Statistics Surge as Evidence in Trials

By Robert Ambrogi

"There are three kinds of lies," Mark Twain once said, "lies, damned lies, and statistics."

In the courtroom, neither lies nor damned lies have any place. Statistics, on the other hand, have never been more popular.

In fact, while the Twain quote is clever, the more prescient words may be those of famed Justice Oliver Wendell Holmes Jr., who wrote more than a century ago about the coming importance of statistics.

"For the rational study of the law the black-letter man may be the man of the present," Holmes wrote in his 1897 book *The Path of the Law*, "but the man of the future is the man of statistics and the master of economics."

As Holmes might have foreseen, statistical evidence and statistical experts are used with increasing regularity in litigation and have seen a particular surge in recent years. They are also being used in an ever-broadening range of cases.

And as statistical evidence and experts become more important in litigation, the battles over their admissibility are often being fought in the early stages of a case – particularly if the case is a class action.

Reasons for the Surge

The reasons for the surge in the use of statistics are as varied as the cases in which they are used. Statistics have been used as evidence in trials for at least 40 years, experts say. But two factors in particular may have boosted their use.

One was the Supreme Court's 1993 decision in *Daubert v. Merrell Dow Pharmaceuticals*, which clarified the standard for the admissibility of scientific evidence. Daubert left no doubt that statistics, a long-established field of scientific inquiry, are generally admissible.

The other factor that helped boost the use of statistical evidence was the federal judiciary's acknowledgement of its usefulness, first by including a section, "Reference Guide on Statistics," in the Federal Judicial Center's 2000 publication, *Reference Manual on Scientific Evidence*, and then by adding several references to statistical evidence in its 2004 update of the *Manual for Complex Litigation*.

These developments helped judges become more aware of the role of statistics in the courtroom and in turn to become more sophisticated in their understanding of statistical evidence, says Dr. Will Yancey, a Dallas-based expert in statistics and finance who also tracks the use of statistical evidence in litigation through his Web site, WillYancey.com.

Statistics Now Prominent

Two other factors no doubt also helped boost the use of statistics. One is the increasing number of class actions and the need they generate to collect and analyze data across populations, industries and time ranges.

The other is the sheer volume of data in some cases; particularly in financial cases where there is a need to develop statistical models to show patterns across a range of documents or records.

This much is clear: statistics are now commonly used as evidence in a wide range of cases. "Statistical assessments are prominent in many kinds of cases, ranging from antitrust to voting rights," write the authors of the "Reference Guide on Statistics," David H. Kaye, law professor at Arizona State University, and David A. Freedman, professor of statistics at Berkeley.

"Statistical reasoning can be crucial to the interpretation of psychological tests, toxicological and epidemiological studies, disparate treatment of employees, and DNA fingerprinting," they say, adding, "this list could easily be extended."

Indeed, the list is being extended. Some of the other types of cases in which statistics are commonly used include:

- Securities class actions, as evidence to prove or disprove market manipulation or to calculate damages.
- Antitrust cases, to prove conspiracy to restrain trade or to establish damages.
- Products liability cases, as proof of causation.
- Patent infringement cases, examining clinical trials, calculation of damages, etc.
- Real estate cases, to assist in property valuations.
- Tax cases, for sampling of financial records.

Daubert Challenges

One consequence of this growing use of statistical evidence and experts is that they are being challenged early on in a lawsuit, primarily through *Daubert* hearings. This is particularly true in class actions.

Among the federal circuit courts, there is an emerging consensus to require rigorous vetting of requests for class certification, writes David S. Evans, a law professor at the University of Chicago, in an article recently published on the Social Science Research Network. This consensus "beckons the serious use of economic and statistical evidence at the class certification stage and the use of dueling experts to help the court assess competing views on class certification," he explains.

It makes sense to wage this battle at the class-certification stage rather than later in the litigation, Evans suggests, because the outcome can encourage either defendants to settle or plaintiffs to fold.

"Economic and statistical evidence is often used to address whether the class proposed by the plaintiffs meet the Rule 23 requirements particularly with regard to common methods of proof and the preponderance of class issues," Evans writes.

The Danger of Statistics

With greater use of statistics comes greater sophistication among lawyers in their understanding of the field. Dr. Simon Z. Wu, managing director of forensic litigation at FTI Consulting in Washington, D.C. and IMS *ExpertServices* Elite Expert, says that the lawyers he works with show great understanding of this type of evidence.

Wu specializes in securities and financial economics and serves as an expert in cases involving securities trading, market manipulation, securities fraud and damages, insider trading, market efficiency and related matters.

For Wu, the greater challenge in using statistical evidence is in getting juries to understand. "In my experience, it is hard to get the jury to understand if the evidence is too technical," he says. "I see my job as an expert to be to present this evidence in a way that does not confuse the jurors."

Edward P. Schwartz, a trial and jury consultant based in Boston, says he is always very cognizant of the danger of confusing jurors with statistics.

The danger is due not simply to jurors' lack of training in statistics, but also to what Schwartz describes as "hindsight bias." "When an event actually occurs, they tend to believe that it was much more likely to have occurred than was actually true," he explains.

"Since most torts are the result of a very low-probability event actually taking place, hindsight bias is a thorn in the ass of any defense attorney," Schwartz says. "In addition to believing that such events were more likely than they were, jurors tend to view them as more foreseeable (and hence, preventable) than is appropriate."

To get around these biases, Schwartz helps lawyers develop graphical tools for helping jurors visualize and better understand probabilities and statistics. "I ultimately believe that a combination of visual learning and reasoning by analogy will be central to overcoming these kinds of cognitive limitations of jurors."

The Reference Class Problem

One other danger in this type of evidence hearkens back to Twain's quote equating statistics with lies and damned lies, and that is their potential for being manipulated. Brooklyn Law School Prof. Edward K. Cheng calls this the "reference class" problem. In a forthcoming *Columbia Law Review* article, "A Practical Solution to the Reference Class Problem," he argues that the problem poses a serious challenge to the growing prevalence and importance of statistical evidence.

"Statistical inferences depend critically on how people, events, or things are classified," Cheng writes. "The problem is that there are an infinite number of possible characteristics, and (purportedly) no principle for privileging certain characteristics over others. As a result, statistics become highly manipulable. The resulting manipulability has the potential to completely undermine the objectivity and certainty that make statistical evidence so promising and attractive."

As the title of his article suggests, Cheng proposes a solution. He argues that courts should adapt modeling methods used by statisticians in other contexts to select the most-appropriate reference class for any given case. Such a system, he believes, would "autonomously and powerfully mediate among the classes raised by the parties."

Regardless of whether you agree with Twain or Holmes about the nature of statistics, their use as evidence is likely only to continue to rapidly increase. On that, both Twain and Holmes, were they alive today, would surely agree.