1-1-2011

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THE PREDICTABILITY OF JURIES†

Valerie P. Hans*
Theodore Eisenberg**

The jury is said to be the least predictable of the decision makers in the legal system. Indeed, the uncertainty many observers feel when faced with an imminent jury decision is the stuff of dramatic tension. Countless movies and television shows about the courtroom feature the breathless moments between the trial judge asking whether the jury has reached a verdict, the foreman rising slowly and stating, “Yes, Your Honor, we have a verdict,” and the foreman pronouncing the verdict to the hushed courtroom, which erupts in either jubilation or rage.¹

The unpredictability of juries is reportedly the bane of many litigators, who must attempt to anticipate the future reactions of a group of laypersons.² The uncertainties of jury responses to potential cases produce pressures to drop or settle cases or to reach high–low agreements in the face of the unknown. Lawyers’ decisions about what cases to take or reject are based on their guesses and predictions of what a jury might do and thus on estimates of uncertain value. Perhaps as a result, the unpredictability of juries has been a boon to the trial-consulting industry. Many jury consultants emphasize the ways

† An early version of this Article was presented at the Sixteenth Annual Clifford Symposium on Tort Law and Social Policy, The Limits of Predictability and the Value of Uncertainty, on April 8, 2010, at DePaul University College of Law in Chicago, Illinois. We thank Professor Stephan Landsman and Neil Vidmar for their helpful comments. The NCSC-BJS Study data analyzed here were gathered under a grant from the Bureau of Justice Statistics and are archived at the Inter-university Consortium for Political and Social Research, Civil Justice Survey of State Courts, 2005, Study No. 23862. The views expressed here are those of the authors and not those of either the National Center for State Courts or the Bureau of Justice Statistics.

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in which their insights and methods offer the ability to predict jury trial outcomes.\(^3\)

In this Article, we first reflect on what it means to say that juries are "unpredictable." Next, we consider research about jury functioning to assess whether the common claims about unpredictable juries are borne out. Finally, we analyze the factors that are associated with perceptions of the unpredictability of civil juries by combining selected data from two different research projects: one that assesses corporate and insurance attorneys' views of the civil justice system, and one that analyzes civil jury trials in state courts.

II. WHAT DOES JURY UNPREDICTABILITY MEAN?

First, we consider the diverse possible interpretations of the uncertainty or unpredictability of juries as legal decision makers. In addition, we reflect on what elements and features of jury decision making might lead to more or less certainty and predictability. A preliminary point about the purported unpredictability of juries is that we must place juries and jury trials within the broader context of the civil justice system. Only a small fraction of cases go to trial and are heard by juries.\(^4\) Theorizing about what cases settle and what cases go to trial, many scholars conclude that the large majority of cases with clear outcomes will settle, leaving the most ambiguous cases for trial.\(^5\) This subset of ambiguous cases is the group of cases that juries decide. The outcomes of these cases might be difficult to predict, no matter who decides them. Before the trial, some uncertainty about a case's eventual outcome will be present regardless of which decision maker is used. In addition to the ambiguity of the cases selected for trial, it is not always clear how the trial evidence will develop and how witnesses will communicate their stories.

Juries are often contrasted with judges, and reasonably so, because judges are the most plausible alternative to juries. The judge decides alone, whereas the jury has the benefit of combining multiple insights

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into a group verdict. A host of studies comparing individual and group decision making finds that groups offer more stable and more accurate estimates of a population's preferences. Even so, observers might well consider judicial decisions to be more predictable than decisions by juries. After the case assignment and sometimes even before, the identity of the judge who will preside over a trial is known. The judge's previous history, rulings in similar cases, and prior relationships and experiences all offer some information (whether it is useful or not) about how the judge might decide an upcoming case. None of that is known for certain before a jury trial. Even if the general tendencies of a jury pool are known through a lawyer's or litigant's prior experiences or a trial consultant's systematic information, the identity of the individual jurors will only be determined at the start of the trial during the jury-selection process. To the extent that individual characteristics influence decisions, one should be better able to predict a judge's verdict than a jury's.

Another source of the greater perceived unpredictability of juries compared to judges is that jurors are widely presumed to rely on their intuitions, personal biases, and values. In contrast, judicial decision making is said to be characterized by a rational approach. However, judges are subject to many of the same psychological tendencies that influence laypeople. Nonetheless, because of their insider positions, judges may already possess or may be able to obtain information about typical trial outcomes and going rates in particular jurisdictions. This ability to gather comparative information about other

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cases might lessen the likelihood of judicial variability, especially compared to juries who are left in the dark about so many things, including the going rate for particular injuries and even whether the state imposes caps or other limits on damage awards.

Other features of jury trials might promote a sense of or actual uncertainty—the exact composition of the jury, who becomes the jury foreman or leader, whether the jury must render a unanimous verdict, and whether polarization or compromise will occur. The decisions of smaller juries should also be more difficult to predict than decisions of larger juries.10 Unlike criminal juries, which in most states and in federal trials consist of twelve persons who must reach a unanimous verdict, civil jury size and decision rules vary quite a bit from state to state. Smaller juries, and those that need only reach a majority decision, might be more unpredictable than larger unanimous decision-making bodies.11 From a theoretical perspective, the awards of smaller juries should be more variable than the awards reached by larger juries. The law of large numbers indicates that larger groups provide more reliable estimates of the population's judgments. Applied to jury awards, this suggests that the awards of larger juries should be easier to predict than the awards of smaller juries.12 The impact of jury size on actual jury awards has not been extensively studied, but a mock jury research project by James Davis and his colleagues found that the awards of six-person civil juries were larger and more variable than the awards of twelve-person civil juries.13 Thus, some states with particular jury configurations (for example, six-person non-unanimous juries) may experience greater variability in jury awards.

Finally, we also have to acknowledge that when a lawyer complains about the unpredictability of juries, he or she might not be talking about predictability at all. Instead, the lawyer might be saying that


12. See Waters, supra note 10, at 5.

juries are unfair and reach decisions against them all too often—in fact, all too predictably.

A. What Do We Know About Civil Jury Behavior and How Predictable Are Jury Verdicts and Jury Awards?

A rich and continually expanding literature has explored the determinants of civil jury verdicts and awards. A full presentation of this body of scholarship is not necessary here; it has been amply covered elsewhere. But in the context of the predictability of jury decisions, it is important to summarize the key findings of this body of work on civil jury decision making. Taken as a whole, the work reveals that there are substantial relationships between the strength of the trial evidence and jury verdicts, powerful linear relationships between the severity of a plaintiff's injury and the eventual jury damage award, and strong, predominantly linear (in logs) relationships between compensatory damage awards and punitive damage awards. Furthermore, when scholars have compared the decision making of juries, judges, and other decision makers, the overall patterns appear more similar than different. That is, the same models and similar key variables account for both judge and jury decision making. In one study, for example, Wissler and her colleagues compared judge, jury, and lawyer decision making about injury severity by presenting them with a large number of scenarios describing a broad range of personal injuries. They reached the following conclusion:

[T]he regression models suggest that different decisionmakers—people with different roles in the legal system, different experience with personal injury cases, and different demographic backgrounds—relied on the same injury attributes in similar ways and gave them similar relative weight when evaluating the severity of injuries. ... [A]ll of the regression models accounted for a large, and similar, proportion of variance in the decisionmakers' judgments of overall severity ... .


15. Hans & Albertson, supra note 14, at 1509–14 (summarizing findings of collected research on civil jury fact finding competence).

16. Id. at 1509.

17. Wissler, supra note 14, at 804.
Additionally, the decisions of judges and juries converge with decisions made by other experts such as doctors, claims adjusters, or arbitrators. All of this suggests that jury verdicts are generally predictable in the sense that we know what particular factors will lead to plaintiff verdicts and substantial compensatory and punitive damage awards.

At the same time, there are pockets of variability and inconsistency, particularly when it comes to predicting the dollar value of damage awards. In their study, Wissler and her colleagues found greater differences across groups of decision makers in recommended money damages. Furthermore, their regression models were better able to account for injury severity judgments than for recommended damage awards. In other work, Michael Saks has noted a broad pattern of vertical equity in jury awards (that is, more serious injuries that reliably result in greater awards), yet at the same time the persistence of some horizontal inequity (that is, injuries that are comparable but that receive differing awards). Although this apparent horizontal inequity could be evidence of jury unreliability, an alternative explanation is that even if one holds constant the overall severity of an injury, the actual impact on a plaintiff may vary greatly depending on the context and facts of the injury as well as the plaintiff's circumstances.

The fact that juries decide in groups in contrast to the individual decision of a judge might add to the stability of jury decision making—diverse jurors can combine their views and perspectives over what constitutes a fair and reasonable award for a particular injury. Some scholars argue that punitive damage awards in groups such as juries may become more variable through a process of polarization during group decision making, but that conclusion has been the subject of intense debate.

19. See id. at 783–96.
20. See id. at 808.
22. VDIMAR & HANS, supra note 14, at 299–300.
23. See, e.g., id. at 315–16.
B. Sources of Jury Unpredictability Judgments: An Empirical Analysis

Are perceptions of jury unpredictability reality-based? The existence of two sets of data—one that explores the business and insurance bar’s views about the predictability of juries and another that provides national data of civil jury trial outcomes across the states—offers an opportunity to examine some of the potential real-world sources of perceived jury predictability and unpredictability. The first set of data comes from the 2005 and 2006 U.S. Chamber of Commerce state liability systems ranking studies, conducted for the U.S. Chamber Institute for Legal Reform. The ranking studies reflect the views of business and insurance lawyers about state liability systems and include two questions on state court juries, one focused on juries’ predictability, and the other on juries’ fairness. The second data set is from the Civil Justice Survey commissioned by the National Center for State Courts (NCSC) in conjunction with the Bureau of Justice Statistics (BJS) for the calendar year 2005, which obtained data directly from state trial courts about the frequency and outcomes of jury trials. Our plan is to attempt to model the attorney ratings of the predictability of each state’s juries, using data on the number and outcomes of jury trials in the state as independent variables.

1. Chamber of Commerce State Liability Systems Ranking Studies: Methodology

The Chamber of Commerce’s Institute for Legal Reform state liability systems ranking studies have been conducted annually, and the survey approach and methodological details are fully described elsewhere. Therefore, we will only summarize the study methodology here, relying substantially on the Chamber’s own descriptions of its approach and focusing our methodological presentation on the central elements of interest for this project.


25. See id.


27. CHAMBER REPORT 2006, supra note 24, at 89; CHAMBER REPORT 2005, supra note 24, at 87; see also Theodore Eisenberg, U.S. Chamber of Commerce Liability Survey: Inaccurate, Unfair, and Bad for Business, 6 J. EMPIRICAL LEGAL STUD. 969 (2009).
The Chamber of Commerce surveys are conducted by the survey and market research firm Harris Interactive. The first step in each of the survey years considered here was to draw a representative sample of companies with annual revenues of at least $100 million, primarily relying on IdExec. In the 2006 survey, the IdExec source was supplemented by additional names drawn from Dun & Bradstreet and InfoUSA. A letter was mailed to the general counsel at each company, providing information about the study, informing them that an interviewer from Harris Interactive would be making contact and requesting their participation. To achieve high respondent participation, in addition to the alert letters, multiple telephone callbacks were made in order to reach the respondent and conduct the interview at a convenient time for the respondent.

For the 2005 report, 1,437 respondents participated, including 80 from insurance companies and the rest from public corporations in other industries. The proportion of interviews with insurance companies represents 6% of the total sample, which is the typical representation of insurance companies in the universe of companies with $100 million or more in annual revenues. The 2006 survey included 1,456 respondents, including 88 from insurance companies—again, 6% of the total sample. Respondents from the 2005 and 2006 surveys were experienced groups, with 18.7 and 19 years respectively of relevant legal experience including their jobs. Both 2005 and 2006 surveys were conducted employing Harris Interactive’s computer-assisted telephone interviewing system in which trained interviewers called respondents and immediately input responses into the computer for later analysis. For the 2005 report, the field dates were November 2004 to February 2005; the 2006 field dates were November 2005 to March 2006.

30. Id.
33. Id.
34. Chamber Report 2006, supra note 24, at 89.
37. Id. We could not locate response rates in either the Chamber Report 2005 or the Chamber Report 2006, so we cannot say what proportion of the total number of individuals who were initially contacted actually participated in the study.
38. Id.; Chamber Report 2005, supra note 24, at 85.
2. Chamber Surveys: Elements of State Court Liability Systems

Once a qualified respondent was identified, the respondent was first asked about his or her familiarity with a number of particular states and then asked to identify any other states with which the respondent was somewhat or very familiar. Respondents who were very or somewhat familiar with a state were given the opportunity to evaluate that state’s liability system. In 2005 and 2006, respondents could evaluate up to 15 states; on average they rated 5 states in 2005 and 6 states in 2006. In 2005, respondents were asked about their views of 10 elements of a state’s civil justice system, and an overall state grade was computed from these responses. In 2006, the Chamber added two new elements: noneconomic damages, and having and enforcing meaningful venue rules. The 2006 survey expanded the class action element to include “mass consolidation suits” in addition to class action litigation.

Respondents were first asked about a variety of aspects of the state court liability systems with which they were at least somewhat familiar, including such elements as venue requirements, punitive damages, and noneconomic damages. Next, they were asked about their views of juries with one item pertaining to “Juries’ Predictability” and a second item pertaining to “Juries’ Fairness.” The exact wording in both years was as follows:

Using the same scale, I’d like you to think now about the effectiveness of some key people who implement this system... How would you grade [state’s name, e.g. Delaware] on juries’ predictability... “A”, “B”, “C”, “D”, or “F”?... Again, an “A” means they are doing an excellent job at creating a fair and reasonable litigation environment” and an “F” means that they are doing “a failing job at creating a fair and reasonable environment.” How would you grade [state’s name, e.g. Delaware] on juries’ predictability?... “A”, “B”, “C”, “D”, or “F”? Similar questions about juries’ fairness, judges’ impartiality, and judges’ competence were also asked in this section, and the order of items was randomly determined.

The survey graded the elements on an “A” through “F” scale. In 2005, in translating the grades to numerical values, the Chamber as-

41. CHAMBER REPORT 2006, supra note 24, at 109; CHAMBER REPORT 2005, supra note 24, at 100.
42. CHAMBER REPORT 2005, supra note 24, at 100.
43. See id.
44. CHAMBER REPORT 2006, supra note 24, at 7; CHAMBER REPORT 2005, supra note 24, at 6.
signed 4 to an A, 3 to a B, 2 to a C, 1 to a D, and 0 to an F. In 2006, the Chamber changed the number associated with each grade, raising the highest number to 5 for an A and the lowest number to 1 for an F.

3. Civil Justice Survey of State Courts 2005

The Civil Justice Survey of State Courts is a periodic survey of the business of state courts, conducted jointly by the National Center for State Courts (NCSC) and the Bureau of Justice Statistics (BJS). The Civil Justice Survey collected data from state court clerks' offices on tort, contract, and real property cases disposed of by trial during 2005.

The study included state courts of general jurisdiction in a stratified sample of 46 of the 75 most populous counties in the United States. In addition, the 2005 survey included coverage of smaller counties, adding 110 counties to represent the 3,066 smaller counties not included in the study's group of the largest counties. The 2005 data included all completed trials in the studied counties.

The 2005 survey included an item asking whether punitive damages had been sought in each case. It is important to point out that the determination of whether punitive damages were sought was based on case file materials and not on whether the jury actually considered whether to award punitive damages to the plaintiff. Cases in which a punitive damage award was sought in the original or an amended complaint but later dismissed by summary judgment, for instance, would still be coded as cases in which punitive damages were sought.

The 2005 data include 8,872 trials of an estimated total of 27,128 in state courts in the United States in 2005, or 32.7% of total trials for that year. Based on the sample design, the trials from the 46 counties are estimated to represent 10,813 general bench and civil trials disposed of in the nation's 75 most populous counties.

45. CHAMBER REPORT 2005, supra note 24, at 6.
46. CHAMBER REPORT 2006, supra note 24, at 7. Perhaps just another example of grade inflation?
47. Langton & Cohen, supra note 26, at 11.
48. Id.
49. Id.
50. Id.
51. See id. at 6.
52. See Theodore Eisenberg et al., The Decision to Award Punitive Damages: An Empirical Study, 2 J. LEGAL ANALYSIS 577 (2010).
54. Id.
the 110 smaller counties are estimated to represent 16,315 general civil and bench trials from outside the nation's 75 most populous counties.\(^55\)

### III. Our Database

We developed a new database that combined results from each of the two projects. First, for the Chamber data, we included the mean responses to each rated element for each state in the 2005 and 2006 studies. Although the databases on which the Chamber reports are based have not been released to the public, the Chamber reports present detailed tables of results state by state, including average responses for those respondents who said they were at least somewhat familiar with the state.\(^56\) For example, in the 2005 report, the 128 attorneys who evaluated Delaware's civil justice system rated jury predictability as 3.7; in 2006, 108 attorneys' average rating was a 3.6.\(^57\) Delaware was ranked first in 2005 among the states on the dimension of jury predictability;\(^58\) in 2006 it dropped to fourth.\(^59\) The analyses below use the average response to the jury predictability item rather than the ranking and rather than the response to the item about jury fairness. The jury predictability item was highly correlated with the jury fairness item in both years (2005: \(r (50) = .955, p < .0001\); 2006: \(r (50) = .923, p < .0001\)). The lawyers' jury predictability ratings across years were also strongly correlated (see Table 1 below). Although we undertook many of the same analyses with the element of jury fairness, we do not report them here as they routinely overlapped with the jury predictability grade.

For the data on 2005 civil jury trials, we first narrowed the Civil Justice Survey of State Courts dataset to include only jury trials, excluding all of the trials decided by a judge. Juries decided 68% of the 26,948 general civil trials conducted in 2005.\(^60\) Because of interest in both large and small counties, we began with the full dataset with both large and small counties, but because of concern about the undue influence of extremely small numbers, we dropped data from any state that did not have at least 10 jury trials during the year 2005. That left us with a total of 30 states that reported at least 10 jury trials during

\(^{55}\) Id.  
\(^{56}\) See Chamber Report 2006, supra note 24, at 37–87; Chamber Report 2005, supra note 24, at 32–82.  
\(^{57}\) Chamber Report 2006, supra note 24, at 45; Chamber Report 2005, supra note 24, at 40.  
\(^{58}\) Chamber Report 2005, supra note 24, at 40.  
\(^{59}\) Chamber Report 2006, supra note 24, at 45.  
\(^{60}\) Langton & Cohen, supra note 26, at 2 tbl.1.
the year 2005. In the analyses that follow, the data are weighted using probability weights\(^6\) to account for the differential rate of sampling of large and small counties, as described above. The results do not materially differ if unweighted data are used.

For each state we calculated the following information: the number of jury trials during 2005; the plaintiff win rate in these jury trials; the number of non-zero compensatory damage awards; the means and standard errors of non-zero compensatory damage awards; the proportion of jury trials in which punitive damages were sought; the number of punitive damage awards; and the means and standard errors of punitive damage awards. We also included the maximum compensatory damage award and the maximum punitive damage award for each state. To obtain the cleanest measure of jury behavior, we used the unadjusted damage awards given by the jury before the judge applied any modifications to the award to adjust for plaintiff fault, insurance, state caps, or other reasons.

To examine patterns in awards data, it is often necessary to transform the awards so that one is able to perform sound analysis that allows a meaningful conclusion about the relationships between variables.\(^6\) One frequent problem is that awards are often skewed, violating assumptions of some common statistical models and obscuring relations among variables. Transformations can correct for skewness and other problems. For example, the employment of logarithmic transformations for compensatory and punitive damage awards in cases in which the punitive award is at least $100 million produces a more understandable relationship between the two.\(^6\)

Inspection of the distributions of the punitive and compensatory awards in the NCSC–BJS Civil Justice Survey showed that they suffered from skewness, as expected. Therefore, we performed logarithmic transformations on mean and maximum compensatory and punitive awards. These logarithmic transformations substantially improved the distributions for purposes of our statistical analyses.

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61. Probability weights are the reciprocal of the probability of an observation being in the sample and can be interpreted as the number of observations in the target population that are represented by each sampled observation. See Eric Vittinghoff et al., Regression Methods in Biostatistics: Linear, Logistic, Survival, and Repeated Measures Models 308 (2005). The weights in our analysis are computed using the information reported in Justice Survey, supra note 53, at 13.


63. Id. at 187. Eisenberg and Wells contrast the usefulness of a variety of statistical techniques for dealing with damage awards.
We added to the database information about state rules concerning civil jury size and civil jury decision requirements, relying on the State Court Organization report by the NCSC.\textsuperscript{64} Civil jury sizes in the studied counties were six, seven, eight, or twelve.\textsuperscript{65} Decision rules are the degree to which jurors must agree to support a verdict. The degrees of required agreement were two-thirds in one state, three-quarters in several states, five-sixths in several states, and unanimity in several states.\textsuperscript{66} When there were different jury sizes and decision rules for different types of cases (for example, smaller juries for cases with a potential value of less than $20,000 and larger juries for higher value cases), we used the rules that would apply to higher potential awards or to more serious cases. The reasoning behind this is that business and corporate counsel are typically more likely than other parties to participate in higher stakes litigation.\textsuperscript{67}

\textbf{A. Results}

A first look at the relationships between jury predictability judgments and jury trial outcomes is provided in Table 1 below, which displays the correlation coefficients for the attorneys’ predictability judgments and various measures of jury trial outcomes in the states. The correlation coefficient is a measure of linear association between two variables.\textsuperscript{68} The coefficient always takes on values between -1 and 1. Values near zero indicate the absence of a linear association; values between zero and 1 indicate a positive association between two variables; and values between zero and -1 indicate a negative association between two variables.\textsuperscript{69}

The table shows data from the states that were included in the NCSC–BJS Civil Justice State Survey and had at least 10 jury trials. The correlations are computed by taking the mean jury predictability rating from the Chamber Report 2005 or the Chamber Report 2006 for each of these states as one variable and comparing it with a variable representing trial characteristics—for example, the number of jury trials in the state in the 2005 data. The total number of states included in each of the correlation analyses varies by the type of jury outcome measure. Thirty states were included in calculations for the number of

\textsuperscript{65} Id.
\textsuperscript{66} See id.
\textsuperscript{67} See VALERIE P. HANS, BUSINESS ON TRIAL: THE CIVIL JURY AND CORPORATE RESPONSIBILITY 180 (2000).
\textsuperscript{68} See VITTINGHOFF ET AL., supra note 61, at 35.
\textsuperscript{69} Id.
trials, the plaintiff-win percentage, compensatory damage measures, and the proportion of jury trials in which punitive damages were sought. Because fewer than thirty states had one or more cases in the sample with punitive damages, the exact number of states included in calculations for other punitive damage measures was lower than thirty.

Table 1 shows that business and insurance attorneys' judgments of jury predictability are highly correlated for 2005 and 2006, with a correlation coefficient of 0.833, and also that the relationships between these judgments and jury trial outcomes are fairly consistent across the two years of the Chamber study. That is, the correlations are comparable whether one uses the 2005 Chamber results or the 2006 Chamber results.

Table 1 also shows that the number of civil jury trials (shown in the table's third numerical row) and the percentage of civil jury trials won by plaintiffs (shown in the fourth row) are not significantly related to the perceived predictability of state civil juries. As the number of civil jury trials in a state increases, the perceived predictability of juries in the state declines, but the relationship is not statistically significant (the probabilities are .11 for 2005 and .18 for 2006, higher than the probability of 0.05 often used as a cutoff for designating a relationship statistically significant). The plaintiff-win percentage goes in the opposite direction; as the win rate in jury trials increases, the jury predictability judgments also increase somewhat, although not significantly.

The relationships between compensatory damage variables and jury predictability grades are all negative. Lower attorney ratings of the predictability of juries in the state in 2005 and 2006 are associated with higher numbers of non-zero compensatory damage awards, larger average awards, greater standard errors, and larger maximum compensatory damage awards in the state. However, none of these relationships reaches a traditional level of statistical significance.

In contrast, most of the punitive damage variables are strongly and significantly correlated with the jury predictability judgments in 2005 and 2006. First, the proportion of jury trials in which punitive damages were sought in a state is significantly related to jury predictability grades in the state in both the 2005 and 2006 Chamber surveys. As for actual jury trial outcomes, the number of punitive damage awards, the average punitive damage award, and the maximum punitive damage award in each state are significantly linked to jury predictability.
Table 1: Correlations Between Business and Corporate Attorneys’ Jury Predictability Grades and State Jury Trial Outcomes

<table>
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<th>Jury predictability grades 2005</th>
<th>Jury predictability grades 2006</th>
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<tr>
<td>Jury predictability grades 2005</td>
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<tr>
<td>Jury predictability grades 2006</td>
<td>0.833</td>
<td>1</td>
</tr>
<tr>
<td>Number of jury trials 2005</td>
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<td>-0.252</td>
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<td>Plaintiff win percentage</td>
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<td>0.233</td>
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<tr>
<td>Number of non-zero compensatory awards</td>
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<td>-0.156</td>
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<tr>
<td>Compensatory damage awards (log) – Mean</td>
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<td>-0.225</td>
</tr>
<tr>
<td>Compensatory damage awards – Std. error</td>
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<td>-0.075</td>
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<tr>
<td>Maximum compensatory damage award (log)</td>
<td>-0.253</td>
<td>-0.184</td>
</tr>
<tr>
<td>Proportion of jury trials in which punitive damages sought</td>
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<td>-0.460</td>
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<tr>
<td>Number of punitive damage awards</td>
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<td>Punitive damage award (log) – Mean</td>
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<td>-0.639</td>
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<tr>
<td>Punitive damage award – Std. error</td>
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<tr>
<td>Maximum punitive damage award (log)</td>
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<td>-0.592</td>
</tr>
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<td>Jury size (6, 7, 8, or 12)</td>
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<td>Jury decision rule (.67 to 1.00)</td>
<td>-0.221</td>
<td>-0.036</td>
</tr>
</tbody>
</table>

Note: Correlations measure the relationships between business and corporate attorneys’ judgments about the predictability of juries within a state and various state jury trial measures. Correlations reported, other than those for the maximum compensatory damage award and jury size and decision rule, employ probability weights to reflect different sampling rates in large and small counties. Unweighted results do not differ materially from those reported in Table 1. Number of observations (which equals the number of states): 30 (those states with at least 10 jury trials in the sample) for the proportion of trials in which punitive damages were sought and for all variables not including some other aspect of punitive damages; 23 (those states with at least one punitive award in the sample) for punitive damage variables other than the mean and standard error; 19 (those states with at least two punitive awards in the sample) for the punitive damages mean and standard error. Correlations in bold are statistically significant at \( p < .05 \).

Sources: National Center for State Courts/Bureau of Justice Statistics Civil Justice Survey 2005; Chamber of Commerce 2005 & 2006 Reports.

grades in both the 2005 and 2006 Chamber surveys. The standard error of the mean punitive damage award—a measure of the variability in the estimate of the mean—trends in the same direction (with higher variability leading to lower grades for jury predictability), but the relationship is not statistically significant.

Finally, Table 1 shows that the state’s civil jury size is also linked to the attorneys’ jury predictability judgments in 2006. A similar but non-significant relationship is apparent in the 2005 survey. Recall that according to theory and prior research on jury decision making, larger juries should produce more reliable reflections of the true population mean. However, here we see the opposite of what one might expect.

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71. For a definition of the standard error of the mean, see, for example, Stata Base Reference Manual Release 11, at 270 (Statistical Software 2009).
Attorneys rate the predictability of juries in states that require larger juries as less, not more, predictable. The decision rule, or proportion of jurors required for a binding verdict, is unrelated to attorneys’ judgments of jury predictability.

IV. FURTHER ANALYSES OF THE RELATIONSHIP BETWEEN JURY PREDICTABILITY JUDGMENTS AND JURY TRIAL OUTCOMES

Because the punitive damage variables bore the strongest relationships to the jury predictability judgments, we performed necessary transformations and examined these relationships using scatter-plots and superimposed on the scatter-plots the best-fitting line for these data.72 The first two figures below show the relationship between the proportion of 2005 cases in each state in which punitive damages were sought and the attorney grades for jury predictability in the states in 2005 and 2006 respectively. The proportion data were first subjected to a square root transformation. Although there are some slight differences between the graphs for 2005 and 2006 judgments, one can observe the similar strong downward movement of the best-fitting lines in each one. As the proportion of cases in which punitive damages are sought in a state increases, the perceived predictability of juries in the state declines.

Figure 1: 2005 Jury Predictability Grade and the Proportion of Cases in Which Punitive Damages Are Sought in the State

72. The best-fitting lines were determined using locally weighted regression. See id. at 925.
We observe a similar relationship between the average jury punitive damage award in each state and the jury predictability judgments for that state (see Figures 3 and 4). As noted earlier, we use log 10 transformations of values for the punitive damage award analyses because of the skewness of the award data. Figures 3 and 4 below reveal that as the logged value of the average punitive damage award increases, attorney grades for jury predictability in the state decline. The same
general trend is found in both the 2005 and 2006 predictability judgments.

In contrast to these relatively strong relationships between attorneys’ jury predictability judgments and punitive damage measures, the graphs (not shown) plotting the relationship between jury predictability grades and compensatory damages measures are much flatter.73

One possibility that we wanted to explore is that especially high compensatory and punitive damage awards by civil juries in state courts are very salient and thus are likely to have a strong impact on attorney evaluations. Therefore, we examined whether the maximum compensatory and punitive damage awards in the states were linked to attorney judgments about jury predictability in the states (see Figure 5 below). The maximum punitive damage award lines for 2005 and 2006 have a pronounced downward decline, similar to the trends shown in Figures 1 through 4 displaying other punitive damage award measures. In contrast, the maximum compensatory damage awards, displayed in panels c and d of Figure 5, show basically flat lines with slight upticks or downticks at either end.

73. Compare the strong relationships between jury predictability judgments and punitive damage variables on the one hand, and the weaker relationships between jury predictability judgments and compensatory damage variables on the other. See supra tbl.1.

A. Regression Analysis

Table 1 and the above figures indicate that more than one variable is significantly associated with counsels' perceptions of jury predictability. This suggests employing multiple regression analyses to explore the influence of more than one variable on perceived predictability. Because we have relatively few observations, we limit the regression models to two explanatory variables and include as candidate variables only those that are statistically significant in Table 1 for the 2005 or 2006 Surveys. For counsels' perceptions of jury predictability in the 2005 Survey, the best two-variable model uses the rate at which punitive damages were sought and the maximum punitive damage award, but only the maximum award is statistically significant ($p < .001$). The model explains 53% of the variation in the dependent variable. For counsels' perceptions of jury predictability in

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74. Multiple linear regression is a statistical technique that quantifies the independent influence of several factors (independent variables) on the phenomenon being studied (dependent variable). See, e.g., VITTINGHOFF ET AL., supra note 61, at 72.
the 2006 Survey, the best two-variable model uses the maximum punitive damage award and the state's jury size as explanatory variables. Both explanatory variables are statistically significant at $p < .05$. The model explains 48% of the variation in the dependent variable.

V. DISCUSSION AND CONCLUSIONS

Our findings suggest that the phenomenon of punitive damages, as opposed to other dimensions of state court jury behavior, has captured the attention of the Chamber survey's business and insurance industry attorneys and dominates its jury predictability ratings. With the exception of the standard error of the mean punitive damage award, all the other punitive damage data, from the proportion of plaintiffs seeking punitive damages to the average punitive damage judgment, are significantly and strongly related to the judgments the attorneys make about the predictability of civil juries in the different states. The regression analyses revealed that the maximum punitive damage award in a state accounted for a substantial amount of the difference between attorneys' jury predictability grades across the different states.

It is remarkable that punitive damage awards bear the strongest relationship to jury predictability judgments. Punitive damages occur relatively infrequently in state jury trial cases. The NCSC–BJS Civil Justice Survey reports that punitive damages were sought in 13% of judge and jury civil trials with plaintiff winners in 2005 and that they were awarded in about 5% of plaintiff civil trial wins overall.75

Interestingly, Theodore Eisenberg's analysis of the Chamber of Commerce survey data confirms the important role of punitive damages on the overall rankings of the fifty states. The Chamber reports have routinely acknowledged that the evaluations of distinct elements of state civil justice systems are all highly correlated.76 In part, the methodology employed, in which the respondent is asked to offer grades for a number of elements sequentially with the same A to F scale, may promote similarity in responses across elements. Using the average attorney judgments for each dimension in each state, Eisenberg analyzed the judgments of all of the different elements evaluated

75. Langton & Cohen, supra note 26, at 6. An additional analysis limited to the nation's seventy-five most populous counties showed that punitive damages were awarded in jury trials in these counties about 5% of the time, a proportion that has not changed appreciably since the NCSC began collecting systematic data. Id. at 10 tbl.11.

76. CHAMBER STUDY 2006, supra note 24, at 9 n.1 ("All of the key element items were highly correlated with one another . . . "); CHAMBER STUDY 2005, supra note 24, at 7 n.1 ("All of the key element items were highly correlated with one another . . . ").
by attorneys in the 2008 Chamber survey, subsequent to the 2005 and 2006 surveys analyzed here. A factor analysis confirmed that a single latent factor was able to account for the attorneys' judgments of the state trial court systems. However, because attorney judgments about the fairness of each state's treatment of punitive damages varied more than most of the other elements, the punitive damage component probably contributed more to the overall grade and ranking of the states in the Chamber's 2008 survey.

The strong relationships found between jury predictability judgments and actual jury trial outcomes for punitive (but not compensatory) damages suggest that it is a major factor in the business and insurance industry bar's views of civil litigation in general and jury predictability more specifically. One possible explanation for the critical role of punitive damages in attorney judgments is that because of the infrequency of punitive damages—as well as their prominence in law, politics, and Chamber of Commerce advocacy efforts during the relevant time period—punitive damage awards have higher salience to these attorneys than other aspects of jury behavior, including the far more common compensatory damage awards reached by juries. It is well established that the more readily we can call an instance of a phenomenon to mind, the more frequent we assume that it is. The continuous, vigorous efforts by industry to modify state and federal law relating to punitive damages during the last decade, the omnipresent Exxon Valdez litigation as it wended its way through the state and federal appellate courts, and the U.S. Supreme Court's multiple and high profile punitive damage decisions during this time period all made punitive damages a highly visible issue for business and insurance. It thus makes sense that attorneys would focus on the extent to which state laws encouraged or forbade plaintiffs to seek punitive damages and would be more likely to notice state trial court jury determinations of punitive damages, particularly if they rendered large punitive damage awards.

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77. See generally Eisenberg, supra note 27, at 969.
78. Id.
81. In addition to the Exxon Valdez litigation, other important punitive damage decisions during the decade include State Farm v. Campbell, 538 U.S. 408 (2003), and Phillip Morris USA v. Williams, 549 U.S. 346 (2007).
The impact of jury size on attorney jury predictability judgments and the relationship between jury size and the variability in jury compensatory and punitive damage awards are topics that deserve further attention. From a theoretical perspective, the decisions of larger juries should be more predictable than the decisions of smaller juries. Nonetheless, attorneys were more apt to perceive greater jury unpredictability in the states with larger civil juries. It is possible that jury awards are more variable in these states, even when taking relevant factors into account, such as the type of case and the severity of injuries. It is also possible that these states and their jury systems differ along other key dimensions not included in our analyses. Further investigation of how jury size affects jury decision making about damages is warranted.