

By Thomas R. Freeman

GUARDIANS AT THE GATE

In both federal and California courts, judicial scrutiny has been extended from scientific to nonscientific expert testimony

FORTY YEARS AGO,

the Pennsylvania Supreme Court, in a memorable disparagement of expert testimony, noted, "Expert opinion...is only an ordinary guess in evening clothes."¹ This statement reflected a judicial skepticism that came to a crescendo with the advent of the term "junk science."² Recently, and largely in response to that skepticism, federal courts have taken an increasingly more aggressive stance in protecting the integrity of judicial proceedings by precluding the admission of expert testimony lacking reliable foundations.³ This trend has not been limited to the federal forum. California courts have also been vigilant in requiring reliable foundations.⁴ And both fed-

eral and California courts have made it clear that this scrutiny must extend not only to scientific testimony but to all types of expert testimony.

The common question facing federal and California trial courts is whether proffered expert testimony is relevant and reliable. What is new, perhaps revolutionary, is the enhanced judicial screening of expert testimony to assure that the basis for the testimony is reliable. Although trial courts have always been charged with the responsibility for assuring the reliability of expert testimony, judges traditionally have taken a more hands-off approach for fear of stepping on the jury's prerogative to weigh evidence. But the U.S. Supreme Court and California's

appellate courts have revitalized what had become a lax process of judicial screening by transforming the trial judge into a gatekeeper charged with responsibility for protecting the jury from unreliable expert testimony.

The U.S. Supreme Court has enumerated several factors for assessing the reliability of expert testimony and in doing so has provided federal courts with much-needed guidance in applying the inherently flexible reliability standard. The consideration of these common-sense factors is consistent with the

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trial court's role under California's substantially similar expert testimony rules, particularly Evidence Code Section 801(b).

The U.S. Supreme Court triggered the expert testimony revolution in *Daubert v. Merrell Dow Pharmaceuticals*.⁵ Ironically, the *Daubert* decision liberalized the standard for admitting expert scientific testimony. Before *Daubert*, most federal and state courts applied the *Frye* test—a standard initially developed by the D.C. Circuit in a 1923 case, *Frye v. United States*⁶—in considering the admissibility of expert scientific testimony.⁷ In *Frye*, the court held that expert opinion based on scientific technique is inadmissible unless the technique is generally accepted as reliable in the relevant scientific community.⁸ By that standard, the judge does not make a truly independent admissibility decision—the relevant scientific community does. If a methodology is not already generally accepted in the relevant scientific community, then the trial judge cannot admit the testimony, no matter how reliable the judge might believe it to be. The *Frye* general-acceptance test soon became the dominant standard for determining the admissibility of novel scientific evidence.⁹

Frye's half-century reign came to an abrupt end, however, in 1993. Justice Harry Blackmun, writing for the 7-2 majority in *Daubert*, observed that the rigid *Frye* test is at odds with the liberal thrust of the Federal Rules of Evidence because *Frye* makes general acceptance an absolute prerequisite to admissibility, no matter how reliable the expert's methodology. The conservative *Frye* test therefore keeps from the jury innovative and reliable expert testimony simply because it has not yet achieved general acceptance in the scientific community. Further, Rule 702, which governs the admissibility of expert testimony, makes no mention of the general-acceptance rule, and neither do the Advisory Committee Notes. The Court concluded that the austere *Frye* standard is therefore incompatible with both the language and liberal intent of the Federal Rules of Evidence, despite the fact that the vast majority of federal circuits consistently applied *Frye* in the almost 20 years after Rule 702 was adopted.¹⁰

The *Daubert-Kumho* Standard

What standard governs the admissibility of expert scientific testimony under Rule 702? The landmark ruling in *Daubert*, jettisoning the *Frye* test, addressed this question. Before *Daubert*, some had argued that any attack on the reliability of expert testimony raises an issue about the weight to be accorded such testimony, not its admissibility. But Justice Blackmun flatly rejected the notion that Rule 702 places no reliability-related limits on expert scientific testimony: "[T]he trial judge

must ensure that any and all scientific testimony or evidence admitted is not only relevant but reliable."¹¹ That is the genesis of *Daubert*'s now famous metaphor—the trial judge as gatekeeper.¹² The trial judge is charged with the responsibility to screen from the jury unreliable expert scientific testimony.

To apply the *Daubert* reliability standard, the trial court must focus primarily on the rationale and methodology supporting the expert's opinion, as opposed to the opinion itself.¹³ As Judge Alex Kozinski observed, "Our task is to analyze not what the experts say, but what basis they have for saying it."¹⁴

The other prerequisite for admissibility is relevance: The expert's testimony must assist the trier of fact to understand the evidence or to determine a fact in issue.¹⁵ Expert testimony must be sufficiently tied to the facts of the case so that it will assist the jury in resolving a material factual dispute.¹⁶ Thus, for example, reliable expert testimony on the phases of the moon may help the jury assess the evidence if there is an issue about the darkness of a particular night, but the same expert testimony is not relevant if it is elicited to show that a person may have behaved more irrationally than normal given the position of the moon on that night.¹⁷

The trial court's focus on reliability and relevance as conditions to the admission of expert testimony has dramatically changed federal practice. Preliminary findings of the Federal Judicial Center indicate that since *Daubert* was decided in 1993, federal litigants are more likely to file pretrial motions to exclude expert scientific testimony and judges are more likely to scrutinize and exclude such testimony.¹⁸ But those preliminary results, which are based on data from 1998, probably underestimate the likely future impact of the *Daubert* revolution. Trial courts in the coming decade may grant far more pretrial motions to exclude expert testimony as a result of two more recent Supreme Court decisions.

First, the Supreme Court's 1997 decision in *General Electric Company v. Joiner*¹⁹ made it clear that district court rulings on admissibility are subject to the deferential abuse-of-discretion standard, even when a ruling on admissibility is made in conjunction with a case-dispositive summary judgment ruling. Clearly this deferential standard of review will decrease trial court inhibitions that might be present under a more stringent review standard.

Second, and most significantly, the Supreme Court's 1999 decision in *Kumho Tire Company v. Carmichael*²⁰ extended the trial court's gatekeeper role to all types of expert testimony—not just science-related expert testimony. By doing so, the Court has enhanced the trial court's authority and

responsibility to prevent the admission of unreliable expert testimony of all kinds.

Justice Stephen Breyer, writing for the 8-1 majority in *Kumho*, answered the key question left open by *Daubert*: Is the trial court required to perform a *Daubert*-style reliability screening for nonscientific expert testimony? The Court's answer was yes—reliability scrutiny is required for all types of expert testimony, scientific and nonscientific. The same evidentiary rationale that supported the recognition of the trial court's gatekeeping function in the science context applies equally to nonscientific expert testimony.²¹

Justice Breyer explained that expert witnesses are granted wide testimonial latitude unavailable to other witnesses. That latitude is justified by the assumption that the opinion of the expert will have a reliable basis in the expert's specialized knowledge and experience.²² Because testimonial latitude is granted to all experts, the same reliability requirement should apply to all experts as well—not just to scientific experts.²³

Further, there is no clear-cut distinction between scientific and nonscientific testimony. Engineers, for example, usually are characterized as providing technical but not scientific testimony. Nevertheless, their testimony also is based on scientific reasoning and methodology. On which side of the line does an engineer's testimony fall? The difficulty of drawing a sensible line between scientific and nonscientific testimony is matched by the absence of any policy-based justification for doing so. By definition, expert opinion is based on knowledge that is foreign in kind to the jury's own, making it likely that the jury will find the testimony both powerful and difficult to evaluate. That creates a risk that the jury will overvalue expert testimony, which is the basis for the gatekeeping function described in *Daubert*. There is no less need for gatekeeping protection when other types of expert testimony are offered.²⁴

Together *Daubert* and *Kumho* stand for the proposition that trial courts are responsible for screening expert testimony to ensure that the basis for the testimony is relevant and reliable. Relevance screening is nothing unusual—all testimony, expert and nonexpert, is subject to such judicial scrutiny. But reliability screening is unusual because, for nonexperts, the jury ordinarily is the arbiter of reliability. Expert witnesses, however, are different because they are granted far greater latitude than nonexperts in expressing opinions.

Expert Testimony in California

California courts have long followed the *Frye* standard for the admission of novel scientific testimony.²⁵ That rule, however, is merely a

special application of the general reliability standard under California case law. In the context of novel scientific evidence, reliability means that the technique must be sufficiently established to have gained general acceptance in the particular field to which it belongs.²⁶

The California Supreme Court's seminal 1976 decision in *People v. Kelly*²⁷ reaffirmed the state's longstanding commitment to *Frye*, despite loud protests that the *Frye* rule was too conservative. The *Kelly* court concluded, however, that far from being a detriment, the conservative nature of the *Frye* rule was its primary advantage. Simply put, scientists are better able to assess the reliability of scientific knowledge than judges.²⁸

In light of *Daubert*, the *Kelly-Frye* rule was challenged again in a 1994 case, *People v. Leahy*.²⁹ In its decision, the California Supreme Court conceded that Rule 702 of the Federal Rules of Evidence—the rule interpreted in *Daubert*—was the functional equivalent of California Evidence Code Sections 720 and 801. Based on that functional equivalence, the court recognized that if it were approaching the question afresh, it might well adopt the *Daubert* approach, which is just as consistent with the text of the California Evidence Code as it is with the Federal Rules of Evidence.³⁰ Nonetheless, principles of stare decisis weighed heavily in favor of retaining the *Kelly-Frye* rule, especially because the court in *Kelly* considered and rejected the same policy arguments accepted in *Daubert*.³¹ The *Leahy* court therefore refused to displace the conservative *Kelly-Frye* rule (now known as the *Kelly* rule).³²

While the state supreme court has held that *Daubert* does not displace the *Kelly* rule, it has not considered *Daubert's* applicability outside the limited context of novel scientific expert testimony. The U.S. Supreme Court's recent holding in *Kumho* heightens the significance of this issue. Indeed, there is no published California opinion applying or rejecting the *Daubert-Kumho* gatekeeper function in the context of nonscientific expert testimony.³³ This issue is ripe for consideration because the federal *Daubert-Kumho* factors may be equally persuasive in state court.

Evidence Code Section 801(b) already imposes on trial courts the obligation to screen nonscientific expert testimony to ensure its reliability: "[T]he courts have the obligation to contain expert testimony within the area of the professed expertise, and to require adequate foundations for the opinion."³⁴ California courts and influential commentators recognize that reliability and relevance are as essential to any adequate foundation as they are under federal law.³⁵

While California courts have not yet



invoked the term "gatekeeper" in a published opinion, California trial judges plainly serve that function. Just as in federal court, their mandate under Evidence Code Section 801(b) is to exclude expert opinion testimony that is not based on matter reasonably relied upon by experts on the particular subject.³⁶ The obligation of trial judges is to protect the truth-finding process from exposure to unreliable opinion testimony that, coming from an expert, may be accepted for reasons unrelated to the merits.³⁷

Similar to the *Daubert-Kumho* approach, the trial court's foundational inquiry under California law must focus closely on the method or rationale supporting the expert's conclusion.³⁸ An expert's opinion has no evidentiary value, and must therefore be excluded, if the articulated basis for that opinion is not itself reliable.³⁹ This is because the evidentiary value of an expert's opinion rests not in the conclusion reached but in the factors considered and the reasoning employed:⁴⁰ "Like a house built on sand, the expert's opinion is no better than the facts on which it is based."⁴¹ Thus, expert testimony based on speculation, conjecture, or otherwise unreliable reasoning or methodologies must be excluded.⁴²

The trial court's obligation to exclude unreliable expert testimony was stated with careful particularity in 1987 by the court of

appeal in *Pacific Gas & Electric Co. v. Zuckerman*: 1) An expert's opinion is only as good as the "factors considered and the reasoning employed," and 2) the trial court cannot properly permit expert testimony "without critical consideration of [the expert's] reasoning."⁴³ Similar to federal courts applying the *Daubert-Kumho* standard, California trial courts must exclude expert testimony when the expert's methodology or reasoning process is flawed.⁴⁴

Reliability scrutiny of nonscientific expert testimony of the type described in *Kumho* is likewise consistent with the policy underlying California's *Kelly* rule. The conservative *Kelly* rule is designed to protect the truth-seeking process by excluding junk science. It makes no sense to exclude expert opinion testimony based on scientific techniques that have not yet been widely accepted in the relevant scientific community if the same opinion testimony must be accepted from experts who eschew the methods of science altogether.⁴⁵ Indeed, a failure to scrutinize such nonscientific expert testimony would create a significant loophole requiring the admission of junk technical and other expert testimony. That loophole would be just as damaging to the truth-finding process as junk science.

It should be no surprise, then, that California appellate courts have required trial courts to engage in *Kumho*-like reliability

screening. This requirement is illustrated by *In re Hewitson*,⁴⁶ a 1983 case in which the trial court permitted an expert to opine on the value of a privately owned corporation based on a methodology commonly used for valuing public corporations. The court of appeal reversed, finding that the expert failed to establish that his method was reliable. The expert did not account for the differences between public and private corporations, thus rendering the methodology potentially inaccurate in the private context.⁴⁷

Guidance for Determining Admissibility

The general reliability standard applied in both federal and California courts leaves much to the trial court's discretion.⁴⁸ But in an effort to limit that discretion and provide guidance, the U.S. Supreme Court in *Daubert* and *Kumho* has enumerated several factors that trial courts should consider in making admissibility determinations. In doing so, however, the Court cautioned that these are merely factors to be considered by the trial court in the context of a particular case—they are not strict conditions for admissibility. Flexibility is essential because too much depends upon the particular circumstances of each case to saddle trial courts with inflexible rules for assessing reliability.⁴⁹ (See "Reliability Factors," this page.)

Similarly, the Court in *Kumho* recognized that the *Daubert* factors, designed for the consideration of scientific testimony, may not always apply in assessing the reliability of nonscientific expert testimony: "[T]he factors identified in *Daubert* may or may not be pertinent in assessing reliability, depending on the nature of the issue, the expert's particular expertise, and the subject of his testimony."⁵⁰

Because the *Daubert* factors are neither exclusive nor dispositive, recent amendments to Rule 702 of the Federal Rules of Evidence have not codified them as elements required for admissibility.⁵¹ Instead, the Advisory Committee has listed them as factors in its interpretive notes⁵² and added five additional factors that were identified after *Daubert*. (See "Reliability Factors," this page.)

There is no similar listing of reliability factors in California case law or statutes. But there is no reason California courts should be precluded from considering the helpful factors listed by the federal authorities. Indeed, California courts already apply many of these factors in assessing the reliability of nonscientific expert testimony.

One of the most significant and often dispositive factors identified in *Kumho* and the Advisory Committee Notes is the principle that, in most situations, the party offering

expert testimony must demonstrate that its expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom "the same level of intellectual rigor" that characterizes the practice of an expert in the relevant field.⁵³ Based on that principle, federal courts have held that when an expert has concluded that a product is defective, for example, the expert's testimony must be supported by objective data, studies, or other matter of a type reasonably relied upon by experts in the same field.⁵⁴

This same-level-of-intellectual-rigor test is consistent with admissibility decisions made by California courts. In *Smith v. ACandS, Inc.*,⁵⁵ the appellate court reversed a judgment supported by expert testimony that was founded upon a methodology lacking the same level of intellectual rigor applied by other experts in the field. The plaintiff in *Smith* brought a personal injury action against his employer, a contractor, based on alleged asbestos contamination at the plaintiff's work site. The plaintiff's expert opined that asbestos levels at the work site caused the plaintiff's injury. The causation testimony was based on the expert's conclusion regarding the level of asbestos dust at the work site that, in turn, was based on an extrapolation from photographs of the site. As the plaintiff's

expert acknowledged, the normal method for measuring asbestos levels by technicians in the field is to filter air at the site through a membrane and analyze the sampled air with an electron microscope to count the retained asbestos fibers. The plaintiff's expert did not utilize that standard procedure and failed to demonstrate that it was reasonable to rely upon his less rigorous photo-extrapolation method. Thus the expert's testimony should have been excluded by the trial court.⁵⁶

Similarly, the court of appeal in *Korsak v. Atlas Hotels, Inc.*⁵⁷ held that the trial court improperly admitted expert testimony based on a survey so lacking in intellectual rigor and controls that no reasonable expert could rely upon it in forming an opinion. The plaintiff in *Korsak* was injured while taking a shower in a hotel when the showerhead fell and struck him in the eye. The plaintiff's engineering expert testified that in an effort to verify that the defendant hotel's maintenance procedures were inadequate, he conducted an informal survey of individuals in the hotel business. He was told that other hotels were more diligent in maintaining their showerheads.⁵⁸ But the expert admitted that he did not attempt to conduct a methodical study, survey, or investigation—he simply called people in the hotel business. This casual sampling of unknown sources within the hotel industry

Reliability Factors

The U.S. Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals* listed factors that a judge as gatekeeper may consider in his or her determination of the admissibility of scientific expert testimony:

- ✓ Whether a "theory or technique...can be (and has been) tested."
- ✓ Whether it "has been subjected to peer review and publication."
- ✓ Whether, regarding a particular technique, there is a high "known or potential rate of error" and whether there are "standards controlling the technique's operation."
- ✓ Whether the theory or technique enjoys "general acceptance" within a "relevant scientific community." This is the *Frye*² test, though it is stated as a mere factor, not an essential condition.

In addition to the factors listed in *Daubert*, the Advisory Committee Notes to recently amended Rule 702 of the Federal Rules of Evidence enumerate the following reliability factors that may be used in determining the admissibility of expert testimony regarding what Rule 702 describes as "scientific, technical, or other specialized knowledge":

- ✓ Whether the expert is being as careful as he or she would be in his or her regular professional work outside the expert's paid litigation consulting or, as alternatively stated in *Kumho Tire Company v. Carmichael*, whether the expert "employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field."³
- ✓ Whether the expert has adequately accounted for obvious alternative explanations.
- ✓ Whether the field of expertise claimed by the expert is known to reach reliable results for the type of opinion the expert would give.
- ✓ Whether experts are proposing to testify about matters growing naturally and directly out of the research they have conducted independent of litigation or whether they have developed their opinions expressly for the purpose of testifying.
- ✓ Whether the expert has unjustifiably extrapolated from an accepted premise to an unfounded conclusion—i.e., whether the analytical gap between data and opinion is too great.—T.R.F

¹ *Daubert v. Merrell Dow Pharms*, 509 U.S. 579, 592-94 (1993).

² *Frye v. United States*, 293 F. 1013 (1923).

³ *Kumho Tire Co. v. Carmichael*, 119 S. Ct. 1167, 1176 (1999).

did not constitute matter upon which an expert could reasonably rely in forming an opinion.⁵⁹

Assessing Causation Testimony

Federal and California courts are often required to assess the reliability of an expert's causation testimony. One of the *Daubert-Kumho* factors is whether an expert witness testifying to the cause of an event or phenomena has accounted for other known causes. In most situations involving a determination of causation, the expert's failure to control for other common explanatory variables renders the opinion essentially worthless.⁶⁰ Simply put, an expert's causation testimony must be supported by a methodology or reasoning process that not only rules in the alleged cause but rules out other likely causes.⁶¹

The principle that other explanatory variables must be ruled out flows easily from basic principles of deductive reasoning. If event "x" has three common causes, "c-1," "c-2," and "c-3," an expert who observes the occurrence of event "x" cannot rationally conclude—on that basis alone—that event "x" was caused by "c-1." In order to support the conclusion that "c-1" caused event "x," the expert must rule out causes "c-2" and "c-3."⁶² By failing to do so, the expert's causation opinion lacks a reliable, nonspeculative basis.⁶³ Thus, as a matter of logic, an expert opinion that does not eliminate other equally plausible causes lacks an adequate factual basis and must be excluded.⁶⁴

To require that an expert exclude other causes, however, simply means that the expert must reasonably account for them. The expert need not convince the trial judge that the expert's conclusion, in ruling out other causes, is correct. The expert need only show that the conclusion is based on rational methods or principles.

Thus, the trial court cannot exclude expert testimony based on a reliable methodology just because the court disagrees with the expert's conclusion.⁶⁵ The court's focus must be on the expert's methodology and principles, not the conclusions they generate.⁶⁶ In sum, the expert's basis for ruling out other causes need not be persuasive to the trial judge as long as the expert's method or rationale for doing so is reasonable.⁶⁷

The proper exercise of the trial court's gatekeeping function in relation to expert causation testimony is illustrated by the Eighth Circuit in *Blue Dane Simmental Corporation v. American Simmental Association*.⁶⁸ The plaintiff, American Simmental Association, is a nonprofit group dedicated to the development of the Simmental breed of cattle in the United States. The plaintiff sued

the defendants, a cattle ranch and its owner, on the grounds that the defendants wrongfully introduced cattle of less-than-pure ancestry into the U.S. Simmental purebred population, which caused a drop in the market value for Simmental cattle. The plaintiff's expert witness, an agricultural economist, concluded that the introduction of the defendants' Simmentals led to a decrease in market value based on the temporal correlation between the introduction of the defendants' cattle and the decline in the market price of Simmental cattle. The trial court excluded that testimony and the appellate court affirmed because the agricultural economist failed to account for other possible market-price variables—variables that the expert admitted were typically considered by other experts in the field when ascertaining the cause of a market decline. Because the expert's methodology failed to consider other variables affecting market values, the basis for his opinion was unreliable, rendering his opinion inadmissible.⁶⁹

The California Court of Appeal's decision in *City of San Diego v. Sobke*⁷⁰ applied the same principle. *Sobke* was an eminent domain action in which commercial tenants sought to introduce expert testimony on the value of their alleged loss of goodwill resulting from the condemnation. The trial court ruled that the expert testimony was inadmissible for lack of an adequate foundation because the expert's valuation technique failed to exclude other potential causes of the tenants' losses. Because of that gap in logic, the expert's methodology was not reliable and therefore was properly excluded by the trial court.⁷¹

Limits of Experience-Based Expert Testimony

A common misperception exists that once an expert is qualified to render an opinion, that expert may properly support virtually any opinion by reference to the expert's experience. But experience-based opinion testimony is admissible only if the expert explains the basis for the testimony and the articulated basis meets the test of reliability.⁷² An expert's mere assertion of a conclusion, without explaining the basis for that conclusion, is inadmissible for lack of foundation.⁷³ That foundational gap is not filled by an expert's assertion that the opinion is based, in some unexplained manner, on experience.⁷⁴

The Federal Rules of Evidence and the California Evidence Code treat an expert's qualifications separately from an assessment of the basis for an expert's opinion.⁷⁵ If experience alone were a sufficient basis for an expert's opinion, no matter what the opinion is, then the qualification requirement would swallow the reliability requirement.⁷⁶ Because expert qualification is separate from the reli-

ability requirement, both elements must be established independently. As a result, even a supremely qualified expert cannot testify to opinions unless those opinions are reliable and relevant.⁷⁷

The reliability of an expert's experience is therefore a function of the type of opinion expressed. That does not imply that experience is never a valid foundation for expert opinion. It often is. But the admissibility of such testimony depends on the reliability of the expert's experience as it relates to the subject matter of the proffered opinion.

A beekeeper, for example, may properly testify that bumblebees ascend into the wind based on the beekeeper's experience of observing them do so on countless occasions. But that same experience does not provide a reliable foundation for the conclusion that bumblebees fly into the wind because that technique comports with certain aerodynamic principles.⁷⁸

Judicial scrutiny of experience-based expert testimony is particularly searching when an expert opines on a subject that is susceptible to objective analysis. In that context, the expert's opinion must usually be supported by an objective methodology or protocol.⁷⁹ Otherwise the expert's opinion is unsubstantiated.

This requirement is illustrated in *Donnelly v. Ford Motor Company*,⁸⁰ a 1999 federal district court case. Plaintiff Donnelly sued Ford for injuries arising out of an automobile fire, which was allegedly caused by a defective ignition switch. The conclusion of the plaintiff's expert that the fire was caused by an ignition-switch defect was based on his training and experience as an engineer. But the expert failed to explain the reasons supporting his conclusion that fires in Ford vehicles are caused by defective ignition switches: "[He] does not identify any specific technique or method that he used, and cites no industry standards, surveys or studies upon which he relied."⁸¹

The *Donnelly* court reasoned that when an expert testifies that a product is defective, "one would expect some sort of statistical data and analysis, or comparison studies of ignition switch fires with fires of other origin, to support the broad conclusion that all accidental fires originating on the driver's side of Ford vehicles are the result of ignition switch failures." If this type of data and objective analysis are not available, then the expert must at least provide a detailed explication of the reasoning that led to the expert's conclusion. Without such an objective foundation explaining the basis for the expert's conclusion, the testimony "is simply inadmissible *ipse dixit*."⁸²

To be sure, expert witnesses have substantial leeway. That is why courts and legis-

latures have not imposed inflexible rules restricting the introduction of expert testimony. The necessarily indeterminate reliability standard remains the law. But the *Daubert* and *Kumho* decisions clearly raise the threshold for admissibility. Meaningful, judicially enforced limits to expert testimony are now being applied. So today, perhaps unlike in the past, expert opinion is not simply an ordinary guess in evening clothes. ■

¹ Kerstetter v. Commonwealth, 404 Pa. 168, 173 (1961).

² PETER W. HUBER, GALLEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM (2d ed. 1993) (a critique of junk science).

³ *Lust v. Merrell Dow Pharms., Inc.*, 89 F. 3d 594, 597 (9th Cir. 1996) (Daubert factors were designed to "assist in the separation of inadmissible opinion based on junk science from admissible opinions developed by the scientific method."); *Nelson v. Tennessee Gas Pipeline Co.*, 243 F. 3d 244, 252 (6th Cir. 2001) ("[C]lose judicial analysis of expert testimony [under *Daubert* and *Kumho*] is necessary because expert witnesses are not always unbiased scientists.").

⁴ *Kelley v. Trunk*, 66 Cal. App. 4th 519, 524 (1998); *People v. Morganti*, 43 Cal. App. 4th 643, 656 (1996); *Korsak v. Atlas Hotels, Inc.*, 2 Cal. App. 4th 1516, 1523 (1992).

⁵ *Daubert v. Merrell Dow Pharms.*, 509 U.S. 579 (1993).

⁶ *Frye v. United States*, 293 F. 1013 (1923).

⁷ *Daubert*, 509 U.S. at 585.

⁸ *Frye*, 293 F. at 1014.

⁹ *Daubert*, 509 U.S. at 587-89.

¹⁰ *Id.* at 585, 588-89.

¹¹ *Id.* at 589.

¹² *Id.* at 597 (FED. R. EVID. 702 creates "a gatekeeping role for the judge.").

¹³ *Id.* at 595.

¹⁴ *Daubert v. Merrill Dow Pharms., Inc.*, 43 F. 3d 1311, 1316 (9th Cir. 1995).

¹⁵ *Daubert*, 509 U.S. at 591 (citing FED. R. EVID. 702).

¹⁶ *Id.* at 591-92.

¹⁷ *Id.*

¹⁸ MOLLY TREADWAY JOHNSON ET AL., EXPERT TESTIMONY IN FEDERAL CIVIL TRIALS: A PRELIMINARY ANALYSIS (Federal Judicial Center 2000).

¹⁹ *General Elec. Co. v. Joiner*, 118 S. Ct. 512 (1997).

²⁰ *Kumho Tire Co. v. Carmichael*, 119 S. Ct. 1167 (1999).

²¹ *Id.* at 1175.

²² *Id.* at 1174 (citing *Daubert v. Merrell Dow Pharms.*, 509 U.S. 579, 592 (1993)).

²³ *Id.* at 1174.

²⁴ *Id.* at 1174-75; 1 D. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY §1-3.4.1, at 30-31 (1997) (hereinafter FAIGMAN).

²⁵ *Huntingdon v. Crowley*, 64 Cal. 2d 647, 653-54 (1966).

²⁶ *People v. Morganti*, 43 Cal. App. 4th 643, 656 (1996).

²⁷ *People v. Kelly*, 17 Cal. 3d 24 (1976).

²⁸ *Id.* at 30-31.

²⁹ *People v. Leahy*, 8 Cal. 4th 587 (1994).

³⁰ *Id.* at 598-99.

³¹ *Id.* at 601-02.

³² The Kelly rule applies only to expert testimony based on "new scientific technique." *People v. Stoll*, 49 Cal. 3d 1136, 1155 (1989). Expert testimony based on a scientific technique that is new, novel, or experimental therefore must be generally accepted by the relevant scientific community. *Wilson v. Phillips*, 73 Cal. App. 4th 250, 254-55 (1999).

³³ See *Texaco Producing, Inc. v. County of Kern*, 66 Cal. App. 4th 1029, 1050 (1998) (pre-*Kumho* decision refusing to apply *Daubert* because *Daubert* does not apply to nonscientific expert testimony). While the court did not expressly apply EVID. CODE §801's reliability stan-

dard in its denial of an objection to expert testimony, it confirmed in its analysis that the information relied on by the expert was of a type that responsible persons would rely upon.

³⁴ *Korsak v. Atlas Hotels, Inc.*, 2 Cal. App. 4th 1516, 1523 (1992) (emphasis added).

³⁵ *Id.* at 1524; *Lewis v. Hoist & Derrick Co.*, 20 Cal. App. 3d 570, 583 (1971); 1 JEFFERSON'S CALIFORNIA EVIDENCE BENCHMARK §§29:34, 29:38, 29:40, 29:44 (3d ed. 1998).

³⁶ Compare *Korsak*, 2 Cal. App. 4th 1516 (trial court's obligation is to exclude unreliable expert testimony) with *Kumho Tire Co. v. Carmichael*, 119 S. Ct. 1167, 1175 (1999) ("[The] trial judge must determine whether the testimony has 'a reliable basis in the knowledge and experience of [the relevant] discipline.") (quoting *Daubert v. Merrell Dow Pharms.*, 509 U.S. 579, 592 (1993)).

³⁷ *Korsak*, 2 Cal. App. 4th at 1253; *Kumho Tire Co.*, 119 S. Ct. at 1174-75.

³⁸ *City of San Diego v. Sobke*, 65 Cal. App. 4th 379, 395 (1998).

³⁹ *Kelley v. Trunk*, 66 Cal. App. 4th 519, 524 (1998).

⁴⁰ *Pacific Gas & Elec. Co. v. Zuckerman*, 189 Cal. App. 3d 1113, 1135 (1987).

⁴¹ *People v. Gardeley*, 14 Cal. 4th 605, 618 (1997).

⁴² *Smith v. ACandS, Inc.*, 31 Cal. App. 4th 77, 93 (1994).

⁴³ *Zuckerman*, 189 Cal. App. 3d at 1136; see also 1 WITKIN, CALIFORNIA EVIDENCE 561, at §31 (quoting *Zuckerman*).

⁴⁴ *City of San Diego v. Sobke*, 65 Cal. App. 4th 379, 396-97 (1998); *Korsak v. Atlas Hotels, Inc.*, 2 Cal. App. 4th 1516, 1525-26 (1992); *Smith*, 31 Cal. App. 4th at 93; *In re Hewitson*, 142 Cal. App. 3d 874, 885-86 (1983).

⁴⁵ FAIGMAN, *supra* note 24, §1-3.4.1, at 30-31.

⁴⁶ *In re Hewitson*, 142 Cal. App. 3d 874.

⁴⁷ *Id.* at 885-86; *Zuckerman*, 189 Cal. App. 3d 1113.

⁴⁸ *General Elec. Co. v. Joiner*, 118 S. Ct. 512, 517 (1997); *Korsak*, 2 Cal. App. 4th at 1522-23.

⁴⁹ *Daubert v. Merrell Dow Pharms.*, 509 U.S. 579, 594-95 (1993); *Kumho Tire Co. v. Carmichael*, 119 S. Ct. 1167, 1175 (1999).

⁵⁰ *Kumho*, 119 S. Ct. at 1175 (quoting Brief for United States as Amicus Curiae 19).

⁵¹ FED. R. EVID. 702, advisory committee notes (effective Dec. 1, 2000).

⁵² The FED. R. EVID. 702 advisory committee's notes are accorded great weight in resolving interpretation issues. *Tome v. United States*, 115 S. Ct. 696, 702-03 (1995) (Kennedy, J., plurality opinion). See generally Scallen, *Interpreting the Federal Rules of Evidence: The Use and Abuse of the Advisory Committee Notes*, 28 LOYOLA OF L.A. L. REV. 1283 (1995).

⁵³ *Kumho*, 119 S. Ct. at 1176.

⁵⁴ *Oglesby v. General Motors Corp.*, 190 F. 3d 244, 249-50 (4th Cir. 1999).

⁵⁵ *Smith v. ACandS, Inc.*, 31 Cal. App. 4th 77 (1994).

⁵⁶ *Id.* at 93.

⁵⁷ *Korsak v. Atlas Hotels, Inc.*, 2 Cal. App. 4th 1516 (1992).

⁵⁸ *Id.* at 1520-21.

⁵⁹ *Id.* at 1525-26.

⁶⁰ *Munoz v. Orr*, 200 F. 3d 291, 301 (5th Cir. 2000).

⁶¹ *Turner v. Iowa Fire Equip. Co.*, 229 F. 3d 1202, 1209 (8th Cir. 2000).

⁶² *Sheehan v. Daily Racing Form, Inc.*, 104 F. 3d 940, 942 (7th Cir. 1997).

⁶³ *Munoz*, 200 F. 3d at 301-02.

⁶⁴ *Oglesby v. General Motors Corp.*, 190 F. 3d 244, 250 (4th Cir. 1999).

⁶⁵ While the trial court's primary focus is on the expert's principles and methodology, the court must also consider whether the expert's conclusion is reasonably

based on those principles and methods. *General Elec. Co. v. Joiner*, 118 S. Ct. 512, 519 (1997); *Nelson v. Tennessee Gas Pipeline Co.*, 243 F. 3d 244, 254 (6th Cir. 2001) (trial court should exclude testimony when gap between data and opinion is too great).

⁶⁶ *National Bank of Commerce v. Associated Milk Producers, Inc.*, 191 F. 3d 858, 862 (8th Cir. 1999).

⁶⁷ *Id.* at 862-63.

⁶⁸ *Blue Dane Simmental Corp. v. American Simmental Ass'n*, 178 F. 3d 1035 (8th Cir. 1999).

⁶⁹ *Id.* at 1040-41.

⁷⁰ *City of San Diego v. Sobke*, 65 Cal. App. 4th 379 (1998).

⁷¹ *Id.* at 396-97.

⁷² *Kumho Tire Co. v. Carmichael*, 119 S. Ct. 1167, 1176 (1999).

⁷³ *Kelley v. Trunk*, 66 Cal. App. 4th 519, 524 (1998).

⁷⁴ *Id.* at 524; FED. R. EVID. 702, advisory committee notes (An expert relying primarily on experience must "explain how that experience leads to the conclusion reached, why that experience is a sufficient basis for the opinion, and how the opinion is reliably applied to the facts.").

⁷⁵ *Bourelle v. Crown Equip. Corp.*, 220 F. 3d 532, 537 n.11 (7th Cir. 2000).

⁷⁶ *Id.*

⁷⁷ *Clark v. Takata Corp.*, 192 F. 3d 750, 759 n.5 (7th Cir. 1999).

⁷⁸ *Berry v. City of Detroit*, 25 F. 3d 1342, 1349-50 (6th Cir. 1994).

⁷⁹ *Deimer v. Cincinnati Sub-Zero Prods., Inc.*, 58 F. 3d 341, 344-45 (7th Cir. 1995).

⁸⁰ *Donnelly v. Ford Motor Co.*, 80 F. Supp. 2d 45 (E.D. N.Y. 1999).

⁸¹ *Id.* at 50.

⁸² *Id.*