

Just Plain Data Analysis:

Compiling, evaluating, and presenting numerical evidence to support and illustrate arguments about politics and public affairs.

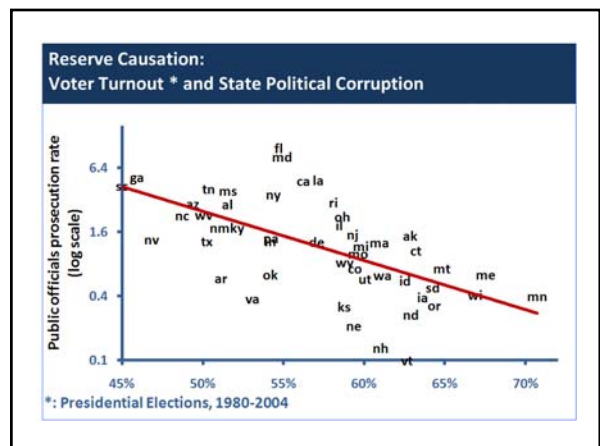
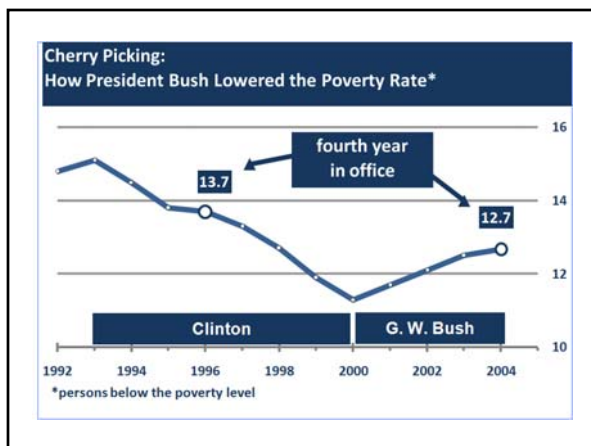
- Numerical evidence: social, political and economic indicators
- Arguments: “informal” arguments consisting of one or more premise and a conclusions.

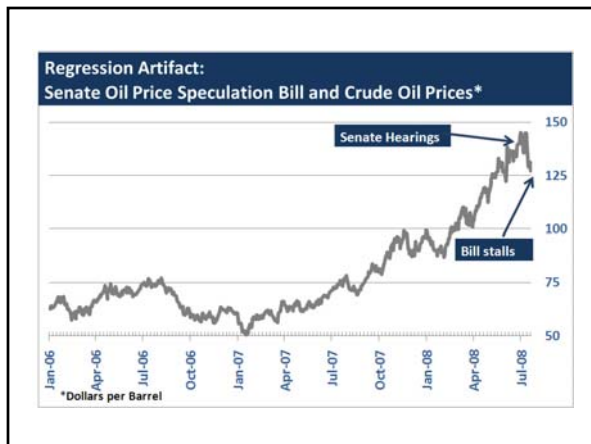
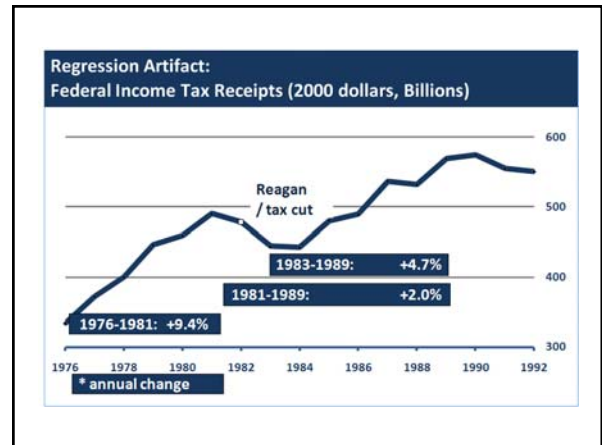
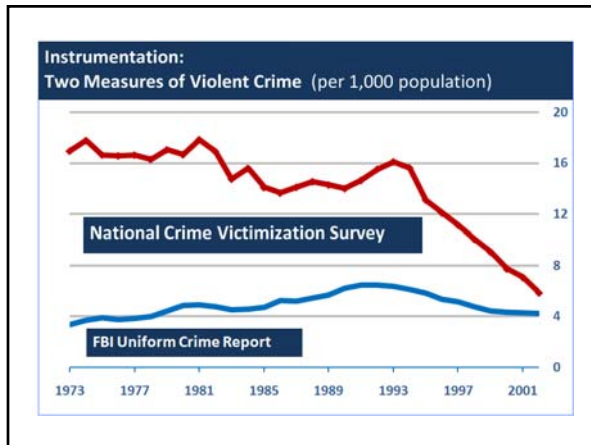
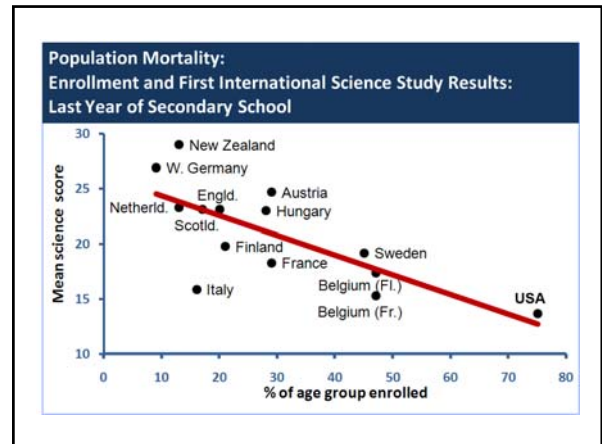
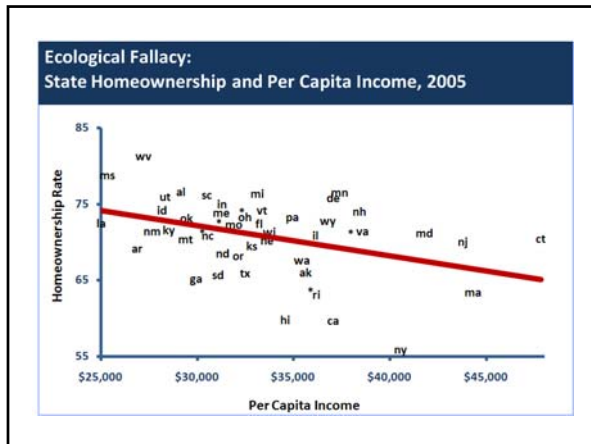
Common Statistical Fallacies in the Interpretation of Social Indicators in Data-based Public Affairs Writing

A Statistical Fallacy:

- **A form of Inductive or Informal Argument Logical Fallacy:**
 - When premises do not provide enough support for an argument’s conclusions.
 - Premises consist of time series, cross sectional and demographic numerical comparisons.

▪ Note: Traditional hypothesis-testing research methods design defines a “deductive” argument structure, but only to establish a very limited conclusion.

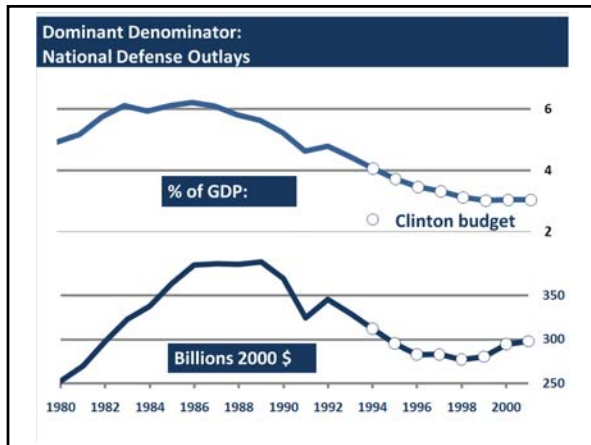
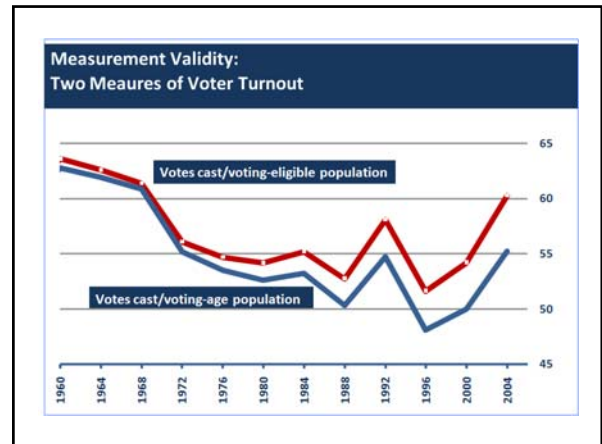
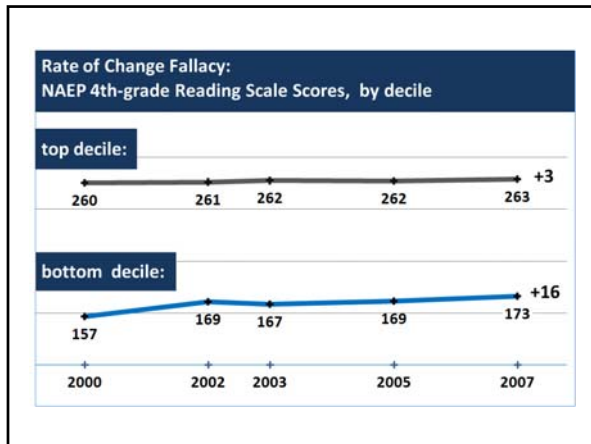




Rate of Change Fallacy: 2005-6 Chicago and Illinois ISAT Results: Grades 3-8

	2005	2006	Net Change	% Change
Passing rate				
Chicago Public Schools	48%	62%	+14	+29%
All Illinois Public Schools	69	77	+8	+12
Failure rate				
Chicago Public Schools	62	48	-14	-27
All Illinois Public Schools	31	23	-8	-26

Source: Illinois State Board of Education, 2005-6 Report Card Data

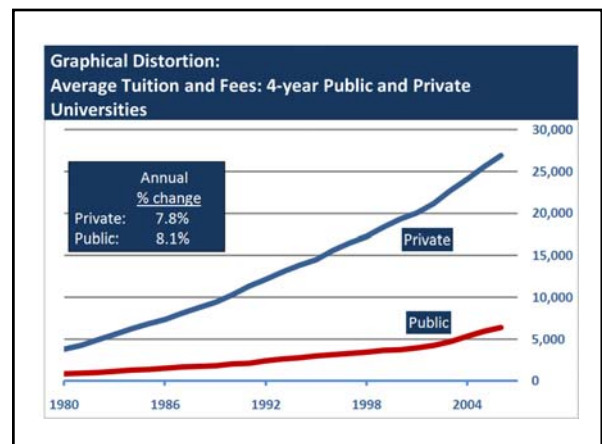
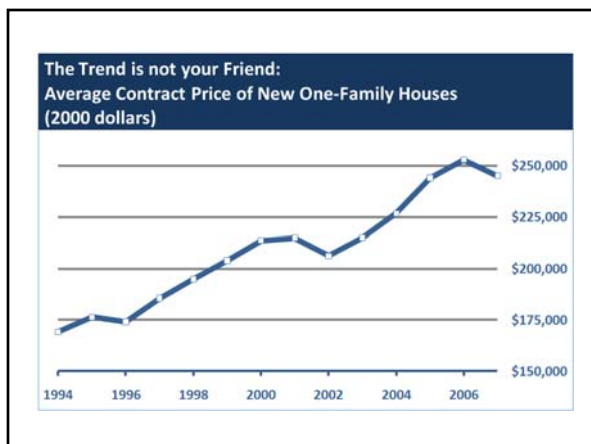


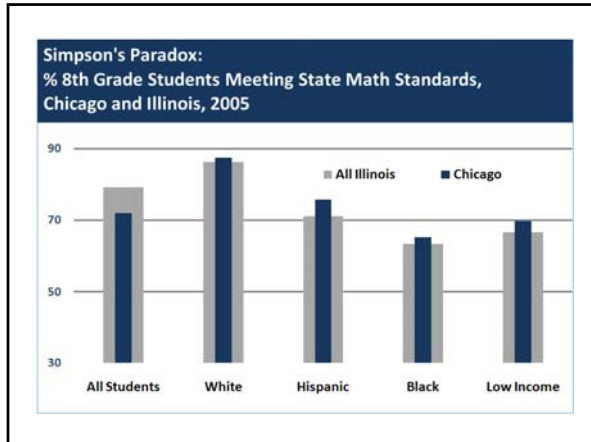
Other Denominator Misinterpretations

- CPI adjustments for inflation overestimate inflation by %1 per year.

Effect::

 - Underestimates of income and price growth
 - Overestimates of poverty rates
- "Percentage of median family income," minimizes price increases, most commonly:
 - University tuition and fees as a percentage of median family income.





Other Fallacies (that I can't represent graphically)
 --Small Donor Fallacy

"Obama has raised record-breaking sums from small donors,"
 - "The Small Donor Fallacy," by Jay Mandel (Washington Post 6/20/2008)

"If someone gave several small donations, would it be counted as one large donation?"
 - Gary Klass, email 6/20/2008

"We don't know. My suspicion is that each small donation is counted separately, but that is only a suspicion."
 -Jay Mandel, email 6/20/2008

Other Fallacies (that I can't represent graphically)
 --Howard Wainer's Demoire's Paradox

Examples:

Of the communities with the highest rates of casualties in the Iraq War, most are very small rural towns. This demonstrates the patriotism of rural communities.

Of the schools with the highest scores on national math and science tests, those with the highest scores are mostly small schools.

Towns with the highest ratios of men to women (and women to men) are all small towns.

The Worst Statistical Fallacy:

"You can prove anything with statistics."