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**Highlight**

**ABSTRACT:** State trial judges from Texas, Michigan, Indiana, and Arizona were surveyed about their use of *court-appointed experts*. This article discusses the survey results concerning the types of experts most frequently appointed by judges in this sample and comparing their use by judge gender, docket (civil, criminal, family, and combined), and type of expert appointment (statutorily mandated or discretionary). Many judges reported either appointing their own experts or being willing to do so. Significant differences were found in type of docket, type of expert, and type of expert appointment. Judges' reasons for choosing or not choosing to appoint experts are discussed, as are comparisons with findings in the few other studies of this topic.

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**Text**

[371] Archimedes' famous shout of "Eureka!" as he ran from his bathtub to the streets of Syracuse is considered a classical literature example illustrating the connection between the worlds of law and science. 1️⃣ King Hiero had commissioned Archimedes to prove the guilt of the King's goldsmith who allegedly had defrauded the King by "adulterating the gold content of the crown." 2️⃣ Through the displacement of the water in his bathtub, Archimedes discovered [372] how to weigh the gold content of the King's crown. 3️⃣ Hence, a significant intersection occurred between the worlds of law and science.

Historically, courts have viewed science "as an indispensable ally in a shared project of truth-finding." 4️⃣ Today, though, fact finders, such as jurors, often perceive experts like Archimedes as well-paid "hired guns" who provide reports and testimony to combat opposing experts in a "battle of the experts" in our courtrooms. 5️⃣ It is within this atmosphere that justice and science must coexist.
The adversarial system of law in the United States provides the forum for opposing counsel to cross-examine experts on any biases, unreliable methodologies, or questionable conclusions. Many legal practitioners and scholars, such as law professors, believe that the integrity of the American courts is preserved through the cross-examination of these experts to ascertain the truth. This view is succinctly stated in the watershed Daubert v. Merrell Dow Pharmaceuticals, Inc. opinion by Justice Blackmun: "In this regard respondent seems to us to be overly pessimistic about the capabilities of the jury and of the adversary system generally. Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." Other scholars and practitioners believe that using court-appointed experts or special masters may better preserve the integrity of the court.

At times, juries may be unable to hold experts accountable because they cannot discern differences in the experts' testimony. In addition, when jurors are confronted with divergently opposed expert testimony, they may eliminate the testimony of both parties from their deliberation process. Jurors may become lost in the controversy created through the battle of the experts, even though, or perhaps because, the experts were cross-examined by opposing counsel.

Judges deciding pretrial motions also may have difficulty evaluating the reliability of the methodologies utilized by experts. Even judges accustomed to expert testimony may lack the knowledge to evaluate the science or technology on which experts' opinions are based. According to A Judge's Deskbook on the Basic Philosophies and Methods of Science, "[i]ndeed, current practice and training of the judiciary may not sufficiently prepare them to perform the role of scientific evaluator." Moreover, the Carnegie Commission on Science, Technology, and Government has reported:

Critics have objected that judges cannot make appropriate decisions because they lack technical training, that jurors do not comprehend the complexity of the evidence they are supposed to analyze, and that the expert witnesses on whom the system relies are mercenaries whose biased testimony frequently produces erroneous and inconsistent determinations.

There is a sense of urgency to this need for judges to make appropriate decisions. "If these claims go unanswered, or are not dealt with, confidence in the judiciary will be undermined as the public becomes convinced that the courts as now constituted are incapable of correctly resolving some of the most pressing legal issues of our day." These concerns give rise to the question of what
judges should do when unprepared for dealing with scientific and technological experts and for evaluating the methodology underlying the conclusions formulated by the experts.

Although the tradition-bound adversarial court system in the United States permits the parties to select their own experts, the Federal Rule of Evidence (FRE) 706 and state equivalents also permit state and federal judges to appoint their own experts. "Only a few states [have] adopted Rule 706 verbatim." Other states have abbreviated the language of FRE 706. For instance, Pennsylvania's Rule 706 reads:

Where the court has appointed an expert witness, the witness appointed shall advise the parties of the witness' findings, if any. The witness may be called to testify by the court or any party. The witness shall be subject to cross-examination by each party, including a party calling the witness. In civil cases, the witness' deposition may be taken by any party.

[374] This judicial authority has a lengthy history in federal and state courts. U.S. Supreme Court Justice Breyer stated in his concurring opinion in General Electric Co. v. Joiner that "judges are not scientists and do not have the scientific training that can facilitate the making of such decisions." He further stated:

[A] judge could better fulfill this gatekeeper function if he or she had help from scientists. Judges should be strongly encouraged to make greater use of their inherent authority . . . to appoint experts . . . . Reputable experts could be recommended to courts by established scientific organizations, such as the National Academy of Sciences or the American Association for the Advancement of Science.

He concluded:

Given this kind of offer of cooperative effort, from the scientific to the legal community, and given the various Rules-authorized methods for facilitating the courts' task, it seems to me that Daubert's gatekeeping requirement will not prove inordinately difficult to implement, and that [using court-appointed experts] will help secure the basic objectives of the Federal Rules of Evidence, which are, to repeat, the ascertainment of truth and the just determination of proceedings.

Nevertheless, some authors have argued for a variety of reasons that Rule 706 experts interfere with the adversarial process. For example, Senior Judge William Schwarzer stated, "In my
experience, the parties, who know more about the case than the judge or the outside experts, are in the best position to prepare and present their cases." According to Judge Schwarzer, the jury will give more veracity and credibility to the court-appointed expert, thereby prejudicing one of the parties. He cautioned, "Even if the expert does not testify but merely consults with the judge in the process of arriving at decisions, communicating privately without the consent of the parties, the adversarial process becomes skewed." Among the concerns expressed by both federal and state trial judges are the lack of knowledge about available experts, fear of usurping the jury's fact-finding prerogative, and reluctance to be perceived as intervening in proceedings rather than allowing the parties to bring their own experts. These concerns are discussed below.

[375] I. LITERATURE REVIEW

Relatively few studies have addressed the judiciary's use of court-appointed experts. Cecil and Willging conducted a survey of the federal judiciary, sponsored by the Federal Judicial Center, to investigate the extent to which federal trial court judges utilized their power under FRE 706. The survey found that "much of the uneasiness with court-appointed experts arises from the difficulty in accommodating such experts in a court system that values, and generally anticipates, adversarial presentation of evidence." They concluded that, although appointment of experts may be viewed by federal judges as a departure from the adversarial process, these appointments were not made by judges who lacked faith in the adversarial process. It was only after the litigants exhausted options to gain vital information for the court to resolve the litigants' dispute that judges resorted to appointing their own experts, although this rarely occurred at the federal level. Cecil and Willging also found that parties rarely suggested appointing an expert and typically did not participate in the nomination of appointed experts. Compensation for an expert often deterred an appointment, especially when one of the parties was indigent.

Cecil and Willging found that federal judges reported little difficulty in identifying persons to serve as court-appointed experts, largely because of the judges' willingness to use personal and professional relationships to aid in the recruitment process. Ex parte communication between judges and court-appointed experts occurred frequently, usually with the consent of the parties. The opportunity to appoint an expert was often hindered, however, by federal judges' failure to recognize the need for such assistance until the eve of trial.

This study also revealed court-appointed experts provided testimony or reports that "exert[ed] a strong influence on the outcome of litigation." Judges reported that "[i]n a dozen jury cases,
it appears that the testimony of court-appointed experts dominated the proceedings. The court-appointed experts' testimony, however, generally would affirm "the testimony of one of the parties' experts," whereby evidence to the contrary was overcome. Cecil and Willing found that juries tended to decide the case along the lines of the court-appointed expert, in some cases finding for the plaintiff and in other cases finding for the defense.

Cecil and Willing's research was replicated with very similar results in a sample of 325 state trial judges. Many judges in this study reported that the practice of appointing experts should become more common for a number of reasons, which include clarifying opposing testimony of experts, responding to biased experts of the parties, and assisting "the court in new and emerging areas of science." Those who opposed the practice reported that the cost to the courts, the added confusion caused by a third expert, and the courts' interference with "the development or presentation of evidence" were problematic.

Another group of researchers conducted a focus group study of family court judges in Dallas and Fort Worth, Texas. The generalizability of this study is limited because of Texas's unique practice of using juries in family law cases, the small number of judges, lawyers, and experts who participated, and the small number of custody cases conducted on a yearly basis. The study did reveal, however, two compelling reasons for using court-appointed experts in family cases. These were the need to avoid the harm an adversarial system can have on children and the need to have an expert evaluate all of the parties to provide the judge with a reliable, comparative assessment of the parties. In this sample of family court judges, it was revealed that the use of court-appointed experts could encourage case settlement, although attorneys generally disfavored the use of court-appointed experts because they felt that they "lose control" of the process.

While participants in the focus group study reported that the use of court-appointed experts may not reduce costs if the parties choose to hire their own experts, both judges and attorneys had a favorable impression of court-appointed experts. Among the positive aspects of using court-appointed experts were that the experts have an aura of neutrality, there are no barriers to the appointment of neutral experts, and there are few downsides to such appointments. Court-appointed experts were thought to have more complete information on which to base their opinions because they have access to all of the parties. Also, expert witnesses themselves prefer to be court-appointed, finding this role more appealing as professionals.

[377] Although the trends identified in these three studies indicate there may be some
circumstances in which many judges feel the use of court-appointed experts is acceptable, the studies lack in-depth knowledge about current opinions and practices of state trial court judges following the Daubert trilogy. Cecil and Willging's research was conducted with federal judges before the Daubert decision. The state trial judge data are pre-Kumho Tire Co. v. Carmichael, and the focus group study by Champagne and colleagues has limited generalizability. The research reported in this paper adds to the present body of knowledge by presenting findings from a mail survey of state trial judges from Michigan, Texas, Indiana, and Arizona about their views and practices concerning court-appointed experts in state trial courts. Our research focused on a number of relevant questions concerning the use of these experts and builds on the previous research just discussed.

II. SAMPLE POPULATION SELECTION

A mail survey was sent to 400 state trial judges from Michigan, Arizona, Texas, and Indiana to investigate the extent to which state trial judges make use of their authority to appoint experts and to identify some of the factors these judges consider in appointing experts in various types of cases. These four states were selected specifically because their standards for admitting scientific evidence and other testimony differ with respect to the extent of influence of the Daubert trilogy. This group of Supreme Court cases includes Daubert, Joiner, and Kumho Tire.

A. Texas Sample

Texas is a Daubert state, according to the Supreme Court of Texas in E.I. du Pont de Nemours & Co. v. Robinson, and has accepted "the full holdings of the Daubert trilogy." The state also is known as a "Daubert and Kelly" [378] jurisdiction. This refers to Kelly v. State, a Texas Court of Criminal Appeals case involving the admissibility of scientific evidence.

B. Indiana Sample

Indiana views Daubert as instructive or "helpful, but not controlling" for admitting evidence, but specifically rejects Kumho Tire's holding that the level of scrutiny required by Daubert applies to nonscientific expert testimony. Indiana Rule of Evidence 702(b) is unlike the "pre-2000 Federal Rules of Evidence" in that the courts do not admit expert scientific evidence until "the court is satisfied that the scientific principles upon which the expert testimony rests are reliable."

C. Arizona Sample

Arizona rejected the Daubert decision, preferring to adhere to the Frye v. United States
"general acceptance" test. In State v. Bible, the Supreme Court of Arizona reviewed the admissibility standard for DNA testing and reaffirmed Frye as precedent in Arizona. In Logerquist v. McVey, however, the trial court held that Daubert's validity test and Frye's general acceptance test were "inapplicable when a witness reaches a conclusion by inductive reasoning based on their own experience, observation, or research." A narrower reading of the holding is that testimony based on such sources of knowledge is admissible only when the proffered witness is offering mental health expert testimony.

[379] D. Michigan Sample

Michigan is a Frye state. It applies the Davis-Frye test to admit expert evidence, which is based on Michigan's precedential case in this area of the law, People v. Davis. The Davis court relied heavily on the scientific and technological writings of recognized experts to hold that the reliability of the proffered type of evidence (polygraph) had not yet reached a level of general acceptability in the relevant scientific community.

III. SURVEY INSTRUMENT

The survey instrument consisted of a combination of open-ended and close-ended questions. Development of the questions and coding categories was informed by the responses from a small exploratory survey of Pennsylvania trial judges performed in 2000 by Domitrovich, as well as from the survey work performed by Cecil and Willging. The instrument was designed to collect a variety of information, such as the size of each judge's jurisdiction, as well as the judge's gender, age, and length of time on the bench.

Information also was gathered about each judge's educational background in science, attitudes about the acceptability and accessibility of court-appointed experts, views on the quality of experts' presentations and reports, and extent of confidence in court-appointed and privately retained experts. Judges were asked to estimate the number of experts they appointed, both pursuant to statute and by their own discretion, and to describe the circumstances for making these appointments. Finally, judges were asked their opinions about the possible costs and benefits of appointing experts.

[380] IV. PROCEDURES

Samples of judges were drawn randomly from the complete lists of all trial judges furnished by the judicial education organizations in each of the four states. A total sample of 440 was drawn from
the four states, with 110 judges from each state, based on an expected response rate of 50% and the planned use of ten from each state to pilot the instrument. Generally following the procedures outlined by Dobbin, et al., selected judges were mailed a survey packet containing a personalized letter of introduction, the survey instrument, and a preaddressed return envelope with the postage paid. The letter set a deadline for their responses and explained the steps taken to ensure confidentiality. It also included contact information for the researchers, the research site, and the Office of Human Subjects Research. A second, follow-up survey packet was sent a few weeks later.

Three trained coders were used to accommodate coding, check coding, and check-code verification of the responses obtained. This three-step procedure is recommended to increase the reliability of data obtained from qualitative data. Qualitative data are first examined to identify themes that emerge from the discourse. Codes are developed by assigning numerical values to these themes. These codes are then applied by coders to the qualitative data so that the data can be analyzed using statistical procedures. Coded surveys then were given to a second coder who check coded the surveys. The check coding procedure is used to help ensure that the coding scheme has been properly applied by the initial coder. Check coders identify possible discrepancies or inaccurate applications of codes. In the final step of the coding procedure, check code verifiers examine the possible discrepancies identified by the check coders, and then determine whether either the original coder or the check coder has properly interpreted the qualitative data. The check code verifier's decision determines which code should be used. Inter-coder reliability was computed for each variable in the data set and was found to be satisfactory.

[381] V. RESULTS

One hundred eighty-three judges completed and returned the survey. Nine surveys, however, were returned after analyses were completed, leaving 174 survey responses included in our analysis. Forty were from Texas, thirty-five were from Michigan, fifty-seven were from Indiana, and forty-two were from Arizona.

Replies were received from forty-five female judges and 128 male judges. One judge did not report gender. The number of years on the bench ranged from one to thirty-two ($M = 11.53$, $SD = 7.72$), with the mean number of years on the bench higher for males ($M = 12.40$, $SD = 8.22$) than for females ($M = 8.98$, $SD = 5.29$). Thirty-eight judges (27 male, 11 female) reported they presided primarily over criminal matters; sixty-nine judges (48 male, 21 female) presided primarily over civil matters; twenty-five judges (19 male, 6 female) presided primarily over juvenile or family court matters; and thirty-eight judges (34 male, 4 female) reported that their docket was a combination
of matters. In addition to the one judge who did not report gender and was excluded from these totals, three judges did not report the matters over which they primarily presided.

VI. OVERALL RESPONSES TO KEY QUESTIONS

The following selection of descriptive results is based on the responses of all 174 respondents. The judges were asked to indicate whether, given the choice, they would prefer receiving expert testimony or reports from court-appointed experts or from privately retained experts. We report only those responses made by more than one judge, so are basing the numbers below on these 162 responses.

- 54% of the judges (87) reported that it depended on the circumstances.
- 38% of the judges (61) indicated that they would prefer to receive information from court-appointed experts.
- [382] 4% of the judges (11) responded that they would prefer to receive expert reports or expert testimony from privately retained experts.
- 2% of the judges (3) indicated that they had no preference.
- 2% of the judges’ (3) responses did not fall into any of these categories.

The judges were then asked about the specific benefits of using court-appointed experts. All 174 judges responded to this question as follows:

- 66% (114) of judges responded in terms of the objectivity or fairness of the court-appointed expert's testimony. For example, court-appointed experts were not "hired guns," were more objective and fair to both sides, or were less influenced by the parties.
- 14% (25) indicated that the evidence provided by court-appointed experts was of better quality (for example, more accurate, more concise, more focused on relevant issues) than that provided by privately retained experts.
- 19% (33) felt that court-appointed experts were more trustworthy or reliable (for example, the court had more confidence in the testimony, court-appointed experts were more credible, more reliable) than privately retained experts.
- 1% of the judges' responses (2) did not fall into any of these categories.

When we asked judges to describe the perceived problems with using court-appointed experts, the most frequent response was the cost of court-appointed experts, with the following cost concerns:
- 23% of the judges (40) responded that the court lacked money to pay for such experts.
- 14% (24) responded that good experts are expensive and will not work for what the court can pay.
- 6% (11) stated that allocation of the expert's cost was problematic.

**VII. EXPERT TESTIMONY AND TYPE OF EXPERT APPOINTMENT**

In the sample of 174 respondents, judges reported presiding over a total of 16,492 cases in the past year containing scientific, technical, or other specialized evidence. Of these, 11,639 cases contained at least one proffer of expert testimony, and in 12.5% (1,454) of these cases, at least one expert was appointed by the judge. Of the 1,460 total appointments, 46% (665) of the appointments made by judges were mandated by statute, and 55% (795) were made at the judges' discretion.

Several tables on the following pages will further break down the respondents' information concerning *court-appointed experts*. Table 1 presents the ten most frequently occurring areas of expert testimony reported by the judges. Table 2 presents information about judges' willingness to appoint their own experts in the ten most frequently mentioned areas of expertise. The numbers in the "Have Appointed" column represent the number of judges who have appointed at least one expert in that field and the percentage of judges in the [383] sample that this number represents. In the "Would Appoint" column, the numbers refer to those judges who had not appointed experts in that area, but who were willing to appoint an expert if needed. The numbers in the "Would Not Appoint" column refer to those judges who reported that they neither have nor would appoint their own expert in that area. Table 3 presents the number of judges who have appointed these various types of experts according to docket, while Table 4 presents the number of discretionary and mandatory appointments made by type of docket.

**Table 1. Ten Most Frequently Reported Areas of Expert Testimony Seen by Judges (N=174)**

<table>
<thead>
<tr>
<th>Type of Testimony</th>
<th>Cases/Year*</th>
<th>Type of Testimony</th>
<th>Cases/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology-Psychiatry</td>
<td>4652 (29%)</td>
<td>Sociological</td>
<td>1220 (8%)</td>
</tr>
<tr>
<td>Medical-Health Care</td>
<td>3226 (20%)</td>
<td>Pharmacology</td>
<td>656 (4%)</td>
</tr>
<tr>
<td>Chemistry</td>
<td>2125 (13%)</td>
<td>Statistics</td>
<td>608 (4%)</td>
</tr>
<tr>
<td>Toxicology</td>
<td>1538 (10%)</td>
<td>Engineering-Physics</td>
<td>433 (3%)</td>
</tr>
</tbody>
</table>
*Case percentages are based on the sum of cases from the ten areas reported in the table (16,056 cases).

**Table 2. Judges’ Willingness to Use Court-Appointed Experts in the Ten Most Frequently Occurring Evidence Types (N = 171)**

<table>
<thead>
<tr>
<th>Evidence Type</th>
<th>Have Appointed</th>
<th>Would Appoint</th>
<th>Would Not Appoint</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Psychological-Psychiatric</td>
<td>114</td>
<td>66.7</td>
<td>32</td>
</tr>
<tr>
<td>Medical-Health Care</td>
<td>34</td>
<td>19.9</td>
<td>46</td>
</tr>
<tr>
<td>Chemistry</td>
<td>7</td>
<td>4.1</td>
<td>37</td>
</tr>
<tr>
<td>Toxicology</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Economic</td>
<td>13</td>
<td>7.6</td>
<td>44</td>
</tr>
<tr>
<td>Sociological</td>
<td>24</td>
<td>14.1</td>
<td>25</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>18</td>
<td>10.5</td>
<td>43</td>
</tr>
<tr>
<td>Statistics</td>
<td>5</td>
<td>3</td>
<td>38</td>
</tr>
<tr>
<td>Engineering-Physics</td>
<td>5</td>
<td>3</td>
<td>40</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>3</td>
<td>1.8</td>
<td>30</td>
</tr>
</tbody>
</table>

**Table 3. Number of Judges Using Court-Appointed Experts by Evidence Type and Docket (N = 171)**

<table>
<thead>
<tr>
<th>Docket Type of Testimony</th>
<th>Civil</th>
<th>Criminal</th>
<th>Family</th>
<th>Combined</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology-Psychiatry</td>
<td>20</td>
<td>49</td>
<td>20</td>
<td>23</td>
<td>112</td>
</tr>
<tr>
<td>Medical-Health Care</td>
<td>3</td>
<td>13</td>
<td>7</td>
<td>9</td>
<td>32</td>
</tr>
<tr>
<td>Chemistry</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Toxicology</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Economic</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Sociology</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>2</td>
<td>11</td>
<td>2</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Statistics</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Engineering-Physics</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

**Table 4. Number of Discretionary and Mandated Expert Appointments by Docket**

<table>
<thead>
<tr>
<th>Docket Type of Appointment</th>
<th>Civil</th>
<th>Criminal</th>
<th>Family</th>
<th>Combined</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discretionary</td>
<td>41</td>
<td>371</td>
<td>196</td>
<td>132</td>
<td>740</td>
</tr>
<tr>
<td>Mandated</td>
<td>70</td>
<td>268</td>
<td>301</td>
<td>56</td>
<td>695</td>
</tr>
<tr>
<td>Total</td>
<td>111</td>
<td>639</td>
<td>497</td>
<td>188</td>
<td>1435*</td>
</tr>
</tbody>
</table>

*Based on the ten most frequently occurring types of expert.

An exploratory two-way 4 (docket) x 2 (gender) univariate factorial analysis of covariance (ANCOVA) was conducted to investigate the differences in the number of discretionary experts appointed by judges. ANCOVA is a statistical test that increases the power of a statistical design by reducing the amount of unexplained variability in an ANOVA design. \[79\] This is accomplished by including continuous covariates, which removes differences between participants so that the majority of differences that remain are due to the effects of the grouping variables. \[80\] ANCOVA was an appropriate statistic in this case because these several covariates are related to the dependent variable. Held constant were the type of expert, such as medical, statistics, or psychology-psychiatric, the number of years the judge had been on the bench, and the extent of the judge’s science education. The results of these analyses must be interpreted with extreme caution because of the small cell sizes at some levels \[385\] of the independent variables, but the results still yield useful information about possible trends in the use of court-appointed experts. Square root transformations of the dependent variable and expert type independent variables were used for all analyses. Table 5 presents the ANCOVA Summary Table for this analysis.

Three covariates, psychology-psychiatric expert, statistics expert, and chemistry expert, significantly influenced the number of discretionary experts appointed by the judge \(F (1, 91) = 37.58, p < .001, \text{partial } n^2 = .292; F (1, 91) = 3.97, p < .049, \text{partial } n^2 = .042; \text{and } F (1,
91) = 4.97, p < .028, partial \( n<2> = .052 \), respectively). The relationships for psychology-psychiatric experts and statistics were in a positive direction, while the relationship for chemistry experts was in a negative direction. After significant corrections were made by the covariates, the overall model was significant \((F(19, 91) = 4.22, p < .001, \text{partial } n<2> = .468)\).

The interaction between docket and judge gender was not significant \((F(3, 91) = 2.18, p = .096, ns)\). The main effect for docket was significant \((F(3, 91) = 6.00, p < .001, \text{partial } n<2> = .166)\), but there was no main effect for judge gender \((F(1, 91) = 1.41, p = .238, ns)\).

The calculated-effect size for each nonsignificant factor indicated that a small amount of the variance in the number of discretionary appointments made by the judge was accounted for by these factors. Pairwise comparisons demonstrated that the mean number of discretionary appointments by the judge was significantly higher for judges who heard family issues \((p < .005)\) than for judges who heard civil, criminal, or combined dockets. Table 6 presents the means and standard deviations for discretionary expert appointments by docket and gender.

A second exploratory two-way 4 (docket) x 2 (gender) univariate factorial ANCOVA was conducted to investigate the differences in the number of mandatory experts appointed by judges, holding constant the same list of covariates described above. Square root transformations of the dependent variable and expert type independent variables were used for all analyses.

Three covariates, psychology-psychiatric expert, chemistry expert, and extent of science education, significantly influenced the number of mandatory experts appointed by the judge \((F(1, 91) = 9.95, p < .002, \text{partial } n<2> = .099; F(1, 91) = 6.73, p < .011, \text{partial } n<2> = .069; \text{and } F(1, 91) = 3.99, p < .049, \text{partial } n<2> = .042, \text{respectively})\). After significant corrections were made by the covariates, the overall model was significant \((F(19, 91) = 2.679, p < .001, \text{partial } n<2> = .359)\). No significant interaction effect or main effects were found for docket and judge gender, however.

[386] Table 5. Analysis of Covariance of Number of Discretionary Expert Appointments as a Function of Docket Type and Judge Gender, with Evidence Type, Number of Years on the Bench, and Extent of Science Education as Covariates \((n = 111)\)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>w2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
<td>1</td>
<td>5.17</td>
<td>5.17</td>
<td>2.10</td>
<td>0.30</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>1</td>
<td>1.38</td>
<td>1.38</td>
<td>0.56</td>
<td>0.12</td>
</tr>
</tbody>
</table>
Statistics 1 9.80 9.80 3.97* 0.51
Engineering 1 0.26 0.26 0.11 0.06
Epidemiology 1 0.11 0.01 0.01 0.05
Sociology 1 2.35 2.35 0.95 0.16
Toxicology 1 2.43 2.43 0.99 0.17
Psychology-Psychiatric 1 92.72 92.72 37.58*** 1.00
Chemistry 1 12.26 12.26 4.97* 0.60
Economics 1 2.21 2.21 0.89 0.16
# Years on Bench 1 0.58 0.58 0.23 0.08
Extent of Science Education 1 3.48 5.88 2.38 0.33
Gender 1 44.43 3.48 1.41 0.22
Docket 3 16.14 14.81 6.00*** 0.95
Gender X Docket 3 16.14 5.38 2.18 0.54
Error 91 224.51 2.47
Total 111 655.00

*p < .05. ***p < .001.

Table 6. Mean Number of Discretionary Expert Appointments by Judge Gender and Docket (n = 111)

<table>
<thead>
<tr>
<th>Judge Gender</th>
<th>Male M</th>
<th>Female M</th>
<th>Male SD</th>
<th>Female SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Docket</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil</td>
<td>1.04</td>
<td>0.95</td>
<td>0.60</td>
<td>0.61</td>
</tr>
<tr>
<td>Criminal</td>
<td>1.16</td>
<td>2.02</td>
<td>1.52</td>
<td>1.98</td>
</tr>
<tr>
<td>Family</td>
<td>2.20</td>
<td>1.95</td>
<td>4.78</td>
<td>3.64</td>
</tr>
<tr>
<td>Combined</td>
<td>1.13</td>
<td>1.66</td>
<td>0.80</td>
<td>1.96</td>
</tr>
</tbody>
</table>

[387] VIII. JUDGES’ USE OF COURT-APPOINTED EXPERTS

Judges were asked about their combined mandatory and discretionary appointments of experts according to type of evidence. Specifically, judges were asked: (1) whether they had ever appointed an expert for each type of evidence; and (2) whether they would ever appoint an expert
for each type of evidence if the need arose. Table 2 presents judges’ responses by type of
evidence. The greatest number of judges (66.7%) reported appointing psychological-psychiatric
experts, followed by medical-health care experts (19.9%), sociologists (14.1%), pharmacology
experts (10.5%), and economic experts (7.6%).

With the exception of those judges who had appointed psychological or psychiatric experts, a
smaller number of judges reported that they had appointed their own experts than would appoint
their own experts if needed. The majority of judges, however, reported that they would not appoint
their own experts across evidence type (see Table 2).

Judges in criminal courts reported most frequently across evidence types (95 times) that they had
appointed their own experts, followed by judges with combined dockets (50 times). Judges in
family courts reported they had appointed their own experts slightly more often than judges in civil
courts (39 times versus 34 times), but overall there were very few differences in appointments
according to evidence type.

Table 4 presents the number of discretionary and mandated court-appointed experts according
to docket. The greatest number of discretionary appointments (371) were made by judges hearing
criminal cases, while judges hearing civil cases made the fewest discretionary appointments (41).
Judges hearing family cases made the greatest number of mandatory appointments (301), while
those whose dockets were combined made the fewest (56).

The results of this study may be affected somewhat by possible selection bias and small numbers in
some cells of the analyses. Also, judges who were more positive toward court-appointed
experts, and who had made expert appointments, may have been more prone to respond to our
mail survey. Those possibilities notwithstanding, however, we believe the results of this study
indicate that discretionary appointments of experts may be occurring more frequently than
commonly believed. This finding could be an indication of a cultural shift in the readiness of judges
to make use of their authority to appoint experts on their own motion. More than half the
appointments made by judges in our sample were discretionary. The number of appointments
varied according to type of docket and type of expert, but was unrelated to number of years on the
bench, the extent of the judge's science education, or the judge's gender.

[388] The appointments made may be due in part to the kinds of dockets to which the judges are
appointed or the kinds of cases they hear. The largest number of judges in our sample reported
that the bulk of discretionary appointments of psychological-psychiatric experts are made in
criminal cases. These experts are most likely appointed for the purpose of competency determinations.

Family court judges also made a large number of discretionary appointments, which encompassed a greater variety of expertise. For example, appraisal experts could be appointed to evaluate the holdings of a divorcing couple; psychological-psychiatric experts might be appointed during custody proceedings; and experts with knowledge in social work might be called upon to determine whether or not a child should be returned to the parents' home.

Civil court judges appointed the fewest experts, but did report appointing psychological-psychiatric, sociological, economic, and medical or health care experts. This finding could indicate a greater tendency to defer to the adversarial system in civil matters, or it may be that judges in civil proceedings appoint fewer experts because of the less extreme consequences to the parties in civil litigation. For example, judges who preside over matters in which a person may be deprived of liberty or life, or who decide the fate of minor children, may find these circumstances compelling enough to discretionarily appoint an expert, while many tort issues may seem less compelling. We found that judges who heard criminal and combined dockets appointed more toxicology experts than did judges who heard other types of cases, suggesting that these experts are used in DUI, homicide, or drug proceedings. We also found that many of the judges in our sample who had not yet appointed an expert indicated they would consider appointing their own experts if the case circumstances were appropriate. These findings concerning the different types of experts most frequently appointed support the idea that type of docket is an important factor in such decisions.

Dobbin and colleagues found that about half of the 325 state trial judges surveyed in their sample believed that the practice of appointing experts should become more common. Our findings are consistent with those of Dobbin et al. and may indicate that judges are becoming more willing to act on such a belief. Thirty-seven percent of the judges who responded in our study indicated unequivocally that they would prefer to receive testimony or reports from court-appointed experts, compared with only seven percent of judges who would prefer to receive such information from privately retained experts. Many of the judges in this sample indicated that court-appointed experts are likely to be more objective or fair, and less influenced by the parties, than privately retained experts. Many judges believed that court-appointed experts could save both the courts and litigants time and money.

[389] Despite these beliefs, many judges hesitate to appoint their own experts. The most frequently stated reason for this hesitancy was the cost to the courts and parties of making such
appointments. Judges also may have been concerned about procedural fairness, as some mentioned both positive and negative aspects of fairness when responding to questions about the appointment of experts. Additionally, judges were concerned about bias in expert testimony from privately retained experts, but many also had concerns about bias from court-appointed experts. Judges' concerns about the litigants' perceptions of procedural fairness, the possibility that court-appointed experts might overshadow the testimony of privately retained experts, and the costs to courts and litigants of appointing experts weighed against their willingness to appoint.. This was the case despite judges' feelings that the testimony of court-appointed experts might be less biased.

The greatest objections judges had concerning the use of court-appointed experts were external to their perceptions of the inherent value and quality of court-appointed experts. Thus, more judges might use court-appointed experts if funds were made available to support this practice. Such funding might be an investment in reducing the expenditure of other court resources, such as the time spent by court personnel or the length of litigation. This also might save the resources of attorneys and litigants by reducing the length of time in trial, the need for lengthy depositions, and other litigation-related expenses.

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Footnotes


2 COHEN ET AL., supra note 1, at viii-ix; LAW AND THE SOCIAL ROLE OF SCIENCE, supra note 1, at 136.

3 COHEN ET AL., supra note 1, at ix; LAW AND THE SOCIAL ROLE OF SCIENCE, supra note 1, at 136.


Id. at 596.


Id.


CARNEGIE COMM’N ON SCI., TECH., AND GOV’T, supra note 12, at 11.
15 Id.

16 FED. R. EVID. 706(a).

17 RALPH SLOVENKO, PSYCHIATRY IN LAW/LAW IN PSYCHIATRY 72 n.55 (2d ed. 2009).

18 Id.


21 Id. at 148 (Breyer, J., concurring).

22 Id. at 149-50 (quoting Brief for New England Journal of Medicine et al. as Amici Curiae at 18-19).

23 Id. at 150.


25 Id.

26 Id.


28 Id. at 530.
Id.

30 Id. at 540-42.

31 Id. at 530.

32 Id.

33 Id.

34 Id.

35 Id.

36 Id.


38 Id.

39 Id. at 1041-45.

40 Dobbin et al., supra note 12, at 12.

41 Id.

42 Id.

43 Anthony Champagne et al., Are Court-Appointed Experts the Solution to the Problem

44\textsuperscript{7} Id. at 180.

45\textsuperscript{7} Id. at 180, 182.

46\textsuperscript{7} Id. at 182-83.

47\textsuperscript{7} Id. at 183.

48\textsuperscript{7} Id. at 180, 183.

49\textsuperscript{7} Id. at 183.

50\textsuperscript{7} Id. at 180-81.

51\textsuperscript{7} Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993). This decision dramatically changed the way that trial judges are supposed to assess expert evidence. Judges could no longer rely on a "general acceptance" criterion, but were forced to assess the quality of the evidence itself, adopting more of a "gatekeeper" role.

52\textsuperscript{7} Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999). This case extended the gatekeeper function of the court to all expert testimony.

53\textsuperscript{7} Champagne et al., supra note 43.

54\textsuperscript{7} David E. Bernstein & Jeffrey D. Jackson, The Daubert Trilogy in the States, 44 JURIMETRICS J. 351, 351-56 (2004). The four states were selected as part of a preliminary effort to test the efficacy of the "admissibility regime" concept that was being developed by David Faigman, and which eventually was described in David L. Faigman, Admissibility Regimes: The "Opinion Rule" and Other Oddities and Exceptions to Scientific Evidence, the Scientific Revolution, and Common Sense, 36 SW. U. L. REV. 699 (2008). The scheme, however, did not reveal differences that were expected, possibly because of the relatively small number of responding judges in each state or the choice of states. The concept awaits a more thorough test using larger samples of judges or cases, and perhaps different states.

E.I. du Pont de Nemours & Co. v. Robinson, 923 S.W.2d 549, 556 (Tex. 1995).

Bernstein & Jackson, supra note 54, at 357.

E.I. du Pont de Nemours & Co., 923 S.W.2d at 556.

Kelly v. State, 824 S.W.2d 568, 573 (Tex. Crim. App. 1992) ("The court may require the proponent of evidence developed through an accepted scientific theory to demonstrate the reliability of the method used to arrive at the test result.").

Bernstein & Jackson, supra note 54, at 362 (quoting McGrew v. State, 682 N.E.2d 1289, 1290 (Ind. 1997)).

Id. at 362 n.88 (quoting IND. R. EVID. 702(b) (West 2003)).

Frye v. United States, 293 F. 1013 (D.C. Cir. 1923). The Frye court's decision would become the future test for discerning the line between experimental and demonstrable stages for scientific principles or discoveries. "Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs." Id. at 1014.

1 DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE § 1:7, at 20 n.8 (2009).


Id. at 1181-83.

Loggerquist v. McVey, 1 P.3d 113 (Ariz. 2000).
67 Id. at 133.

68 See PSYCHOLOGICAL SCIENCE IN THE COURTROOM: CONSENSUS AND CONTROVERSY 17-18 (Jennifer L. Skeem et al. eds., 2009) and Faigman, supra note 54, at 709-12, for a thorough critique of the Logerquist decision.

69 1 FAIGMAN ET AL., supra note 63, § 1:7, at 20 n.8.

70 People v. Davis, 72 N.W.2d 269 (Mich. 1955).

71 Id. at 281-82.

72 The findings concerning Pennsylvania state trial judges' utilization of court-appointed experts were consistent with those reported by Cecil and Willging's research. Stephanie Domitrovich, Pa.R.E. 706 and F.R.E. 706: Whether Court-Appointed Experts are Utilized Similarly or Differently by Pennsylvania State Trial Court Judges and Federal Court Judges 4, 27-28, 37-39 (June 30, 2003) (unpublished manuscript, on file with author). This exploratory study revealed that although many Pennsylvania judges agreed that court-appointed experts are valuable in providing nonbiased, impartial, and independent opinions that serve a very important role in the judges' decision making, in many instances the judges reported that they were reluctant to exercise their power to appoint their own experts. Id. at 37-39. Among the findings of this exploratory, descriptive study, judges reported that experts that are court appointed and experts that are privately retained do not differ in terms of their formal education, presentation style, or experience. Id. at 30-37. The majority of respondents believed that both privately retained experts and court-appointed experts were trustworthy, although they stressed the importance of impartiality of the court-appointed expert. Id. at 39-49.


74 See Ole R. Holsti, Content Analysis, in 2 THE HANDBOOK OF SOCIAL PSYCHOLOGY 657-59 (Gardner Lindzey & Elliot Aronson eds., 2d ed. 1968).

75 See id. at 658.
See id.

See id.

The response rate is calculated by dividing the number of surveys returned by the number of surveys mailed (183/400=.457). According to DON A. DILLMAN, MAIL AND TELEPHONE SURVEYS: THE TOTAL DESIGN METHOD 21 (1978), a 50% response rate was "a level once considered quite acceptable for mail surveys." The "cooperation rate" is an adjusted return rate that takes into consideration several factors. For example, in our survey, judges who were retired, had died, had been removed from the bench, or were no longer eligible to participate (n = 14) were considered "out of frame elements." Judges who were unable to participate because of medical issues or conflicts with their case loads (n = 5) were considered "not available." Judges with whom contact was attempted but no direct contact was made (n = 174) were considered nonresponses. Judges who were contacted and declined to participate (n = 24) were considered refusals. After subtracting the number of nonresponses (174), out-of-frame elements (14), and the number of judges who were not available (5), the number of eligible respondents contacted was 207. Cooperation rate is then calculated by dividing the number of returns by the number of eligible respondents contacted (183/207=.884).


Id.

Dobbin et al., supra note 12, at 12.

See generally Mara L. Merlino et al., Justice in the Eyes of the Beholder: State Trial Judges' Views About the Use of Court-Appointed Experts (May 28, 2009) (presented at Law and Society annual meeting, Denver, CO) (unpublished PowerPoint presentation on file with author), for a fuller report of procedural justice concerns expressed by judges in this research. This presentation is being prepared for publication.