Expert Witness Advocacy

Changing Its Culture

BY STEVEN FEOLA & RICHARD A. ALCORN

Q: Is that your conclusion that this man is a malingerer?

A: I wouldn't be testifying if I didn't think so, unless I was on the other side, then it would be a post traumatic condition.

—Medical expert testimony in *Ladner v. Higgins*, 71 So.2d 242, 244 (La. Ct. App. 1954)

A substantial increase in the use of expert testimony has been observed by Arizona civil and criminal litigators during the past two decades. More than 35 experts were designated as potential witnesses in a single construction defect case in 2007 in the Maricopa County Superior Court.[1] Nationally, the expert services industry recently was estimated to generate approximately $6 billion to $8 billion in annual revenue.[2] The 2007 gross revenues of LECG (a global expert services company) alone were reported to be more than $370 million.[3] Several expert services companies (LECG, Navigant, Huron Group, and FT Consulting) are publicly traded.

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The expanding use of experts in civil and criminal litigation focuses attention on the troublesome and important issue of expert witness advocacy and partisanship. Several potential substantive and procedural changes are suggested in this article to alter the "litigation culture" that appears to be the source of much of the advocacy and lack of objectivity in Arizona expert witness testimony.

What Causes Adversarial Bias?

Adversarial bias among expert witnesses comes in varying shapes and sizes, including deliberate advocacy and unconscious partisanship, as well as selection bias.

"In theory, despite the fact that one party retained and paid for the services of an expert witness, expert witnesses are supposed to testify impartially in the sphere of their expertise," observed one federal circuit court.[4]

- Deliberate advocacy occurs when an expert intentionally or knowingly tailors the evidence to support a client's arguments.[5]
- Unconscious partisanship is unintentional and usually results from situational factors or biases that cause the expert to provide evidence to advocate the client's positions.
- Selection bias, as the label suggests, results from the reality under the current procedures that trial lawyers invariably will be motivated to select persons as their witnesses whose views are known or presumed to support their case.
- Another form of expert bias is "hindsight bias" or "outcome bias"—the tendency of an expert equipped with knowledge of an outcome to overstate his or her ability to predict the inevitability of the outcome.[6]

In practice, of course, all of these forms of adversarial bias may simultaneously occur in varying measures in a single litigation matter.[7]

Numerous factors appear to cause or contribute to the problem of expert witness advocacy:

- Short-term economic incentives (substantial fees earned for giving reports and testifying)
- Long-term economic incentives (the prospect of repeat business or referrals—the expert's livelihood)
- Lawyer pressures to render a favorable opinion[8]
- "Forensic countertransference" (the expert's identification with and/or admiration of the lawyer contaminates the expert's objectivity)[9]
- Expert witness narcissism (the "will to win"; flattery; exhibitionism; narcissistic excitement; solidarity with client and lawyer—subtle pressure to be "a part of the team")[10]
- Professional rapport and solidarity where an expert is asked to express a view adverse to a professional colleague[11]
- Professional peer pressure (ranging from rapport with peers to possible professional disciplinary sanctions relating to the expert's testimony)[12]
- Commonality of insurance with the adverse party, the adverse expert or the client[13]
- The expert's *weltanschauung* (the expert's personal history and professional experience—the way the expert conceives the universe and humanity's relation to it).

In most cases, a combination of these factors creates a rich environment to encourage and even stimulate advocacy by expert witnesses.

Lawyer pressure appears to be a significant causal factor in potentially undermining expert witness objectivity. As an advocate, the trial lawyer by definition must be partisan—it is fully appropriate for the trial lawyer to attempt to persuade the expert of the validity of his client's position. Yet lawyers also at times use a variety of means to attempt to unduly influence an expert's opinion.

Studies and surveys of experts suggest lawyers use at least three primary tactics to unduly exert pressure on experts:

- Withholding relevant forensic information
- "Partisan seduction"—the use of personal or social incentives to influence the expert to embrace the lawyer's position (such as a direct or implied promise of future work if the expert's opinion is favorable in the case at hand)[14]
- Direct or indirect threats intended to coerce a favorable opinion

In a 2001 study, 49 percent of the responding experts said lawyers had withheld relevant data from them; 35 percent reported attempts at "partisan seduction" to unduly influence their opinions. Surprisingly, 19 percent reported having experienced the actual use of threats by lawyers to influence their opinions.[15] Lawyer pressure unquestionably appears to be a meaningful factor that could contaminate an expert's objectivity.

Is Adversarial Bias a Problem?

Expert witness evidence can essentially fail in two principal manners: lack of scientific reliability or validity, and lack of "objectivity"—advocacy, bias or partisanship.

The United States Supreme Court's decisions in *Daubert, Joiner* and *Kuhmo* appear to have improved the scientific quality and reliability of expert witness evidence.[16] Since those directive decisions approximately a decade ago, the admissibility of expert witness testimony is subjected to heightened scrutiny and screening as federal and state trial courts perform an evidentiary "gatekeeper" function for expert evidence. Enhancing the quality and validity of expert evidence also may indirectly and positively affect the objectivity of expert evidence. Decidedly, however, such quality and validity improvements do not eliminate all of the factors and pressures that cause impartiality in expert evidence.[17]

The second problem with expert evidence—the perception of a lack of objectivity (partisanship and advocacy) in such evidence—is nothing new, of course. Legal literature and case authorities for more than a century have contained almost a constant stream of criticism that experts too often become "hired guns" or "mouthpieces" for their respective sides, rather than providing independent and objective scientific information to the trier-of-fact.[18] An English law official in 1856 remarked, "I abhor the traffic in testimony to which I regret to say men of science sometimes permit themselves to condescend."[19] In 1858, a Justice of the U.S. Supreme Court commented, "Experience has shown that opposite opinions of persons professing to be experts may be obtained to any amount … wasting the time and wearying the patience of both court and jury, and perplexing, instead of elucidating, the questions involved."[20] A Midwest court in 1899 noted, "[S]killed witnesses come with such a bias in their minds that hardly any weight should be given to their evidence."[21] A legal commentator in 1897 observed that "bias" was "proba-

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bly the most frequent complaint of all against the expert witness."[22]

Although for more than a century expert witness bias and advocacy have been perceived as serious defects of expert evidence, the problems nevertheless have been allowed to persist.

In a significant 2002 study by the Federal Judicial Center, judges and attorneys agreed that, in addition to the expense of experts, the most important problems with expert evidence stem from adversarial bias and/or advocacy by experts.[23] Both judges and lawyers complained:

- Experts too often abandon objectivity and become advocates for the side that hires them.
- The expense associated with expert evidence is excessive.
- The conflict among the experts' testimony often defies reasoned explanation.

Many of the judges and lawyers observed that these problems actually increased and had gotten worse since *Daubert* was decided in 1993.

Most significant, according to the Federal Judicial Center study, advocacy by experts and excessive expert expense appear to be "institutionalized" problems within the judicial system.[24] Judges and lawyers cited expert advocacy and excessive expense as being "frequent" in both 1991 (pre-*Daubert*) and again in 1998/99 (post-*Daubert*). In the 1998/99 survey, judges and lawyers "underscored the salience of the problem with expert advocacy and expense." Many responding judges and lawyers in the 1998/99 survey thought that the frequency of problems with expert advocacy and expense actually had increased during the five years preceding the survey.

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Much of the evidence regarding expert witness advocacy and bias unfortunately is subjective and anecdotal rather than empirical. In addition, of course, there is no universally agreed-upon model of "objectivity" for expert witness testimony. How are we to determine whether an expert is merely advocating the expert's opinion or whether the expert has crossed the line and is advocating a client's position? It therefore is difficult to quantify the precise extent to which expert witness advocacy or lack of objectivity constitutes a problem in Arizona's trial courts. Yet, rare is the trial judge or seasoned litigator who is not of the view that expert witness advocacy and bias too frequently are encountered in Arizona trial proceedings.

The harsh reality—understandable given the trial lawyer's partisan role—is that a lawyer advocating a client's cause often selects and hires the expert with the most effective and persuasive courtroom manner rather than the expert who is most objective, technically competent and reliable. Experts also typically are chosen based on their professional history of advocating opinions for a certain side or displaying a certain bias or viewpoint in similar litigation matters. As one commentator notes, "[T]he whole point is precisely to find a 'qualified witness' who will be scientifically committed to your side."[25] As the late Melvin Belli once quipped regarding the selection of experts, "If I got myself an impartial witness, I'd think I was wasting my money."[26]

The frequent, and quite predictable, upshot of this selection process and the partisan role of expert testimony within the adversarial process is bias and advocacy by each of the experts for their respective "side." The extent to which the experts advocate for their respective clients is not always symmetrical, however, which results in the serious danger that judges and juries may render verdicts and potentially award damages based on asymmetrical biased expert testimony.[27] A conflict often emerges between the experts' evidence that defies reasoned explanation. "The summoning of expert witnesses by plaintiff and defendant, like the collision of opposing rays of light, ends only in darkness," as aptly described by one commentator in an 1872 legal journal.[27]

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No one will deny that the law should in some way effectively use expert knowledge wherever it will aid in settling disputes. The only question is how it can do so best.

—Judge Learned Hand, 1901[29]

Any meaningful reform to reduce expert advocacy requires more than mere cosmetic modifications to certain court rules or procedures. Significant and extended changes must occur to remove or modify structural and/or cultural elements that cause or contribute to adversarial bias in expert evidence.

The Zlaket rules, as an example, transformed the adversarial paradigm for civil discovery in Arizona courts. Recent Arizona court cases also emphatically reaffirm the paramount duty of lawyers to the legal system vis-à-vis their client obligations. Revisions to the Arizona Rules of Professional Conduct in 2003 now require that Arizona lawyers act "honorably" at all times. This procedural and ethical remodeling was intended to and unquestionably has significantly reshaped the adversarial culture in which Arizona lawyers practice.

Similar reforms are required to shift the litigation paradigm that created the current culture of expert advocacy and partisanship. Substantive and procedural changes are needed to realign the actual and perceived duties and role of expert witnesses within the litigation dispute resolution process, and to modify the circumstances and manner in which parties are permitted to use expert evidence.

In the traditional common law paradigm of civil litigation, the parties exercised primary control regarding matters such as the pace of the litigation and the use (and occasional abuse) of discovery procedures. The court functioned somewhat as a referee. Expert witness evidence in many cases unfortunately became simply another means to advocate the client's cause—a tool misused

by some litigants to gain strategic advantage over opponents.

Modern common law systems use greatly increased court involvement and substantial case management, however, somewhat akin to the inquisitorial paradigm of civil law systems. Courts now routinely take an expanded and proactive role in managing lawsuits, including limited management of the parties' use of expert witness evidence.

Changes in the use of expert evidence are a natural, if not inevitable, progression in the overall process of reforming and improving those "legal practices and procedures that encourage unnecessarily adversarial proceedings in and out of the courtroom."[30] Several changes merit serious consideration to remove or diminish institutional or structural elements in the court rules and procedures that presently appear to stimulate adversarial bias and lack of objectivity by expert witnesses.

Reducing Expert Adversarial Bias

Expert advocacy and partisanship certainly are not problems unique to Arizona courts. These issues exist in state and federal courts throughout the United States, as well as in other common law countries, including England, Australia and New Zealand.

Approximately a decade ago, the legal systems in those other countries adopted significant procedural reforms designed to reduce adversarial advocacy and partisanship in expert witness testimony. The so-called "Woolf reforms"[31] were implemented in the courts of England and Wales in 1998, followed by similar expert evidence reforms in other common law jurisdictions such as Australia and New Zealand. These reforms completely revamped the substantive and procedural role of expert evidence within the legal systems in those countries.

The efficacy of some of these reforms unquestionably remains subject to debate. A decade of experience with the changes does suggest, however, that several reforms notably were successful in reducing advocacy, partisanship and bias in expert evidence.[32] Most barristers and other legal professionals gradually have expressed general satisfaction with the reforms, according to many jurists and legal commentators. Although unquestionably progressive—some would say radical—several of these potential changes do warrant serious consideration by the Arizona courts and lawyers.

Expert's Paramount Duty to Court

A universal feature of the expert witness reforms in these other common law systems is to clearly and formally establish in the court rules that experts have a paramount duty to the court rather than to the lawyer or client who retained the expert. Court rules, and explanatory "codes of conduct" within those rules, also expressly delineate and require that experts are to be completely impartial and objective—experts specifically are instructed that they are not to act as an advocate for a party.[33]

To this end, an expert is required to make full disclosure of all matters relevant to the expert's report or evidence, even if adverse to the client or hiring lawyer. In addition, expert witnesses are required to express opinions only within their area of expert knowledge. Experts also independently (without the client's or lawyer's consent) may seek direction directly from the court regarding their evidence.

> Some cases may benefit from allowing the concurrent presentation of expert evidence—"hot tubbing" the experts.

The practical goal is to procedurally redefine the expert's role in the litigation process to encourage what the courts seek—an independent, impartial educator rather than another advocate for a party. An ancillary yet very important benefit of such rules and codes is that expert witnesses are formally "freed" from external demands and potential influences on the expert's opinions. Theoretically, being primarily subject to a duty to the court, the expert is able to formulate independent opinions with the required degree of care and diligence, free from undue efforts by the client or the lawyer to prejudice or "prime" the expert's opinions.

Critics of obliging experts to a paramount duty to the court contend the imposition of such an explicit duty will not and does not, as a practical matter, appreciably alter the existing practices regarding expert evidence. Those critics observe that experts already are required to testify under an oath or affirmation to "tell the whole truth." Given the difficulty in imposing sanctions against experts where no clear, agreed-upon model of "objectivity" exists, these critics also argue it is optimistic (perhaps even naive) to expect the imposition of an additional obligation to the court to produce manifest changes in expert witness behavior.[34]

However, adopting specific rules clearly defining the expert's independent role vis-à-vis the parties and the litigation process unquestionably would underscore the expert's obligation to be impartial. The normative benefit of such expert evidence procedures thus could be substantial, notwithstanding potential difficulties relating to enforcement.

Consultation Among Experts

The court may direct experts to hold pretrial conferences among themselves—*with or without the lawyers*—to potentially narrow the areas of dispute and to resolve potential differences in the expert opinion evidence.[35] In addition, experts have direct access to the court to obtain instructions regarding the conference(s), to seek clarification from the court regarding its conferencing instructions, or to obtain additional directions from the court.

The experts typically prepare a written joint expert report to the

court reflecting any area in which the experts have reached agreement, as well as identifying and explaining any issues that remain disputed and the reasons for the disagreement. Although the joint written report typically is not binding on the parties (unless they agree to be bound), the conferencing process nevertheless has proven valuable in structuring and streamlining expert opinion testimony.

The conferencing process also is a practical reaffirmation of the overriding duty of the expert to the court, trumping any obligation owed to the lawyer who retained the expert or to the client paying the fees. The court generally instructs the experts that they are to avoid acting upon any instruction from a lawyer or client to withhold agreement when attending a conference of experts. And conferencing would require that the experts be exposed to and that they carefully consider all material facts, including potentially detrimental facts. Issues that are beyond the scope of the expertise also may be identified for the court, the lawyers and the parties.

"Hot Tubbing"/Concurrent Evidence

Some cases may benefit from allowing the concurrent presentation of expert evidence, or "hot tubbing" the experts.[36] Under this procedure, all of the expert witnesses regarding a particular issue are sworn and give testimony at the same time. The desired outcome is more of a sworn, structured professional discussion among peers in the relevant field as opposed to the confusion that often results from sequential, adversarial cross-examination of experts.

Hot-tub presentation of expert opinion evidence typically has several features:

- Expert testimony is given after all factual evidence relevant to the issues in dispute.
- Each expert is sworn sequentially and is required to reaffirm or to modify opinions rendered earlier in light of the evidence actually adduced at trial.
- Each expert is permitted to give a statement of his or her opinion(s) on the issues in dispute (allowing the experts to express opinions in their own words, rather than being confined to questioning by advocates).
- Each expert is allowed to give opinions regarding the opinions offered by the other experts.
- Each expert may be cross-examined.
- Any expert giving opinion evidence is permitted to ask questions of the other experts.
- The court may request that an expert or experts clarify their opinion evidence after cross-examination (thus avoiding the confusion and distortion that often results from adversarial cross-examination).

The concurrent testimony is focused, structured and controlled by the court.

Tribunals using this procedure in other common law jurisdictions identify several benefits from their experience in hot-tubbing the expert witnesses:

- Expert witnesses—not being confined to the constraints of traditional cross-examination—are more effective in clearly communicating their opinion.
- Substantial savings of time and expenses are realized to experts, lawyers, parties and judges.
- Any potential salutary effects of peer pressure will be realized in the "hot tub" testimonial discussion.
- The key questions and areas of agreement and disagreement are identified promptly and discussed in a more constructive manner than is usually experienced under traditional cross-examination.
- Expert witnesses tend to state their opinions in a more frank and reasonable manner, displaying more of a willingness to make concessions than might be the case under traditional cross-examination.
- Experts are permitted to ask and must answer questions directly from their professional colleagues.
- Experts are removed from an advocacy role and instead present testimony in a structured, professional discussion among peers regarding the questions at issue.

Whether these benefits will be realized in a particular case will depend on factors such as the complexity of the case and whether the judge is skilled and/or trained in controlling and structuring the hot-tub testimony/discussion.[37]

Single Joint Expert

In England, the courts have authority to direct that a single joint expert give testimony in appropriate cases. The use of a single joint expert is the norm rather than the exception.[38] The parties are permitted to select the joint expert, but, if they are unable to do so, the court will select the expert from a list prepared by the parties or by other means. Where a potential range of expert opinions reasonably may exist, the expert must describe that range and explain the specific reasons for his or her own opinion.

Typically, a single joint expert might be appropriate where the sums involved are not substantial (for example, less than $100,000) and the issues are not relatively complex. Other instances where the use of a single joint expert might be appropriate would include where expert evidence is required to inform the court regarding matters of expert *fact* (as opposed to expert *opinion*), or where the primary issue in dispute is liability only.

The use of a single joint expert generally is deemed not appropriate where the claims at issue are significant or the issues are complex. Where the outcome of the matter most likely will turn on expert opinion evidence, the courts continue to acknowledge that the parties generally should be permitted to retain and to instruct their own experts (although each expert nevertheless has a paramount and overriding duty to the court). Whether a single expert is appropriate will in substantial measure hinge on the amount at stake, the nature and complexity of the issue, and whether the appointment of a single expert would facilitate overall justice to the parties in the context of the specific litigation.

Conclusion

It would be naive to think or believe that Arizona trial lawyers would enthusiastically embrace these types of expert evidence reforms. Lawyers as a group, and most particularly trial lawyers, historically have been and generally are opposed to any diminution of their "control"—whether actual or merely perceived—

over the procedures by which evidence is gathered and presented for their clients' causes. Legal procedures that are less lawyer-centered and adversarial perhaps understandably may be expected to find substantial disfavor and opposition among trial lawyers.

However, the problems of expert witness expense and advocacy by expert witnesses are significant, and unquestionably they deserve more considered examination by the Arizona courts and trial lawyers. Continuing to avoid these important problems with expert evidence ultimately promises to undermine the integrity and efficacy of Arizona's justice system.

endnotes

1. *Abbett et al. v. Terravita Corp. et al.*, Maricopa County Superior Court, No. CV 2005-000616.
2. Barry Schlachter, *Expert Witness Industry Booming,* Dallas–Fort Worth Star-Telegram.com, May 13, 2006, *available at* www.dfw.com/mld/dfw/14573869.htm.
3. *LECG Corporation Reports Fourth Quarter 2007 Results,* MARKETWISE, Feb. 12, 2008, *available at* www.marketwise.com.
4. *Kirk v. Raymark Indus. Inc.*, 61 F.3d 147, 163-64 (3d Cir. 1995), *cert. denied,* 116 S. Ct. 1015 (1996).
5. Courts may disregard expert testimony on the basis of partisanship, advocacy or bias. *Pop v. Yarborough,* 354 F. Supp.2d 1132, 1140-41 (C.D. Cal. 2005) (expert testified as an "advocate," and partisanship is a valid reason to disregard expert's testimony); *Dennis ex rel. Butko v. Budge,* 378 F.3d 880, 905 (9th Cir. 2004) (bias in expert's evidence may be grounds for rejecting even uncontradicted expert testimony).
6. H. W. LeBourgeois III *et al., Hindsight Bias Among Psychiatrists,* 35 J. AM. ACAD. PSYCH. L. 67 (2007).
7. *See generally* New South Wales Law Reform Commission Report ("*Commission Report*"), Report 109 (2005), *"Minimising Expert Witness Bias," "Reform Measures–General Considerations,"* available at www.lawlink.nsw.gov.au/lrc; David E. Bernstein, *Expert Witnesses, Adversarial Bias and the (Partial) Failure of the* Daubert *Revolution,* 93 IOWA L. REV. 101, 104-06 (2008).
8. Thomas G. Guthiel *et al., Withholding, Seducing and Threatening: A Pilot Study of Further Attorney Pressures on Expert Witnesses,* 29 J. AM. ACAD. PSYCHIATRIC L. 336 (2001).
9. *Id.* at 338.
10. Thomas G. Guthiel & Robert I. Simon, *Narcissistic Dimensions of Expert Witness Practice,* 33 J. AM. ACAD. PSYCHIATRIC L. 55 (2005).
11. Thomas G. Guthiel, Diane H. Schetky & Robert I. Simon, *Pejorative Testimony About Opposing Experts and Colleagues "Fouling One's Own Nest,"* 34 J. AM. ACAD. PSYCHIATRIC L. 26 (2006).
12. The ethics guidelines of several professional and technical organizations prescribe that experts testify honestly and strive for objectivity in their testimony. Disciplinary proceedings and sanctions are possible for demonstrable instances of a member providing "junk science" testimony. Such professional self-regulation and peer review of expert testimony has been encouraged by the courts. *Austin v. American Ass'n of Neurological Surgeons,* 253 F.3d 967, 973-74 (7th Cir. 2001) ("More policing of expert witnessing is required, not less"). *See also* Joseph Sanders, *Expert Witness Ethics,* 76 FORDHAM L. REV. 1539 (2007).
13. Maggie C. Bednar, *Medical Expert Witness Bias Due to Commonality of Insurance*, 23 J. LEGAL MED. 403-19 (2002).
14. Guthiel *et al.*, *supra* note 8, at 337. *See also* the commentary of ASU professor Michael J. Saks, *Accuracy v. Advocacy: The Dilemmas of Expert Witnesses in an Adversary System* , 90 TECH. REV. 42, 43-44 (August 1987) ("The influence of the lawyer is considerable. … The attorney expects help and cooperation from experts, who know that the lawyer could hire someone else. The question is how far [the experts] are willing to be drawn out onto the forensic limb.").
15. Guthiel *et al.*, *supra* note 8, at 337-38.
16. *Daubert v. Merrell Dow Pharm. Inc.*, 509 U.S. 579 (1993), *on remand,* 43 F.3d 1311 (9th Cir.), *cert. denied,* 116 S. Ct. 189 (1995); *General Elec. Co. v. Joiner,* 552 U.S. 136 (1997); *Kuhmo Tire Co. v. Carmichael,* 524 U.S. 936 (1998).
17. *See* Jiang Yun-wei, *Controlling Dishonesty of Expert Witnesses,* 4 U.S.–CHINA L. REV. 65 (May 2007) (market mechanisms, cross-examination and perjury are ineffective to control expert witness bias and advocacy).
18. *See* David H. Kaye, David E. Bernstein & Jennifer Mnookin, *Expert Evidence,* THE NEW WIGMORE, A TREATISE ON EVIDENCE, Ch. 10, at 329-46 (2005). This treatise by ASU law professor David Kaye and his colleagues is an exceptional research resource for expert witness issues.
19. Attorney General Sir Alexander Cockburn's observation regarding conflicting medical testimony following a celebrated poisoning trial, *quoted in* TAL GOLAN, LAWS OF MEN AND NATURE: THE HISTORY OF SCIENTIFIC EXPERT TESTIMONY IN ENGLAND AND AMERICA (2004).
20. *Winans v. New York & Erie R.R.*, 62 U.S. 88, 101 (1858).
21. *Baxter v. Chicago R. Co.*, 80 N.W. 644, 653 (1899).
22. William L. Foster, *Expert Testimony–Prevalent Complaints and Proposed Remedies,* 11 HARV. L. REV. 169, 171 (1897).
23. Carol Krafka *et al.*(Federal Judicial Center), *Judge and Attorney Experiences, Practices and Concerns Regarding Expert Testimony in Federal Civil Trials,* 8 PSYCHOL., PUB. POL'Y & L. 309-32 (2002). *See also* Edward K. Cheng, *Same Old, Same Old: Scientific Evidence Past and Present,* 104 MICH. L. REV. 1387, 1392 (2005-2006) ("That the problems surrounding adversarial experts have stayed with us for over two hundred years should be entirely unremarkable. The methods of presenting expert knowledge are fundamentally the same today as they were in 1783, and the system's structure breeds these pathologies. If anything, the system's attributes have gotten worse.").
24. *Id.*
25. MARCIA ANGELL, SCIENCE ON TRIAL: THE CLASH OF MEDICAL EVIDENCE AND THE LAW IN THE BREAST IMPLANT CASE 118 (1996).
26. PETER W. HUBER, GALILEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM 18 (1991).
27. Jonathan Tomlin & David Cooper, *The Importance of Unbiased Expert Testimony* (May 3, 2006), *available at* SSRN: http://ssrn.com/abstract=902434 ("Biased damages awards will result from biased damages testimony under a wide range of circumstances and biases cannot be expected to cancel out in a 'battle of the experts'").
28. *Juries of Experts,* 5 ALB. L.J. 227 (1872), *cited in* Kaye *et al., supra* note 18.
29. Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony,* 15 HARV. L. REV. 40, 54-55 (1901).
30. Supreme Court of Arizona, *A Strategic Agenda for Arizona's Courts 2005-2010:"Good to Great"* at 16 (Goal 5: Serving the Public by Improving the Legal Profession).
31. Lord Woolf, a senior judge in the English courts, observed that the growth of a large litigation support industry contravened principles of proportionality and access to justice. His report thus recommended major revisions to the rules and procedures for expert evidence. H. K. Woolf, *Access to Justice (Final Report to the Lord Chancellor on the Civil Justice System in England and Wales)* (AMSO, London 1996), and *Interim Report* (1995).
32. *See generally Commission Report, supra* note 7. The procedural reforms for expert evidence are conceptually based on the principles articulated in the famous "Ikarian Reefer" case, which ushered in important changes in the courts' use of expert witness testimony in England and Wales. *National Justice Compania Naviera SA v. Prudential Life Assurance Co. Ltd. No. 1,* [1995] 1 Lloyd's Rep. 455.
33. *Id.*
34. *See, e.g.*, Gary Edmond, *After Objectivity: Expert Evidence and Procedural Reform*, 2003 SYDNEY L. REV. 8 (2003) (expert evidence reforms threaten to: raise admissibility standards; privilege repeat litigants; and, transform the judicial role). Edmond argues, "[A]scriptions of objectivity are better understood as representational achievements … rather than some kind of intrinsic essence." He also contends that "few sanctions can be mobilised against *bad* experts (or 'junk scientists') … [w]ithout a sophisticated model of objectivity or even expertise."
35. *See generally Commission Report, supra* note 7. *See also* H. D. Sperling, *The Problem of Bias and Other Things,* 4 JUD. REV. 429-462 (2000) (discussion of expert witness bias in Australia and promulgation of codes of conduct for expert witnesses).
36. *See generally Commission Report, supra* note 7.
37. *Id.*
38. *Peet v. Mid Kent Healthcare NHS Trust,* [2001] EWCA Civ. 1703.