

Don't Apply Risk Analysis To Discounted Settlement Value



Judge Wayne Brazil is fully engaged as a neutral at JAMS, after earning a national and international reputation as one of the most significant innovators and leaders in the field of Alternative Dispute Resolution. Prior to joining JAMS, he spent 25 years as a magistrate judge in the United States District Court for the Northern District of California.

Law360, New York (February 03, 2014, 9:49 AM ET) -- In preparing for a course about alternative dispute resolution that I recently taught, I did some research into the relationship between probability theory and the way “decision analysis” (sometimes called “risk analysis”) is sometimes used to try to determine the “discounted settlement value” of civil cases. What I learned was unnerving. I share the products of that research here in the hope that neither defense counsel nor plaintiffs’ counsel will be lead by “decision analysis” into misevaluating their cases.

Why is “decision analysis” not a reliable tool for assessing settlement value? It’s not just because the results of decision analysis can be no better than the reliability of the estimates of each component of the formula. Nor is it just because the formulae that decision analysts use do not take into account so many factors that should play significant roles in settlement decisions, e.g., litigation transaction costs, the economic and other tolls of protracted uncertainty, or damage to reputation or relationships.

Rather, decision analysis cannot reliably determine the “discounted settlement value” of a case because the way it is used for this purpose violates fundamental assumptions in probability theory and pursues answers to kinds of question that triers of fact generally are not asked to address. An example will help illustrate these points.

Assume that there are two major contested issues in the liability phase of a tort case: causation and fault. A decision analyst might suggest that the likelihood that plaintiff would establish liability can be calculated by multiplying the likelihood that the plaintiff would prevail on the causation issue by the likelihood that she would prevail on the fault issue. Thus, if she had a 60 percent chance of prevailing on causation and a 60 percent chance of prevailing on fault, she would have only a 36 percent chance of establishing liability.

To determine the “discounted settlement value” of the case, our decision analyst would ask counsel to estimate the likelihood that the jury would award different possible levels of damages. Assume that counsel estimate that there is a 20 percent chance the jury would return an award of \$200,000, a 60 percent chance of an award of \$120,000, and a 20 percent chance of an award of only \$50,000. Our decision analyst would suggest that to determine the probable magnitude of a damages award would be to multiply each of these possible damages figures by the separate probability that the jury would make

that particular award, then to add the three resulting figures. The math in this part of this exercise would look like this:

20 percent chance of a \$200,000 verdict = \$40,000
60 percent chance of a \$120,000 verdict = \$72,000
20 percent chance of a \$50,000 verdict = \$10,000
Total = \$122,000

According to this decision analyst, however, the discounted settlement value of this case is not \$122,000. Rather, to determine that settlement value, it would be necessary to multiply the probable damages figure by the separate estimate of the probability that the plaintiff would establish liability (36 percent). Under this approach, the “discounted settlement value” of this case is $.36 \times \$122,000$, or \$43,920.

At first glance, defense lawyers might like the product of this kind of analysis — but, digging deeper, they would understand that it is dangerously misleading. Plaintiffs’ lawyers are likely to feel, instinctively, that this approach has yielded a product that bears little relation to the real world and, therefore, must be infected by some fundamental flaw.

As it turns out, the plaintiffs’ lawyers’ instincts would be pointing them in the right direction.

Decision analysts’ use of probability theory to determine the “discounted settlement value” of civil cases suffers from two fundamental problems. The first is that, under probability theory, it is appropriate to multiply the separate likelihoods that each of two events will occur in order to estimate the net likelihood that both of those events will occur in conjunction only if the occurrence of each event is truly independent. In civil litigation, however, the “events” that would populate the decision analysts’ formulae often are not truly independent.

In our hypothetical case, for example, some of the same evidentiary variables will affect both the likelihood that the plaintiff will prevail on liability and the likely size of the jury’s damage award. How much the jury likes and believes the plaintiff is likely to affect both the odds that she will prevail on liability and the amount of damages she will be awarded. Because some of the same variables could significantly affect the likelihood of each occurrence, we cannot say that each is truly independent. When two occurrences are not truly independent, we cannot simply multiply the likelihood that one will occur by the likelihood that the second will occur in order to determine the likelihood that the two events will occur conjunctively.

Observations by Harvard Law Professor Charles Nesson, made in an essay written for other purposes, alert us to a second difficulty with trying to use probability theory to determine the discounted settlement value of civil cases.[1] Professor Nesson points out that in civil litigation, legal and historical conclusions often are not conjunctive. Instead, when the law requires a plaintiff to prevail on several different issues, the jury is not asked “what is the net probability of plaintiff prevailing on all of these issues?” In other words, the law usually does not impose a duty on a plaintiff to prove that the joint probability of multiple events exceeds 50 percent, or that the joint probability of prevailing on multiple issues exceeds that figure.

Instead of asking the jury to answer a question of probability theory, the law asks the jury to determine, for one central fact issue at a time, whether plaintiff’s contention about that particular fact is supported by 51 percent of the persuasive power of the evidence.

There may be occasions, of course, when juries get confused about what they are being asked to do and blend what are supposed to be separate issues or inquiries. But this risk is greatly reduced when the verdict form consists of answers to special interrogatories — as each interrogatory asks the jury to determine separately for each material fact whether the plaintiff has met her burden of proof. Moreover, juries are not instructed in probability theory, and even when they blend inquiries that are separate under the law, there is no reason to assume that they purport to apply probability theory during their deliberations.

Thus, two big disconnects compromise our hypothetical analyst's approach: one with probability theory (correctly understood) and one with what triers of fact are asked to do. Our analyst is using an approach that "works" only for the purpose of determining the joint probability of events or facts whose occurrence are truly independent. Yet juries are not asked to determine conjoined probability, and the factual issues they are asked to resolve separately often are not independent. Given these realities, decision analysis cannot reliably determine the "discounted settlement value" of a case.

—By Judge Wayne D. Brazil, JAMS

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[1] Charles Nesson, "The Evidence or the Event? On Judicial Proof and the Acceptability of Verdicts," 98 Harv. L. Rev. 1357 (1985).