

Statistical Deception – Part 2

We have already looked at many ways people lie with statistics:

- Bad graphs
- Non-representative samples
- Generalizing to the wrong population
- Comparing apples and oranges
- Survey bias—NOYB
- Placebo effect
- Biased sources
- Misuse of the word significant
- Discounting results as “just statistics”

Other issues can come up in interpreting and publicizing statistical results:

1. Convenient averages
 - Choosing the average that makes you look the best (or your opponent look the worst), even if it's not really a “typical” average
 - ...Is the number they give really “average”?
2. Assuming everybody is average (or close to it)
 - ...How spread out are things?
3. Not adjusting for different sample sizes
 - Comparing raw numbers instead of percentages
4. Not adjusting money amounts for inflation
5. Screwing up the math
6. Extrapolating from a partial result.
7. Assuming cause and effect
 - Remember: correlation just means “relationship”
 - A confounding variable may be skewing the results.
8. Ignoring Occam's Razor
 - complex or unbelievable explanations
 - Occam's Razor says the simplest explanation is generally the best.
 - Always consider the simplest explanation first.
9. Using a non-standard significance level
 - deciding after the fact on a level that guarantees significance