



D23 Does Size Really Matter — Or Is How You Manipulate It More Important? A Review of Data Analysis and Presentation Tips and Tricks

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After attending this presentation attendees will better appreciate what can go wrong with scientific analyses and testimony, what enabling mechanisms are at work, what motivates practitioners to indulge in unethical and/or illegal behavior, and what strategies may be employed to avoid or minimize such problems.

As the old adage goes, “there are lies, damned lies, and statistics.” Some would argue that whoever created that phrase was somewhat myopic — and that it could more correctly be stated as, “there are lies, damned lies, statistics, and government statistics.” Experts, judges, and lawyers should be aware of techniques that may be used to misrepresent the facts. This is now more important than ever because in the modern era of digital photography and digital videography, combined with computerized editing, there is ample potential to misrepresent more than just numerical data.

Those indulging in misrepresentation fall into several categories and numerous subcategories. In broad terms, the purveyor of the misleading information may be the devious first-hand manipulator, an unscrupulous messenger who knowingly presents spurious data from a “legitimate and authoritative source” (or otherwise), or merely an innocent, ignorant “victim” who presents bogus data passed along from another source. The latter two categories may be difficult to distinguish — it is amazing how a genius can morph into an absolute imbecile when it comes to interpreting data generated by others. Perhaps this is why courts in some jurisdictions are loathe to allow experts to cite data from studies conducted by others, no matter how prestigious the source: California springs to mind.

When such misrepresentation occurs in the world at large, it can be endlessly debated and debunked (or not); global warming being a good example; however, when misrepresentation occurs in a court, there is less potential for debate — less chance to “get it right” — and the negative consequences may be dire. It usually comes down to one expert contradicting another, and a jury, presumably of limited education and experience in the given specialism, is left to assess credibility based upon unreliable subjective criteria (which expert appeared or sounded most convincing — not always the best indicator of data integrity).

It should be noted that experts are not solely to blame for data misrepresentation. Lawyers see it as their mission to discredit (warranted or not) and mislead. Cross-examination is often used to “debunk” established science by infusing pseudo-science or junk science into an otherwise rational debate. There must be a reason that those lawyers don’t operate under oath, right?

Case studies and examples will be used to illustrate the points discussed and speculate as to the motivations of the guilty parties. It will be demonstrated that while some instances of wrongdoing are the acts of individuals, others strongly indicate conspiracy. It is concluded that these practices will continue unabated without systemic reform, and that this reform will take a concerted effort on the part of the legal system and society at large. Perhaps so many key players benefit from these practices that the motivation for change simply does not exist!

Data Manipulation, Misrepresentation, Experts and Lawyers