

Facts Don't Speak For Themselves



Misusing Data and Forecasts Inadvertently – or Deliberately

During our winter, spring and summer of discontent, we have been exhorted constantly by medical experts, organizations and elected officials to practice social distancing and endure shutdowns to help bend the curve and prevent second waves of this pandemic. However, these models and data-driven “studies” have, for the most part, proven to be more fiction than science with their gross over-estimates of deaths and probabilities; they have also been heavily laden along the political and media spectrum with built-in biases and preferences.

As we transition into the fall and move toward November 3, we will now be “swamped” with political spots that deploy overworked expressions to convince us for whom or what to vote: the American People, Reform, Let’s be Clear, Fair, Middle Class, Corporations, Free. Concurrently, daily newspaper copy and television ads will employ their favorite tropes: Amazing, Limited-Time Offer, Last Chance, Act Now, Satisfaction Guaranteed, Free.

Apart from these purely political or commercial messages, organizations, newspapers, and television patter frequently rely on seemingly straight-forward, objective facts as part of their pitches, and these often include biases, faulty reasoning, and deceptive use of data that should be equally objectionable, but many times go undetected. A few to “chew” on:

BY ALLEN R. SANDERSON

A well-known gum manufacturer claims that “four out of five dentists surveyed recommend sugarless gum for their patients who chew gum.” Somewhat implied is that dentists are big fans of gum, when in fact if you asked on your next office visit if you should chew gum, that answer is likely to be a firm ‘No!’ It’s only when your dentist can’t dissuade you from that habit, then that professional’s advice will be: “well, at least chew sugarless gum.”

A popular auto insurance company claims that drivers who switch to its coverage save an average of \$250. But what about those who didn’t switch? Likely they couldn’t save anything. This ad, like the one for gum, is only showing a selected slice or sample, not the whole population.

“Half of Congress members are millionaires” read one headline. Another: “1 out of 20 Americans is now a millionaire.” The real question is how you define “millionaire.” Two ways: the person’s current annual salary is at least \$1 million; or their net worth is over \$1 million? It takes a few paragraphs into the story to

determine it’s the latter definition they’re employing.

According to one newspaper article, graduates of Harvey Mudd, a private college in Southern California, have the highest starting salary of any college or university in the country. Caltech is #2. Is that because these two institutions are really good at increasing the human capital of their undergraduates, or is it because they predominantly offer majors in the sciences and engineering, two very marketable, high-earning career fields?

One account noted that “Western states tops in car theft,” and that “all of the top 10 metropolitan areas for auto theft were in CA, NV, AZ or WA.” The catch? Thefts were calculated as the number per 100,000 inhabitants. The incidence of car ownership is much higher in the West than Atlantic-coast cities in general and Manhattan in particular. A better denominator: per 100,000 licensed drivers—and adjust for the presence of public transportation.

The most dangerous states in which to work, based on accident rates? Alaska and North Dakota. But one suspects that is purely a function of the industrial mix there—higher-risk outdoor occupations (oil, gas, lumber, fisheries) rather than any other factor.

“Baggage problems on airlines growing worse,” read an on-line story. It reported that the number of mishandled bags was up 23% over the previous year. Sounds like one should cram belongings into a carry-on rather than risk checking luggage. But the underlying data: the rate of mishandled or lost bags in Year 1, 4.91 per 1,000; in Year 2, 6.04 per 1,000. Yes, 6.04 is 23% higher than 4.91. But what is it really? A difference of about 1 bag, likely not large enough for travelers to fret about.

A similar example: When the Justice Department sued Texas over its voter ID law a few years ago, it noted that Hispanic voters were 46.5% more likely to lack a photo ID. True. But, the percentage of Hispanic voters without that document, 6.3%; for non-Hispanics, 4.3%. ($6.3 / 4.3 = 1.465$.) So is it 46.5% or two percentage points?

While campaigning in West Virginia in 2008, Hillary Clinton expressed how important that state was by noting that no Democratic candidate had ever won the presidency without carrying WV. True. But that state only has 5 electoral votes, far fewer than the usual margin of victory; thus it wouldn’t have made any difference either way.

As Mark Twain wrote, and attributed (inaccurately, we think) to Disraeli: “There are three kinds of lies: lies, damned lies and statistics.” And they are used with abandon by commercial interests, bureaucrats, politicians and the media. □