Microcoleus | ● Oscillochloris | ● Rhodospseudom | ● Streptomyces | ● Thermotoga |
| ● Isosphaera | ● Microcystis | ● Paenibacillus | ● Rhodospirillum | ● Symbiobacterium | ● Thermus |
| ● Ktedonobacter | ● Microscilla | ● Pedobacter | ● Rhodothermus | ● Synechococcus | ● Thioalkalivibrio |
| ● Leadbetterella | ● Moorella | ● Pedosphaera | ● Roseiflexus | ● Synechocystis | ● Thiobacillus |
| ● Leptospira | ● Mycobacterium | ● Pelobacter | ● Roseomonas | ● Syntrophobacter | ● Trichodesmium |
| ● Leptothrix | ● Myxococcus | ● Pelotomaculum | ● Rubrobacter | ● Syntrophus | ● Truepera |
| ● Lyngbya | ● Nitrosococcus | ● Pirellula | ● Shewanella | ● Thermaerobacter | ● Variovorax |
| ● Magnetospirillum | ● Nitrosomonas | ● Planctomyces | ● Sideroxydans | ● Thermicola | ● Vermineobacter |



Is this okay?*

*Graphically and story-wise. The content is clearly horrifying.

Are Journalists Today an Enemy of the American People?

% Say "Yes" Journalists Are an Enemy



All Americans



Democrat

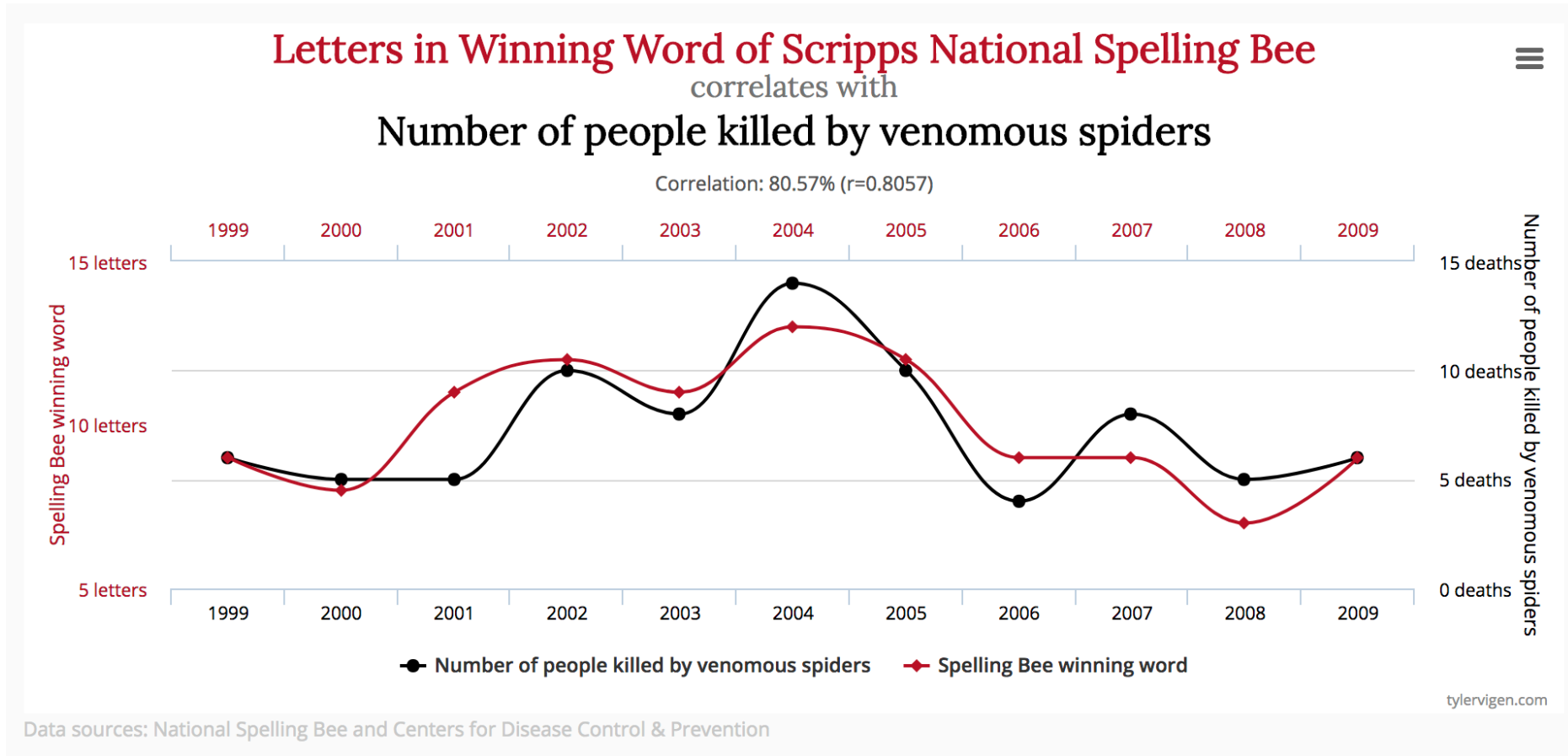


Independent

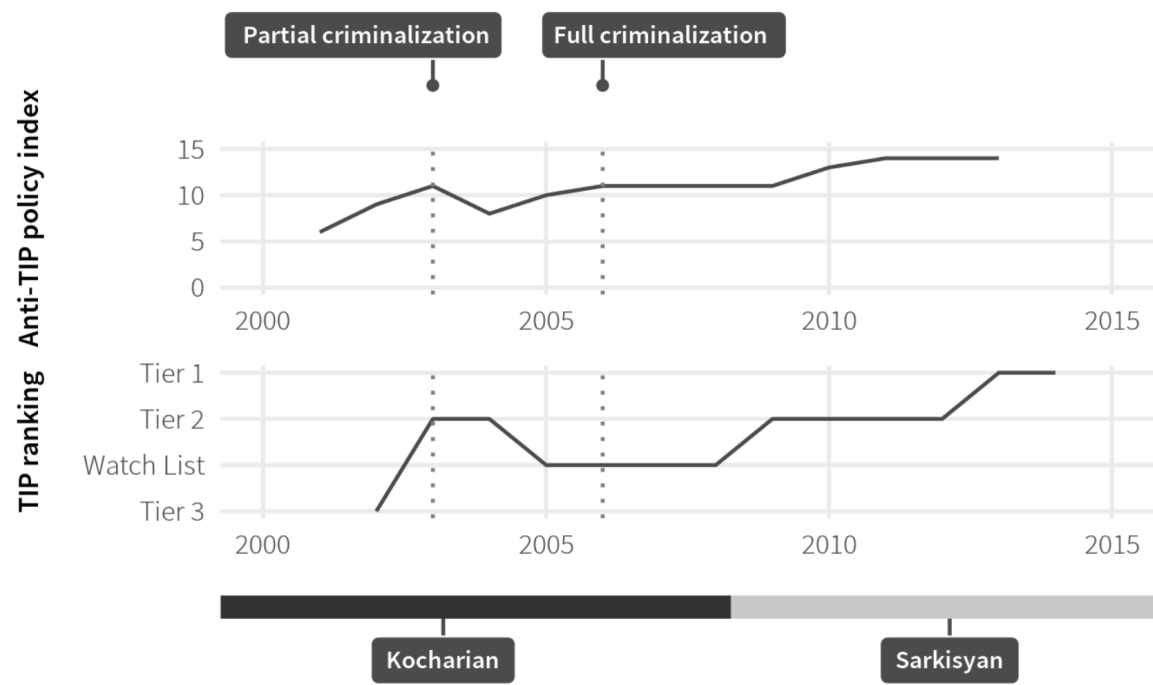
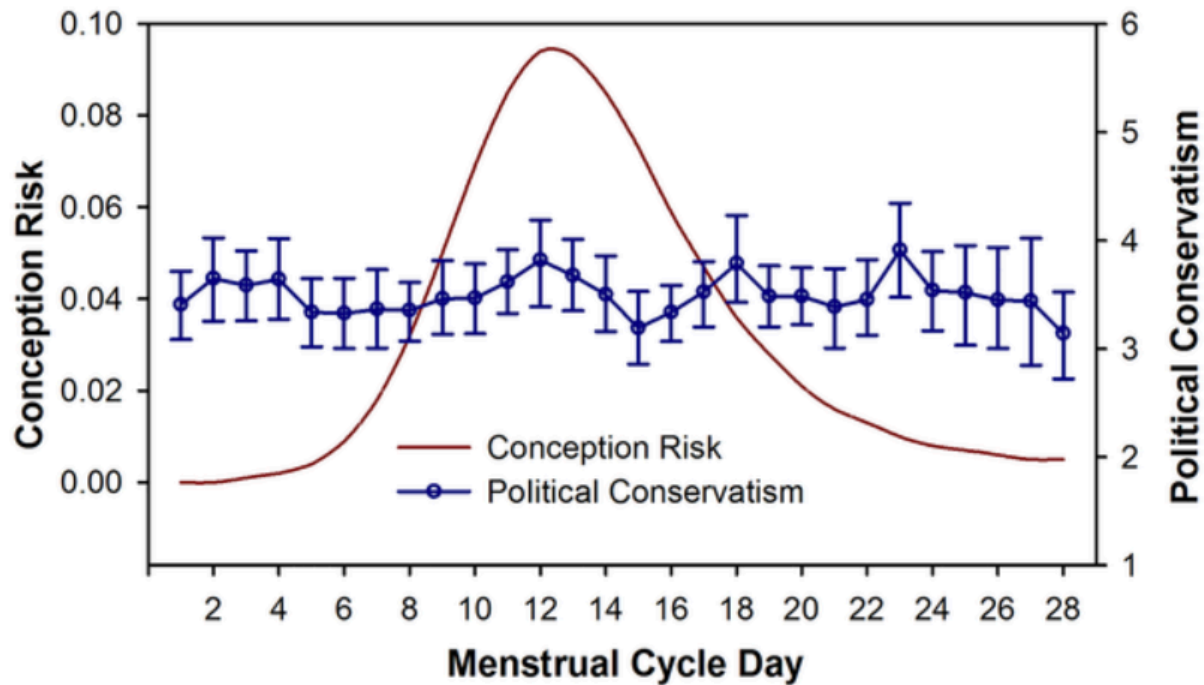


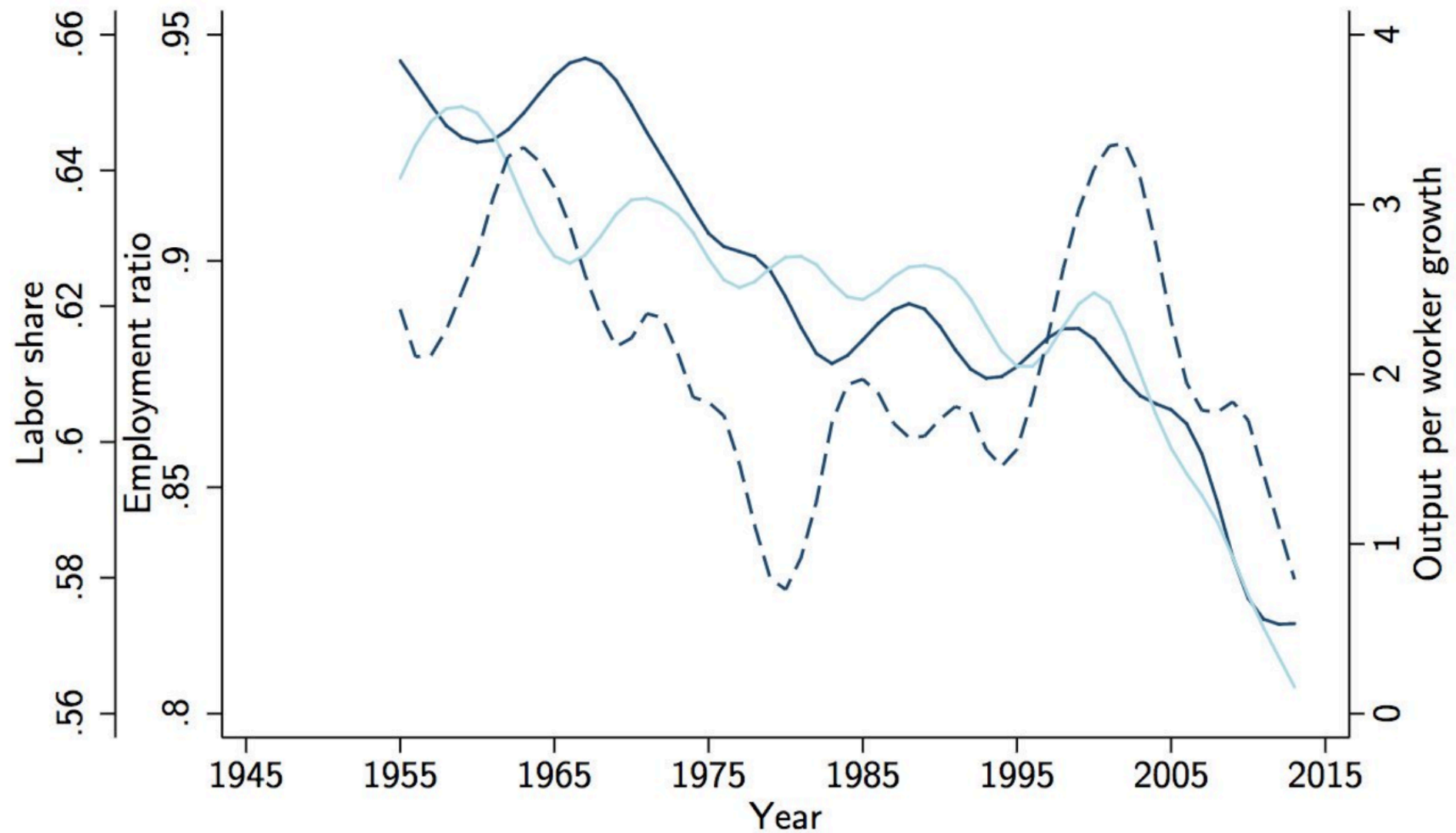
Republican

y-axis issues

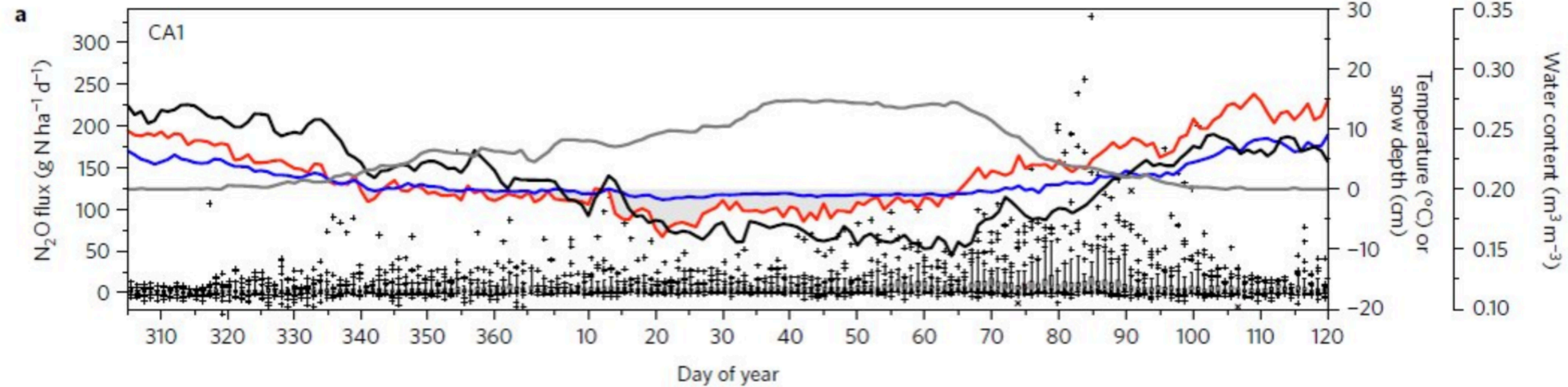


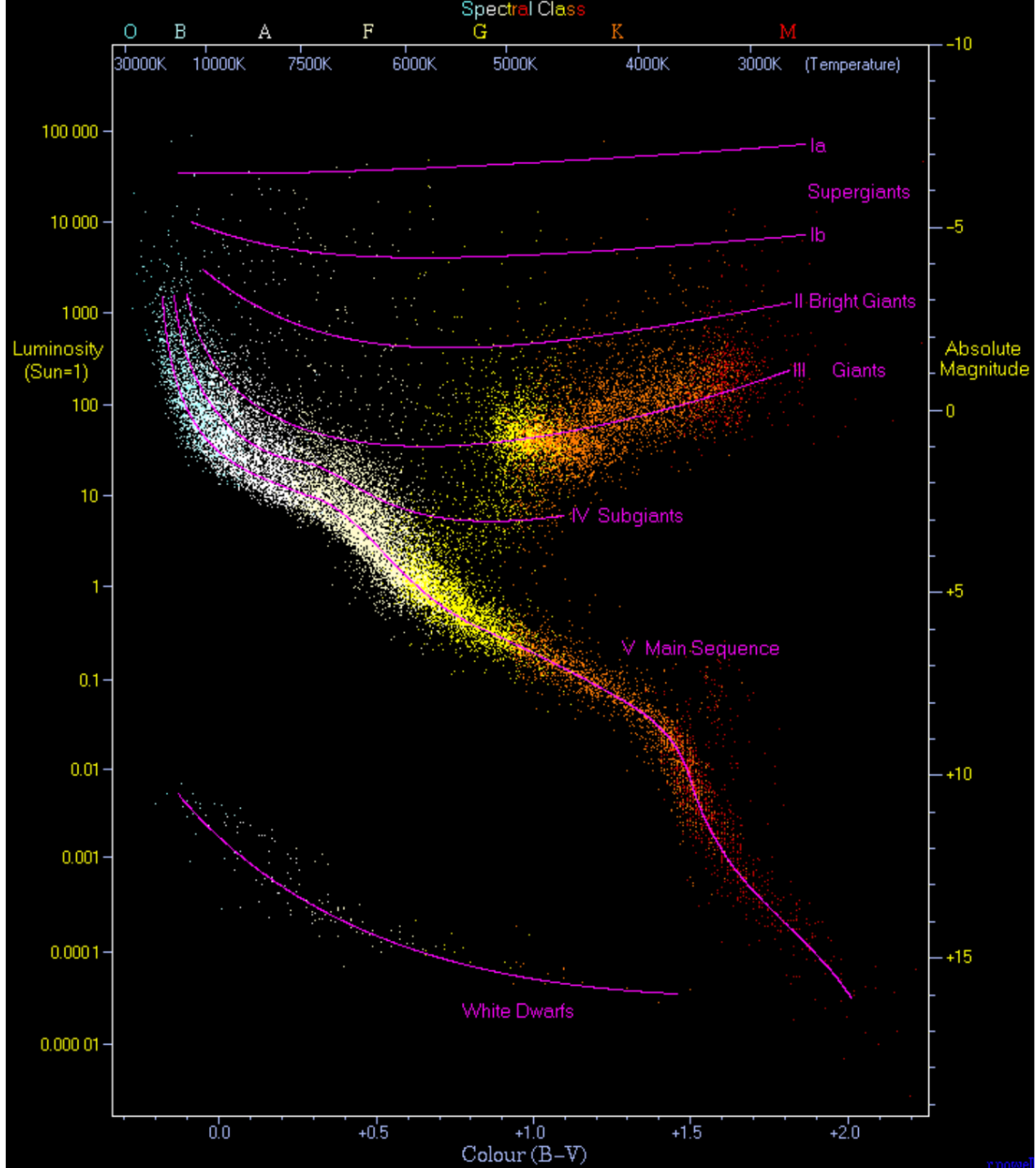
y-axis y-axis madness madness





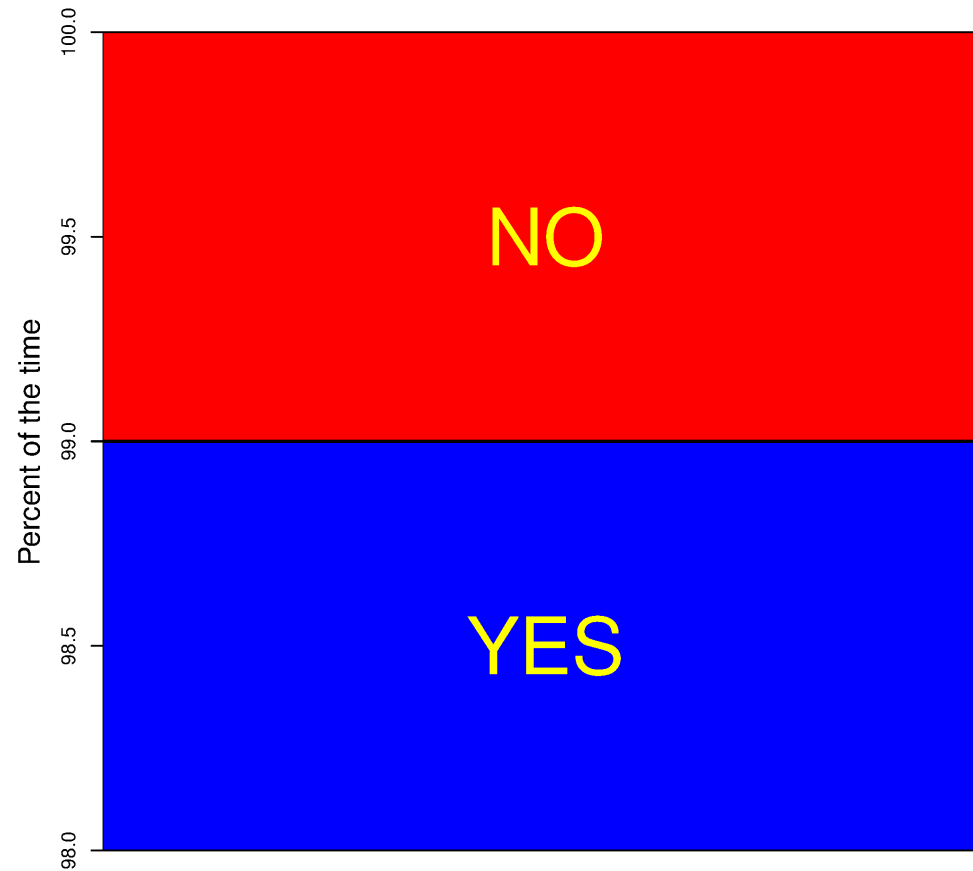
- Employment to population ratio for man, left axis
- Labor share in nonfarm business, left axis
- - - Labor productivity growth in nonfarm business, right axis



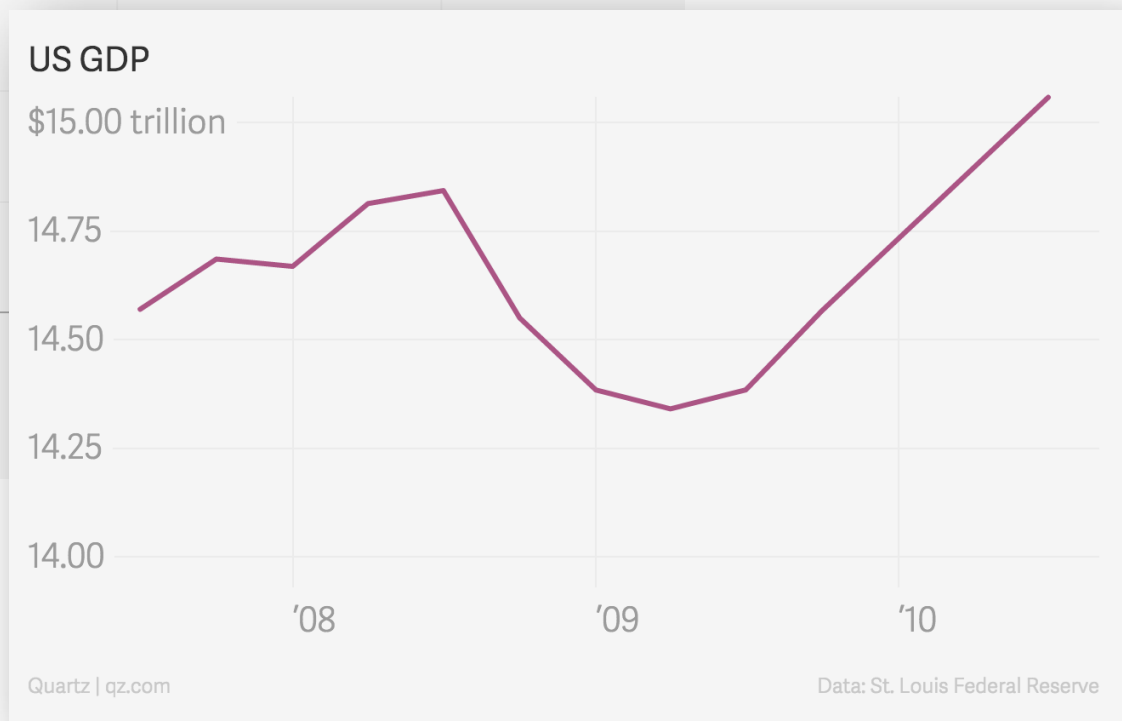
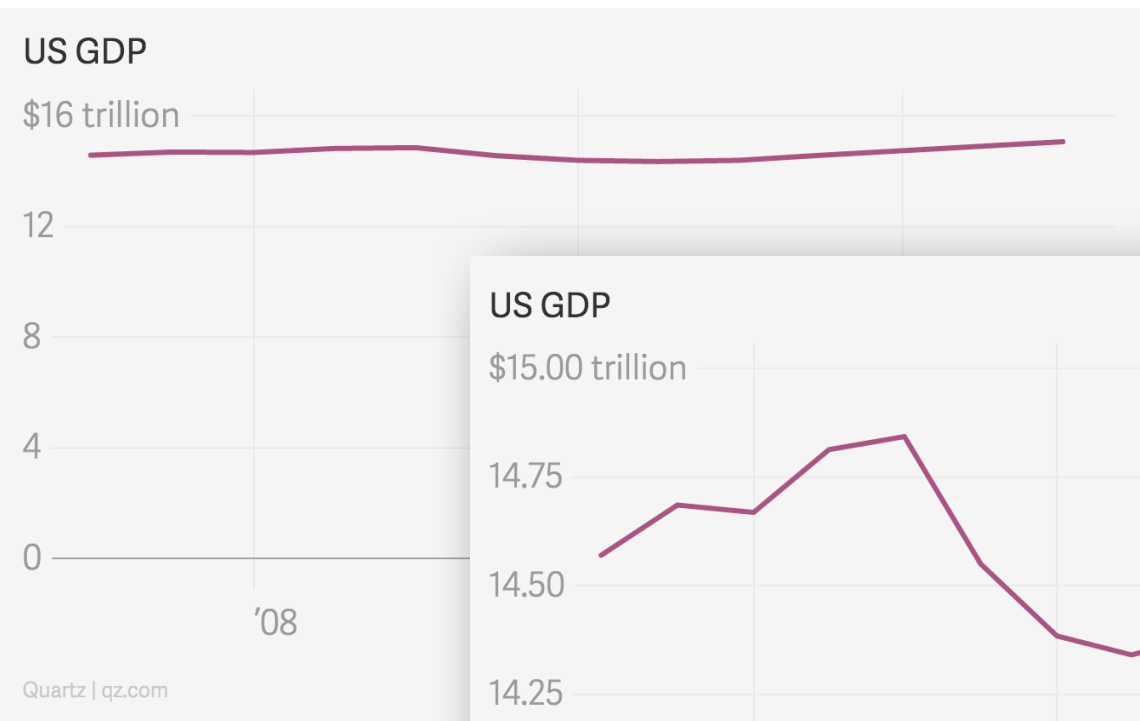


y-ax truncati

Is truncating the Y-axis misleading?



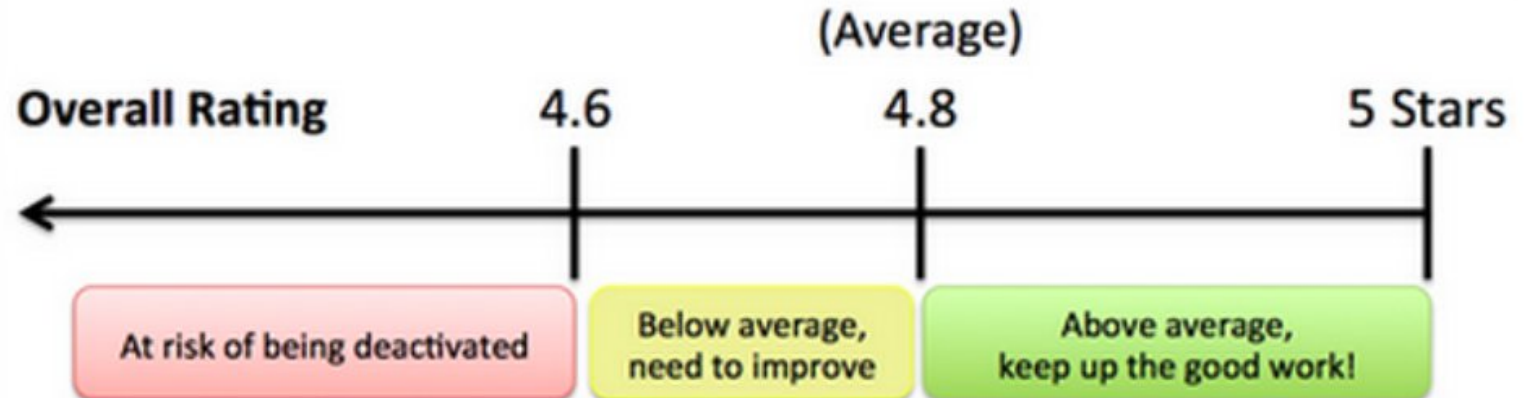
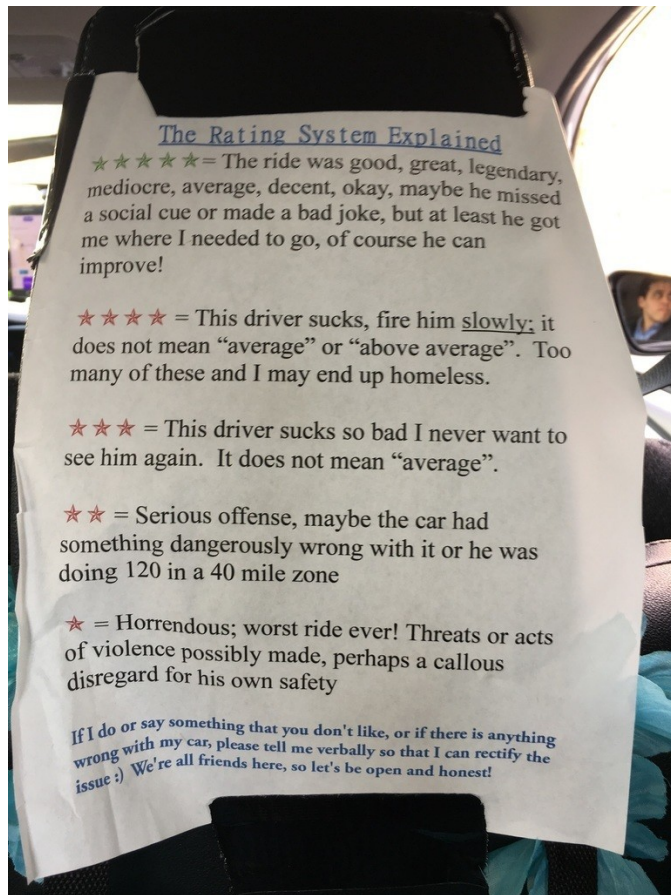
When is it okay to truncate the y-axis?



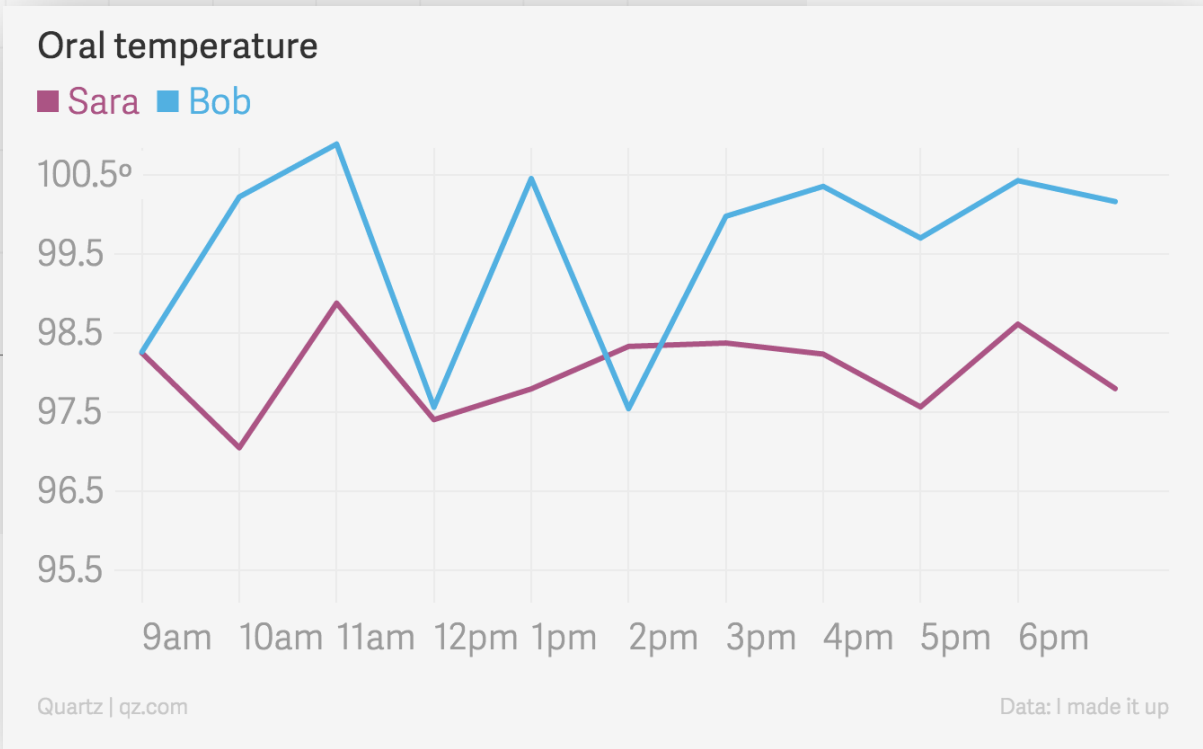
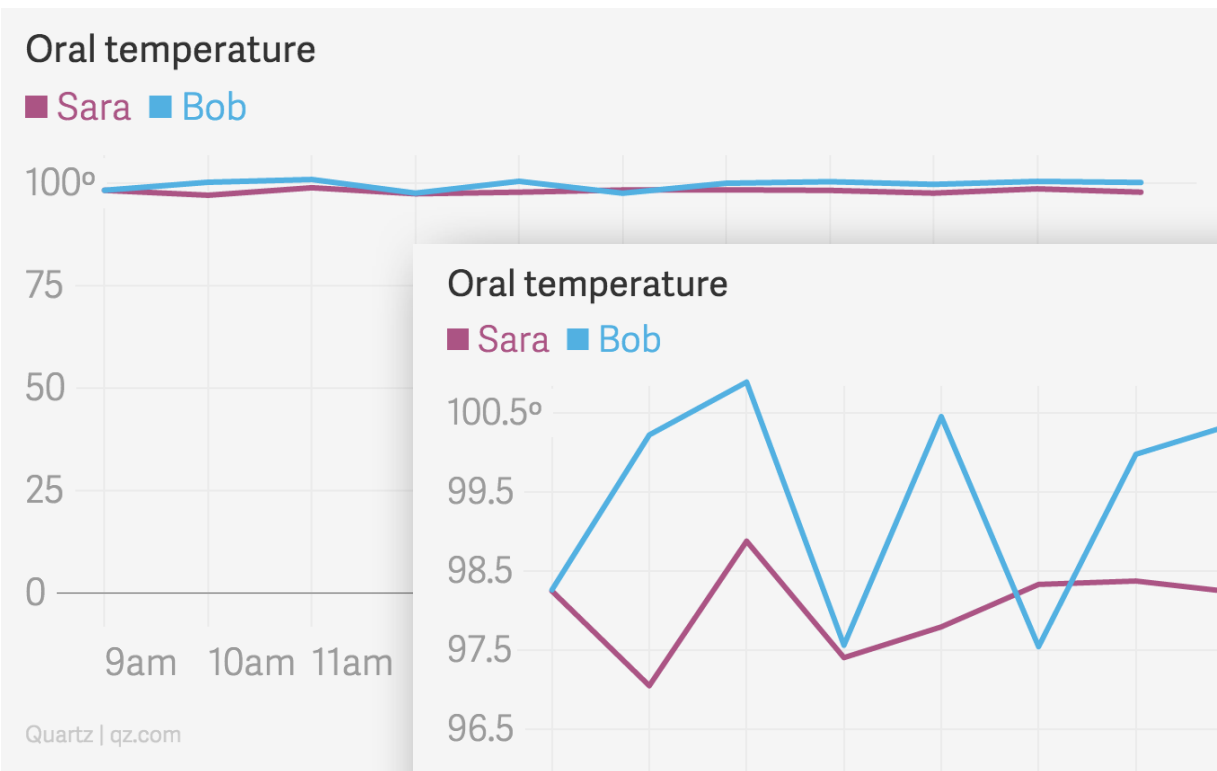
When small movements matter

When is it okay to truncate the y-axis?

When small movements matter



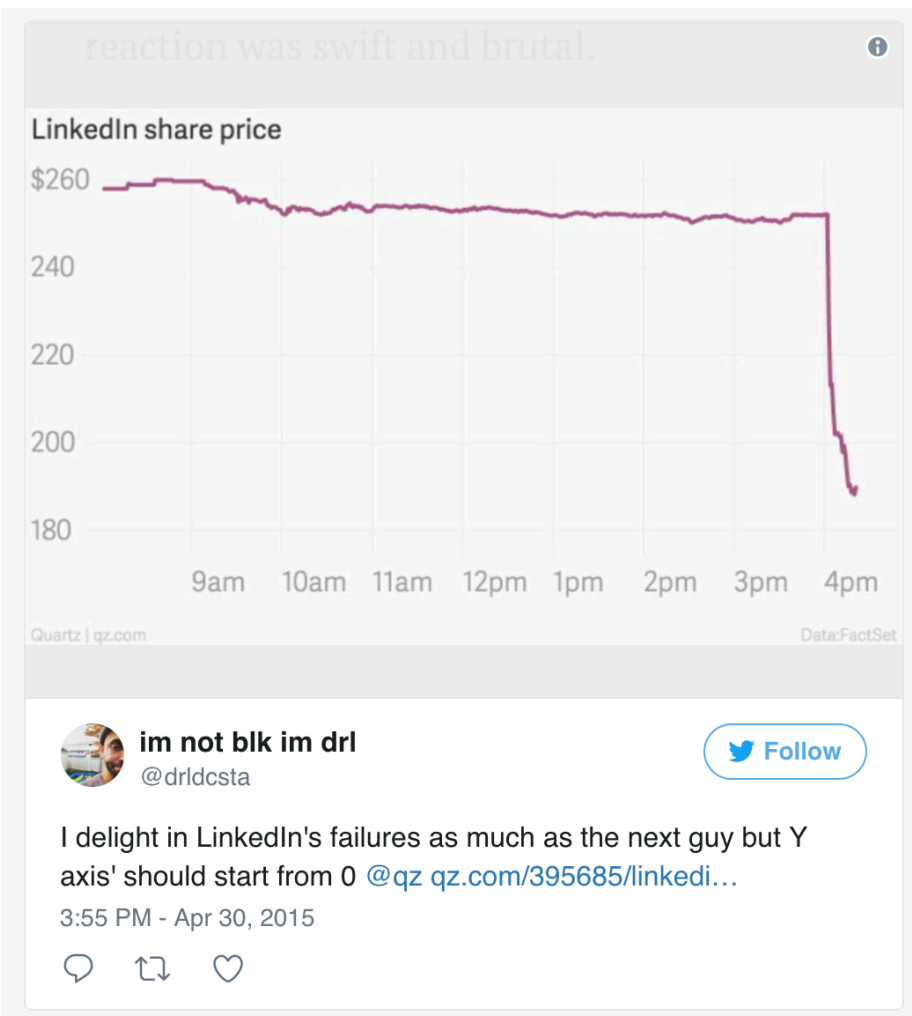
When is it okay to truncate the y-axis?



When small movements matter

When zero values are impossible

When is it okay to truncate the y-axis?

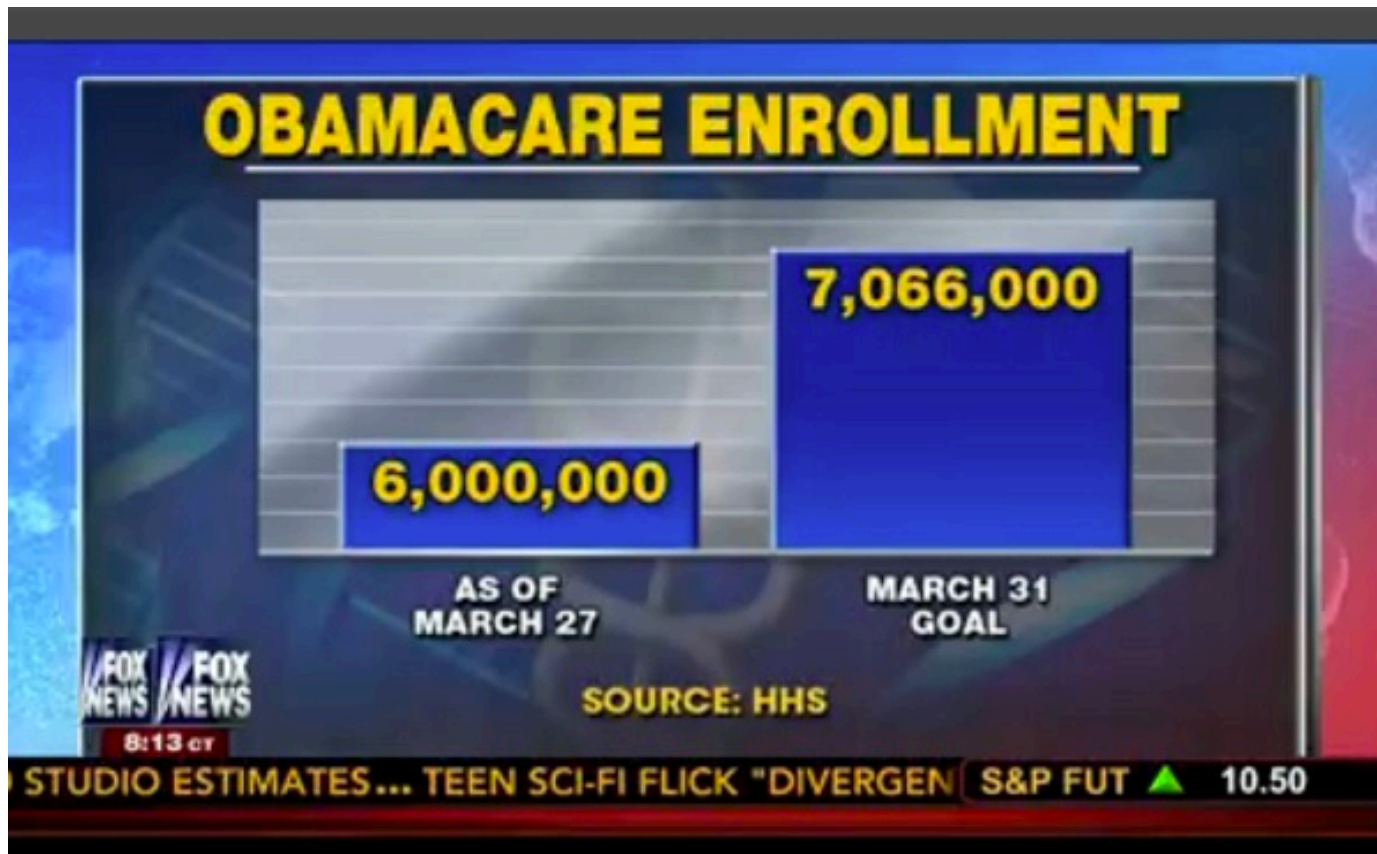


When small movements matter

When zero values are impossible

When it's normal

When is it okay to truncate the y-axis?



When small movements matter

When zero values are impossible

When it's normal

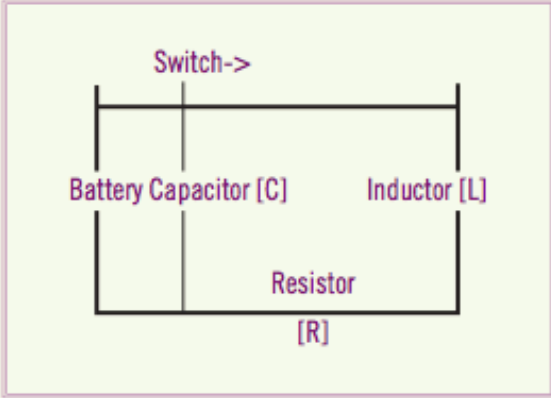
Never on bar charts

Alignment

“Every item should have a visual connection with something else on the page.”

Example 6: Value of a resistor in an electrical circuit.

Find the value of a resistor in an electrical circuit which will dissipate the charge to 1 percent of its original value within one twentieth of a second after the switch is closed.

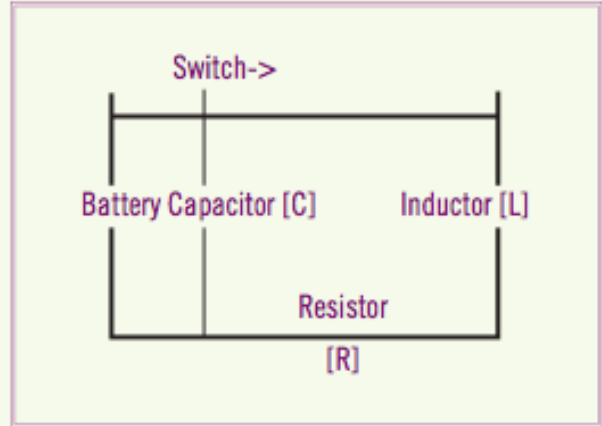


$q_0 = 9$ volts
 $q(t) = 0.09$ volts
 $t = 0.05$ seconds
 $L = 8$ henrys
 $C = 0.0001$ farads
 $R = 300$ ohms
 $q(t) = 0.253889$

$1/[L*C_] = 1250$
 $[R_/(2*L)]^2 = 351.5625$
 $SQRT(B15-B16) = 29.973947$
 $COS(T*B17) = 0.07203653$
 $-R_*T/(2*L) = -0.9375$
 $Q_0+EXP(B19) = 3.52445064$

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Fewer/Less

The Controversy: Some usage dictionaries state that fewer and less can be used synonymously while others say that there is a distinct difference in the usage between the two. Fewer cannot be used in place of less, but can less be used in place of fewer?

The Traditional Rule: Fewer refers to number among things that are counted, or readily distinguishable units (fewer people, ships, houses.) Less refers to quantity or amount among things that are measured (less sugar, time, energy).

History: The rule first originated in 1770 as a rule on less, "this word is commonly used in speaking of a number; where fewer would do better. Essentially less has been used of countables in English just about as long as there has been a written English language. After about 900 years Robert Baker opined that fewer might be more elegant and proper. Almost every usage writer since Baker has followed Baker's lead, and generations of English teachers have swelled the chorus.

"No fewer than a hundred appears to me not only more elegant than no less than a hundred, but strictly more proper." - Baker 1770

Consensus: A substantial majority of panel members advocates retaining this distinction between less and fewer. The general consensus favors the traditional rule that fewer refers to countable things while less refers to things measured, though strong forces are pushing against it.

Examples:

"However fewer and fewer writers observe it, so the distinction is becoming less and less." -Vermont Royster

"...Dudek's car has fewer than 600 miles on the odometer." - Rick Reilly

"...has never gained fewer than 1,222 yards in a season." -Rick Telander

"The odometer showed less than ten thousand miles." - E.L. Doctoerow

"I was never in Europe for less than fourteen months at a time." - James Thurber

not very important history

CONJUNCTIVE ADVERBS

Conjunctive adverbs are adverbs that are used to connect two phrases or clauses. They can be used after a semicolon to connect two independent clauses or after a period to introduce a new sentence.

accordingly	furthermore	moreover
also	hence	nevertheless
anyhow	however	otherwise
anyway (informal)	incidentally	still
besides	indeed	then
consequently	likewise	therefore

The above words become conjunctive adverbs when they join two phrases or clauses together, providing a connection.

ADVERB: Though the danger was great, the policy was *nevertheless* adopted.

CONJUNCTIVE ADVERB: The action proposed by the government meant risking military action; *nevertheless*, public opinion supported it.

Style

- Formal Writing: conjunctive adverbs with three or four syllables are usually used in sentences of length and complexity.
- Informal Writing: shorter adverbs are more appropriate. They are better used as transitional devices between sentences than to connect clauses within a sentence.

Position

- Place the conjunctive adverb according to the word, phrase, or clause you want to emphasize. Place it at the beginning to emphasize what follows; place it in the middle (refer to example below) to emphasize what was previously mentioned.

EXAMPLE: The action proposed by the government meant risking military action; public opinion, however, supported it.

Punctuation

- Whether a conjunctive adverb introduces or comes inside of the second independent clause of a compound sentence, the two independent clauses are separated by a semicolon. In either position, it is sometimes but not always set off by a comma or commas.

Examples (of however)

- Susie is only one of five admitted last night. Two of these, however, are on medical wards.
- The man himself, however, was not greatly put out by the experience.
- (mid-sentence, after a clause) As time passed, however, I slowly began to see the originality of the resistance you offered.
- (at end of sentence) Lanzmann's tone over-generalized, however.

Bibliography

- Burchfield, R. W. *The New Fowler's Modern English Usage*, 2000.
- Ebbitt, Wilma R. and Daved R. Ebbitt. *Index to English*, 1990.
- Garner, Bryan A. *A Dictionary of Modern American Usage*, 1998.
- Webster's Dictionary of English Usage.

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Proximity

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CRAP review

Your Attitude is Your Life

Lessons from
raising three children
as a single mom

Robin Williams

October 9

Your Attitude ▶ is Your Life ▼

Lessons from
raising three children
as a single mom

▲
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Contrast

Repetition

Alignment

Proximity

Practice time!

Let's make pretty stuff