Likely Jury Composition

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The chance of obtaining a favorable jury, and the risk of getting an unfavorable one, often weigh heavily in lawyers' decisions to settle a matter or to take it to trial. Even when the overall jury pool leans toward the plaintiff, defendants have a calculable chance of obtaining a favorably inclined jury. Favorably inclined jury pools can yield unfavorable jurors just as unfavorably inclined pools can yield favorable ones. This article describes probability analysis as a means of assessing the chances of getting both favorably and unfavorably inclined juries from jury pools whose overall leaning ranges from strongly favorable to split evenly to strongly unfavorable.

In civil litigation, a recurring question for both parties is whether to try to settle a matter or to take it to trial. Balanced against the likelihood and benefits of winning are the costs and drawbacks of trying a case. The chance of getting a favorable jury, and the risk of getting an unfavorable one, often weigh heavily in this decision.

Predicting the inclinations of a not-yet-selected jury is a delicate task. Uncertainty abounds. The jury pool consists of people leaning toward the plaintiff as well as the defendant, and the jury selected to hear the case may or may not reflect the overall leaning of the pool. Favorably inclined jury pools can yield unfavorably inclined juries just as unfavorable pools can yield favorable juries.

So, how can the chance of getting a favorable jury, and the risk of getting an unfavorable one, be assessed if no guarantee exists that the selected jury will reflect the overall leaning of the jury pool? How likely is it, for example, that even though two-thirds (67 percent) of the jury pool favors the plaintiff, the selected jury would not? And what are the chances of obtaining an unfavorable jury even if the overall leaning of the jury pool is favorable?

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ENTER: PROBABILITY ANALYSIS

Probability analysis helps answer these questions. To conduct probability analysis, information concerning the overall leaning of the jury pool must be obtained to calculate the chance of getting a favorable jury and the risk of getting an unfavorable one. On-site research can provide sound information about the overall leaning of the jury pool. Probability analysis can then be used to calculate the likelihood of getting a favorable or unfavorable jury given the overall leaning of the pool.

Favorably inclined jury pools can yield unfavorably inclined juries just as unfavorable pools can yield favorable juries.

For example, assume you are representing a defendant in a lawsuit and on-site research finds that 67 percent of the jury pool leans toward the plaintiff. Should you or should you not settle this case for fear of getting an unfavorably inclined jury? What is the likelihood of getting a favorable jury even though the overall leaning of the jury pool is unfavorable? A favorable jury is one that votes in your favor, though the legal requirements for such a finding vary by jurisdiction and case. Suppose that for your case in your jurisdiction, a favorable finding for the defendant occurs whenever fewer than four jurors on a six-person jury vote for the plaintiff. Probability analysis yields a 31 percent chance of getting a six-person jury comprised of three or fewer plaintiff jurors when two-thirds of the overall pool leans toward the plaintiff. While this number sounds good, it is important to remember that this means there is a 69 percent chance of getting an unfavorably inclined jury (i.e., a jury with four or more plaintiff-oriented jurors). Now suppose that for a twelve-person jury, a favorable jury for the defendant is defined as one where fewer than seven jurors vote for the plaintiff. If two-thirds (67 percent) of the overall pool leans toward the plaintiff, there is only a 16 percent chance a defendant will get a favorably inclined jury; the plaintiff has an 84 percent chance of getting such a jury.

Table 1 (for six-person juries) and Table 2 (for twelve-person juries) provide the calculated probabilities of getting different types of juries as a function of the overall leaning of the jury pool. The *exact* probability of getting a *particular* combination of plaintiff-oriented and defendant-oriented jurors on the jury is provided in the first group of rows of each of the two tables. For a six-person jury (Table 1), if the jury pool leaned strongly (75 percent) toward the defendant (i.e., was only 25 percent plaintiff oriented), the chances are quite good of getting a favorable jury. There is a 17 percent chance of getting six defendant-oriented jurors, a 36 percent chance of getting five defendant-oriented jurors and one plaintiff juror, a 31 percent chance of getting four defendant-oriented jurors and two plaintiff-oriented jurors, and a 13 percent chance of getting an equal split between defendant- and plaintiff-oriented jurors. By adding these exact probabilities up, the chance of getting a favorably inclined jury can be obtained. Thus, there is a 97 (17 + 36 + 31 + 13) percent chance of getting a favorably inclined six-person jury (that is, one having three or fewer plaintiff-oriented jurors), and only a 3 percent chance of getting an unfavorably inclined jury (that is, one having four or more plaintiff jurors). The second and third groups of rows in each table provide these calculations directly, so you need not add the exact probabilities together yourself.

The numbers in these tables are calculated according to the *hypergeometric probability distribution.* This probability distribution is based on two numbers: the *total* number of juries that can be formed from the jury pool, and the number of those juries having the *specific* composition in which you are interested. The exact probability is calculated by *comparing* the number of times the specific jury composition occurs to the total number of juries of *any* composition that can be extracted from the jury pool. Tables 1 and 2 provide the calculated probabilities for five different overall leanings of the jury pool. Probabilities can be calculated for any leaning of the jury pool, be it 29 percent plaintiff oriented, 45 percent defendant oriented, 56 percent defendant oriented, or 71 percent plaintiff oriented. The use of only five overall jury pool leanings in Tables 1 and 2 was done for illustration only and is in no way meant to imply that probabilities for only those leanings can be calculated. The chance of *any* jury composition for *any* leaning of a jury pool can be calculated.[1]

By studying Tables 1 and 2, some interesting information can be extracted. For example, a jury pool that is evenly split in its leanings between defendant and plaintiff offers a defendant a 66 percent chance of a favorably inclined six-person jury and a 62 percent chance of a favorably inclined twelve-person jury. In other words, an evenly split (unbiased) jury pool yields a better opportunity at trial for the defendant than for the plaintiff. Similarly, even if a jury pool is strongly biased in

Table 1. Probability of Getting Different Compositions of 6-Person Juries Based on Orientation of the Jury Pool

	Orientation of Jurors in Jury Pool				
	25% Plaintiff Oriented	*33% Plaintiff Oriented*	*50% Plaintiff Oriented*	*67% Plaintiff Oriented*	*75% Plaintiff Oriented*
Actual Jury Composition					
0 Plaintiff, 6 Defendant Jurors	.1689	.0837	.0133	.0009	.0001
1 Plaintiff, 5 Defendant Jurors	.3620	.2674	.0889	.0133	.0033
2 Plaintiff, 4 Defendant Jurors	.3059	.3395	.2367	.0759	.0294
3 Plaintiff, 3 Defendant Jurors	.1303	.2193	.3223	.2193	.1303
4 Plaintiff, 2 Defendant Jurors	.0294	.0759	.2367	.3395	.3059
5 Plaintiff, 1 Defendant Jurors	.0033	.0133	.0889	.2674	.3620
6 Plaintiff, 0 Defendant Jurors	.0001	.0009	.0133	.0837	.1689
0 Plaintiff, 6 Defendant Jurors	.1689	.0837	.0133	.0009	.0001
1 or fewer Plaintiff, 5 or more Defendant Jurors	.5309	.3511	.1022	.0142	.0034
2 or fewer Plaintiff, 4 or more Defendant Jurors	.8368	.6906	.3389	.0901	.0328
3 or fewer Plaintiff, 3 or more Defendant Jurors	.9671	.9099	.6612	.3094	.1631
4 or fewer Plaintiff, 2 or more Defendant Jurors	.9965	.9858	.8979	.6489	.4690
5 or fewer Plaintiff, 1 or more Defendant Jurors	.9998	.9991	.9868	.9163	.8310
6 or fewer Plaintiff, 0 or more Defendant Jurors	1.0000	1.0000	1.0000	1.0000	1.0000
0 or more Plaintiff, 6 or fewer Defendant Jurors	1.0000	1.0000	1.0000	1.0000	1.0000
1 or more Plaintiff, 5 or fewer Defendant Jurors	.8310	.9163	.9868	.9991	.9998
2 or more Plaintiff, 4 or fewer Defendant Jurors	.4690	.6489	.8979	.9858	.9965
3 or more Plaintiff, 3 or fewer Defendant Jurors	.1631	.3094	.6612	.9099	.9671
4 or more Plaintiff, 2 or fewer Defendant Jurors	.0328	.0901	.3389	.6906	.8368
5 or more Plaintiff, 1 or fewer Defendant Jurors	.0034	.0142	.1022	.3511	.5309
6 or more Plaintiff, 0 Defendant Jurors	.0001	.0009	.0133	.0837	.1689

the defendant's favor (say, 75 percent), there is still a measurable chance (greater for plaintiffs than defendants) of getting an unfavorably inclined jury: 16 percent in six-person juries and 4 percent in twelve-person juries for plaintiffs, and 3 percent in six-person juries and .9 percent in twelve-person juries for defendants. These tables, and the probability analysis used to derive them, provide valuable information about the chance of getting a favorable jury and risk of getting an unfavorable one as a function of the overall leaning of the jury pool.

PROBABILITY ANALYSIS ASSUMPTIONS

While probability analysis is very useful for assessing the *general* chance of getting a favorably inclined jury, its predictions about the likely nature of the leaning of a jury may very well be different in any *individual* case. The probability analysis assumes that jurors are randomly selected from the jury pool. In other words, the probability analysis provides information about the likelihood of jury composition *absent* voir dire or any other process that influences juror selection systematically. The *actual* jury selected might be more or less favorable than expected from this analysis, though the analysis provides an idea of what will be faced prior to voir dire.[2]

The probability analysis also assumes that the plaintiff and defendant orientations of individual jurors are related to the ultimate verdict of the jury. The analysis provides information about how jurors are likely to vote *prior to deliberations* but *after presentation of the case.* Deliberations are clearly capable of changing jurors' minds, though the analysis provides an idea of what will be faced prior to that process occurring. Further, the actual

Table 2. Probability of Getting Different Compositions of 12-Person Juries Based on Orientation of the Jury Pool

	Orientation of Jurors in Jury Pool				
	25% Plaintiff Oriented	*33% Plaintiff Oriented*	*50% Plaintiff Oriented*	*67% Plaintiff Oriented*	*75% Plaintiff Oriented*
Actual Jury Composition					
0 Plaintiff, 12 Defendant Jurors	.0249	.0057	.0001	.0000	.0000
1 Plaintiff, 11 Defendant Jurors	.1166	.0404	.0018	.0000	.0000
2 Plaintiff, 10 Defendant Jurors	.2367	.1247	.0120	.0002	.0000
3 Plaintiff, 9 Defendant Jurors	.2750	.2221	.0467	.0018	.0001
4 Plaintiff, 8 Defendant Jurors	.2032	.2541	.1177	.0101	.0013
5 Plaintiff, 7 Defendant Jurors	.1004	.1965	.2015	.0393	.0079
6 Plaintiff, 6 Defendant Jurors	.0339	.1052	.2404	.1052	.0339
7 Plaintiff, 5 Defendant Jurors	.0079	.0393	.2015	.1965	.1004
8 Plaintiff, 4 Defendant Jurors	.0013	.0101	.1177	.2541	.2032
9 Plaintiff, 3 Defendant Jurors	.0001	.0018	.0467	.2221	.2750
10 Plaintiff, 2 Defendant Jurors	.0000	.0002	.0120	.1247	.2367
11 Plaintiff, 1 Defendant Juror	.0000	.0000	.0018	.0404	.1166
12 Plaintiff, 0 Defendant Jurors	.0000	.0000	.0001	.0057	.0249
0 Plaintiff, 12 Defendant Jurors	.0249	.0057	.0001	.0000	.0000
1 or fewer Plaintiff, 11 or more Defendant Jurors	.1415	.0461	.0019	.0000	.0000
2 or fewer Plaintiff, 10 or more Defendant Jurors	.3782	.1708	.0139	.0002	.0000
3 or fewer Plaintiff, 9 or more Defendant Jurors	.6532	.3929	.0606	.0020	.0001
4 or fewer Plaintiff, 8 or more Defendant Jurors	.8564	.6470	.1783	.0121	.0014
5 or fewer Plaintiff, 7 or more Defendant Jurors	.9568	.8435	.3798	.0514	.0093
6 or fewer Plaintiff, 6 or more Defendant Jurors	.9907	.9487	.6202	.1566	.0432
7 or fewer Plaintiff, 5 or more Defendant Jurors	.9986	.9880	.8217	.3531	.1436
8 or fewer Plaintiff, 4 or more Defendant Jurors	.9999	.9981	.9394	.6072	.3468
9 or fewer Plaintiff, 3 or more Defendant Jurors	1.0000	.9999	.9861	.8293	.6218
10 or fewer Plaintiff, 2 or more Defendant Jurors	1.0000	1.0000	.9981	.9540	.8585
11 or fewer Plaintiff, 1 or more Defendant Jurors	1.0000	1.0000	.9999	.9944	.9751
12 or fewer Plaintiff, 0 or more Defendant Jurors	1.0000	1.0000	1.0000	1.0000	1.0000
0 or more Plaintiff, 12 or fewer Defendant Jurors	1.0000	1.0000	1.0000	1.0000	1.0000
1 or more Plaintiff, 11 or fewer Defendant Jurors	.9751	.9944	.9999	1.0000	1.0000
2 or more Plaintiff, 10 or fewer Defendant Jurors	.8585	.9540	.9981	1.0000	1.0000
3 or more Plaintiff, 9 or fewer Defendant Jurors	.6218	.8293	.9861	.9999	1.0000
4 or more Plaintiff, 8 or fewer Defendant Jurors	.3468	.6072	.9394	.9981	.9999
5 or more Plaintiff, 7 or fewer Defendant Jurors	.1436	.3531	.8217	.9880	.9986
6 or more Plaintiff, 6 or fewer Defendant Jurors	.0432	.1566	.6202	.9487	.9907
7 or more Plaintiff, 5 or fewer Defendant Jurors	.0093	.0514	.3798	.8435	.9568
8 or more Plaintiff, 4 or fewer Defendant Jurors	.0014	.0121	.1783	.6470	.8564
9 or more Plaintiff, 3 or fewer Defendant Jurors	.0001	.0020	.0606	.3929	.6532
10 or more Plaintiff, 2 or fewer Defendant Jurors	.0000	.0002	.0139	.1708	.3782
11 or more Plaintiff, 1 or fewer Defendant Jurors	.0000	.0000	.0019	.0461	.1415
12 Plaintiff, 0 Defendant Jurors	.0000	.0000	.0001	.0057	.0249

verdict is likely to be strongly related, if not mostly determined, by predeliberation inclinations.[3]

Even though voir dire and deliberations may alter the chance of success, an uphill fight is still more difficult than a downhill one, and a downhill one is still preferred to an uphill one. Probability analysis provides information pertinent to the opportunities and risks of going to trial in terms of getting a favorably inclined or unfavorably inclined jury. While not the only factors important to the determination to settle or go to trial, the chance of getting a favorable jury and the danger of getting an unfavorable one are often of great consequence.

ENDNOTES

[1]The mathematical formulas for the exact calculations are provided in the appendix on the following page.

[2]Presuming that voir dire does *not* systematically bias the makeup of juries (in terms of their *inclinations* with respect to the overall pool) may or may not be valid for any particular trial. "Under conditions of limited voir dire where attorneys are forced to rely on obvious personality characteristics, lawyers will be only minimally effective in securing more favorable juries" (Valerie P. Hans & Neil Vidmar, Judging the Jury 77 [New York, Plenum Press 1986]). Robert MacCoun writes, "Systematic experiments suggest that attorneys may not be capable of accurately selecting favorable jurors—their choices are no more accurate than if they simply tossed a coin" (Robert MacCoun, *Inside the Black Box: What Empirical Research Tells Us About Decisionmaking by Civil Juries, in* Verdict: Assessing the Civil Jury System 137, 151 [Robert E. Litan ed., Washington, D.C., The Brookings Institute 1993]). One research study (H. Zeisel & S. Diamond, *The Effect of Peremptory Challenges on Jury and Verdict: An Experiment in a Federal District Court*, 30 Stan. L. Rev. 491 [1978]) compared how persons challenged by attorneys on twelve different criminal cases *would* have voted with the verdicts of the *actual* juries on those cases, finding that voir dire affected the final verdict in three of the twelve cases, had no effect in seven of the cases, and at best a marginal effect in the other two (however, for a critique of this study, see G. Bermant & J. Shapard, *Voir Dire, Juror Challenges, and Adversary Advocacy, in* The Trial Process [B. Sales ed., New York, Plenum 1981).

Whether scientific jury selection fundamentally alters attorney-based challenges is also unclear. Another study (I.A. Horowitz, *Juror Selection: A Comparison of Two Methods in Several Criminal Cases*, 10 J. Applied Soc. Psychol. 86 [1980]), using four mock trials, obtained predictions as to jurors' inclinations based on voir dire, finding that "scientific" predictions made on the basis of survey data more accurately predicted jurors' inclinations in two of the four trials, did worse in one trial, and was equally as ineffective in the other. For a general discussion of the role of voir dire in altering (or not) the inclinations of jurors with respect to the overall jury pool, see Saul M. Kassin & Lawrence S. Wrightsman, The American Jury on Trial: Psychological Perspectives 52–62 (New York, Hemisphere Publishing 1988); and Valerie P. Hans & Neil Vidmar, Judging the Jury 79–94 (New York, Plenum Press 1986).

[3]Typically, the verdict favored by a majority of jurors at the start of deliberation prevails (H.H. Davis et al., *The Empirical Study of Decision Processes in Juries: A Critical Review, in* Law, Justice, and the Individual in Society: Psychological and Legal Issues [J.L. Tapp & F.J. Levine eds., New York, Holt 1977]), though advocates for the defendant in criminal trials tend to be somewhat more influential and thus the juries more lenient than in civil trials due to the different standards of proof used (reasonable doubt versus preponderance of evidence) (Robert MacCoun, *Inside the Black Box: What Empirical Research Tells Us About Decisionmaking by Civil Juries, in* Verdict: Assessing the Civil Jury System 137–80 [Robert E. Litan ed.,Washington, D.C., The Brookings Institute 1993]; G. Stasser et al., *The Social Psychology of Jury Deliberations: Structure, Process and Product, in* The Psychology of the Courtroom [N. Kerr & R. Bray eds., New York, Academic Press 1982]). Minority factions rarely prevail in jury deliberations. For example, in one study (H. Kalven & H. Zeisel, The American Jury [Boston, Little, Brown, 1966]) of 225 criminal trial juries, 215 of the juries were not evenly split in their inclinations prior to deliberation, and the verdicts of 209 of these 215 juries could be predicted from the predeliberation inclinations of the jurors. Thus, the best predictor of the verdict are the jurors' inclinations prior to deliberation.

Appendix. Mathematical Formulas for Jury Composition Probability Calculations

For the interested and/or mathematically inclined, this appendix describes the method by which the probabilities of different jury compositions are calculated. A mathematical treatment of this matter is available in most introductory probability and statistical inference books.[1]

Let 100 represent the size of the jury pool. Of that 100, let the number of plaintiff- and defendant-oriented people be the percent that lean toward each in the jury pool where NP and ND stand for "number of plaintiff-" and "number of defendant-" oriented people in the 100-person jury pool. Also, let JS stand for "jury size," whatever it may be in a specific instance.

Then the *total number of different juries* that can be extracted from the jury pool is as follows:

$$\binom{100}{JS} = \frac{100!}{JS!\,(100-JS)!} \qquad \text{Eq. 1}$$

This total number is based on every possible arrangement of jurors for a "JS"-person jury (6 or 12 as the case may be, or any number for that matter) selected from a pool of 100 people. The exclamation mark is the mathematical symbol for "factorial," which means take the number and multiply it by every number lower than it (i.e., 100! = 100 * 99 * 98 * 97 * .... * 3 * 2 * 1). There are more than 1 billion different 6-person juries (1,192,052,400, to be exact) and more than 92 quadrillion different 12-person juries (92,437,052,497,390,000, to be exact) that can be selected from a jury pool of 100 people.

The question then is, how many of the total number of possible juries would have a specific composition, say two plaintiff- and four defendant-oriented jurors, for example? To get two plaintiff-oriented jurors on the jury, they must be selected from the total number of plaintiff-oriented people in the jury pool. There are many, many different possible pairs of plaintiff-oriented jurors that could end up being selected. To determine the total number of pairs of plaintiff-oriented jurors that can be selected from the total number of plaintiff-oriented people in the jury pool, one uses a formula similar to that for the total number of different juries that can be selected. However, rather than selecting juries of a given size from a pool of 100 jurors, we are now selecting some number of plaintiff-oriented jurors (NPJ) from the total number of such plaintiff-oriented people (NP) in the jury pool, as follows:

$$\binom{NP}{NPJ} = \frac{NP!}{NPJ!\,(NP-NPJ)!} \qquad \text{Eq. 2}$$

If there are 67 plaintiff-oriented jurors (i.e., NP = 67) in the 100-person jury pool (that is, the jury pool is 67 percent plaintiff-oriented), then there are 2,211 different pairs (i.e., NPJ = 2) of plaintiff-oriented jurors.

The very same rationale used to determine the number of different pairs of plaintiff-oriented jurors is used to determine the number of different combinations of defendant-oriented jurors of the "necessary" size. If two jurors are plaintiff oriented on a six-person jury, then the remaining four jurors must be defendant oriented. The number of defendant-oriented jurors (NDJ) to be on the jury must be selected from the number of defendant-oriented people in the jury pool (ND). The number of different combinations of these defendant-oriented jurors that can be selected is as follows:

$$\binom{ND}{NDJ} = \frac{ND!}{NDJ!\,(ND-NDJ)!} \qquad \text{Eq. 3}$$

If there are 33 defendant-oriented jurors in the 100-person jury pool (i.e., ND=33, which *must* be the case if the jury pool has 100 people and 67 of them are plaintiff oriented), then there are 40,920 different combinations of defendant-oriented quadruplets that could be selected from that pool.

To determine the likelihood of selecting exactly 2 plaintiff-oriented jurors *and* exactly 4 defendant-oriented jurors from a 100-person jury pool where 67 percent of the jurors are plaintiff oriented (and so 33 percent are defendant oriented), a "multiplication rule" is used to calculate all possible combinations of pairs of plaintiff-oriented jurors with all possible quadruplets of defendant-oriented jurors. Think of it this way: For every pair of plaintiff-oriented jurors, there

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[1] *See, e.g.*, Robert V. Hogg & Elliot A. Tanis, Probability and Statistical Inference (New York, MacMillan Publishing Co., Inc. 1977) (especially pp. 17–35, 47–51).

Appendix. Mathematical Formulas for Jury Composition Probability Calculations (cont'd)

are 40,920 different quadruplets of defendant-oriented jurors that could be matched to them. So, to calculate all possible combinations of two plaintiff- and four defendant-oriented jurors, the number of pairs of plaintiff jurors must be multiplied by the number of quadruplet defendant jurors that could be matched to each pair. In this case, 2,211 is multiplied by 40,920, yielding more than 90 million different six-person juries (90,474,120, to be exact) having two plaintiff-oriented and four defendant-oriented jurors.

At this point, the total number of different juries having the desired composition is known, as is the total number of different juries of all compositions. To obtain the probability of getting the desired jury composition, these numbers are divided. In the case of our example, the 90 million-plus six-person juries of plaintiff pairs and defendant quadruplets is divided by the 1 billion-plus possibilities of six-person juries that could occur, yielding a probability of .0759 or, stated differently, a 7 percent to 8 percent chance of obtaining this defendant-oriented jury composition when faced with 67 percent of the jury pool leaning the opposite direction. You can see that this is the number recorded in Table 1 where the row labeled "2 Plaintiff, 4 Defendant Jurors" intersects the column headed "67% Plaintiff Oriented" jurors in the jury pool. Thus, the abstract formula for calculating any probability for any specific jury composition for any size jury and any overall leaning of a jury pool is:

$$\text{Probability of getting } \textit{exactly} \text{ NPJ plaintiff and NDJ defendant jurors on a jury of size JS from a jury pool of size 100 consisting of NP plaintiff and ND defendant people} = \frac{\binom{NP}{NPJ}\binom{ND}{NDJ}}{\binom{100}{JS}} \qquad \text{Eq. 4}$$

Once the *exact* probabilities are calculated for every possible composition of a jury, then *cumulative* probabilities can easily be obtained. Cumulative probabilities specify how likely it is to get a jury with "fewer than" or "more than" some number of plaintiff- and/or defendant-oriented jurors. Relevant exact probabilities are added together to obtain the desired cumulative probability. Table 1 can be used to track each of the following illustrations of this addition principle. For example, to determine how likely a 67 percent plaintiff-oriented jury pool will yield a six-person jury having three or fewer plaintiff-oriented (and therefore three or more defendant-oriented) jurors, the exact probabilities for juries having exactly 0, 1, 2, and 3 plaintiff-oriented jurors are added together (i.e., .0009 + .0133 + .0759 + .2193 = .3094). Similarly, to determine how likely a 67 percent plaintiff-oriented jury pool will yield a six-person jury having four or more plaintiff-oriented (and therefore two or fewer defendant-oriented) jurors, the exact probabilities for juries having exactly four, five, or six plaintiff-oriented jurors are added together (i.e., .3395 + .2674 + .0837 = .6906). In other words, cumulative probabilities *cumulate* exact probabilities!

Because these computations are tedious, repetitive, and prone to error, a computer program can (and should) be used to calculate both the exact and cumulative probabilities for any jury size and for any overall leaning of the jury pool. The computer program can easily be written in any programming language and made into an executable file to be run on any compatible system.