

# Experts in Natural Resource Damages and Toxic Tort Litigation\*

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## Abstract

Expert testimony plays a critical role in environmental and toxic tort litigation [1]. While most litigation settles, the work of an expert should, from the outset, be prepared with trial in mind. First and foremost, an expert, using the appropriate expertise, must be able to resolve questions that will assist the trier of fact in making determinations necessary under the law applicable to the case. In addition, an expert must demonstrate a solid scientific foundation in all of his or her opinions. Once armed with the opinions reached in the case, the forensic expert should work with the trial team to simplify proof, clarify the presentation and integrate it with other trial proof and themes [2]. This effort should include the realistic identification of any perceived or real shortcomings regarding the information available, the approach taken by or conclusions reached by the expert. Ongoing communication between the trial team and the expert throughout the discovery and pre-trial litigation is essential.

## Keywords

Testimony, Expert, Litigation, Environmental

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## 1. Introduction

There is something about trial that “arouses the adrenals” [3]. However, it is the foundational work performed by the expert and the trial attorneys that are required before the expert (and thus the client) can even go to trial, with pretrial motions targeting weaknesses and, in some instances, fatal flaws of an expert’s approach. The job of the trial lawyer is to motivate the finder of fact to rule in favor of his or her client consistent with the law and evidence. Central to this job is the ability to focus attention on the portion of the evidence that matters to the trial lawyer’s proof and trial themes. This job is especially challenging in the context of environmental and toxic tort

\*The views expressed herein are those of the author and do not reflect the views of these clients.

litigation and more recently in the evolving field of natural resource damage claims [4]. One reason for this is that in toxic tort and natural resource damages cases, expert witnesses generally play an essential role in the development of the case given the unique nature of the inquiry and proofs required to pursue such claims. Experts are vitally important, but in some cases can be complicated witnesses and often are uncomfortable with the constraints and requirements of a legal proceeding, issues best resolved by ongoing communication with and transparency between the expert and the trial team. Below I discuss some background information regarding experts in cases in the federal courts of the United States and some principles relevant to their examination.

## 2. Who Is an Expert?

The formal rules on experts are, at least initially, relatively straight-forward: the expert must have sufficient training and expertise to enable him or her to help a jury understand a circumstance outside of a finder of fact's everyday experience [5]. If the fact in dispute is obvious or well known, or can be proven otherwise, the need for an expert may go away, unless there are other related issues outside the common experiences of the finder of fact that require expert analysis.

### Federal Rule of Evidence 702. Testimony by Expert Witnesses

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.

Expert proof must be relevant to some issue that is in dispute. Fed. R. Evid., Rule 401 generally defines "relevant evidence" as evidence having "any tendency to make the existence of any fact that is of consequence to the determination of the action more or less probable than it would be without the evidence." Fed. R. Evid. Rule 402 and 403 allow judges to exclude even relevant evidence on other grounds, including if its probative value is outweighed by the prejudicial effect of its admission, if the evidence will likely confuse a jury or consideration of the evidence wastes time.<sup>1</sup>

An expert must conduct himself or herself in a certain way. At the outset, the expert must be able to explain the foundations of the opinions, including the expertise required to formulate the opinion and the facts and methods specific to the conclusions offered. The expert's opinion should be relevant to the facts of the case and must be based on principles, methods and techniques that have been subjected to peer review or otherwise proven reliable.

### Federal Rule of Evidence 703. Bases of Opinion Testimony by Experts

An expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed. If experts in the particular field would reasonably rely on those kinds of facts or data in forming an opinion on the subject, they need not be admissible for the opinion to be admitted. But if the facts or data would otherwise be inadmissible, the proponent of the opinion may disclose them to the jury only if their probative value in helping the jury evaluate the opinion substantially outweighs their prejudicial effect.

There are important classes of exceptions to this rule. For example, a court may allow non-experts (lay persons) to give some opinions.<sup>2</sup> In addition, some landowners or business owners may offer opinions valuing damages done to their property<sup>3</sup> or business, a role typically left to an expert.<sup>4</sup> In addition, some seemingly expert proof may be deemed to be factual, not opinion testimony, and thus not subject to the requirements placed

<sup>1</sup>For example, on waste of time, some litigants seek to offer multiple and duplicative witnesses on a substantially similar point, or overlap witnesses. This leaves these witnesses potentially vulnerable to being stricken as cumulative.

<sup>2</sup>Fed. R. Evid., Rule 701 ((If a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is: (a) rationally based on the witness's perception; (b) helpful to clearly understanding the witness's testimony or to determining a fact in issue; and (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.)

<sup>3</sup>E.g., *United States v. Sowards*, 370 F.2d 87 (10th Cir. 1966) (allowing opinion evidence by non-experts who were familiar with the property); *Klapmeier v. Telecheck Int'l*, 482 F. 2d 247 (8th Cir. 1973) (finding that an owner is competent to testify as to the value of his property).

<sup>4</sup>E.g., *Boehm v. Fox*, 473 F.2d 445 (10th Cir. 1973) (allowing opinion of dairy owner on average pay to calculate compensatory damages).

on expert testimony.<sup>5</sup> On the other hand, some expert proof may run afoul of other rules. For example, litigants generally seek to avoid unduly prejudicial testimony,<sup>6</sup> having experts provide legal opinions,<sup>7</sup> or experts offering net opinions.<sup>8</sup> Preparation for trial testimony begins with developing a working understanding of the limitations and requirements of the rules as it relates to expert proof.

## 2.1. Daubert and the Goal of Liberalizing Proof

The Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*<sup>9</sup> held that the Federal Rules of Evidence—specifically Rule 702—had superseded the previously followed “general acceptance” test set forth in *Frye v. United States*,<sup>10</sup> because it was deemed at odds with the “liberal thrust” of the Federal Rules of Evidence. After reviewing Rule 702, the *Daubert* Court noted that “[n]othing in the text of this Rule establishes ‘general acceptance’ as an absolute prerequisite to admissibility.”<sup>11</sup> When *Frye* provided the governing test, the standard for the admission of expert testimony focused upon the question of scientific consensus rather than the quality of the scientific method.<sup>12</sup>

That the Supreme Court characterized the *Frye* test as “austere,” specifically, Justice Blackmun explained that:

The drafting history [of the Federal Rules of Evidence] makes no mention of *Frye*, and a rigid “general acceptance” requirement would be at odds with the “liberal thrust” of the Federal Rules and their “general approach” of relaxing the traditional barriers to “opinion” testimony.<sup>13</sup>

All of the justices of *Daubert* agreed that nothing in the text of Rule 702 established “general acceptance” as an absolute prerequisite to admissibility.<sup>14</sup> They found, given the “Rules’ permissive backdrop”... the assertion that [they] somehow assimilated *Frye* is unconvincing.<sup>15</sup> Consequently, the majority sought to articulate an alternative, and ostensibly more liberal, standard in accordance with the Federal Rules of Evidence. In general, this development was viewed positively in the context of environmental and toxic tort litigation, which often involves areas of relatively new areas or applications of science [6].

The *Daubert* Court interpreted Fed. R. Evid., Rule 702 to impose two distinct requirements in the case of scientific expert evidence. Initially that the evidence must be reliable, that is, the underlying methodology and procedure from which evidence is derived (not the conclusion drawn) must be based on scientific knowledge. To this end, the district court acts as a gate-keeper under Federal Rule of Evidence 104(a), making a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid. In making

<sup>5</sup>E.g., *Brown v. Ryan’s Family Steak Houses, Inc.*, No. 04-1351, 2004 WL 2423688 (4th Cir. Oct. 29, 2004) (unpublished) in which plaintiff challenged defendant’s motion to compel arbitration by asserting that his guardian lacked the mental capacity to enter into a binding contract when the arbitration agreement was executed. Plaintiff employee supported the assertion with testimony from the guardian’s treating physician who opined that guardian was in mental decline due to brain atrophy and subclavian steal syndrome at the relevant time. The district court’s admission of the opinion testimony was affirmed on appeal. The physician’s diagnosis of guardian’s ailments did not have to satisfy *Daubert*, because the physician was a fact witness describing the condition of a patient, which was admissible as a lay opinion under Fed. R. Evid., Rule 701. The court stated, “[f]urthermore, Dr. Sanders is the most qualified person available to testify to Mrs. Gassaway’s mental capacity. Gassaway has passed away and is not available for further medical examination. Dr. Sanders was her treating physician for sixteen years. The fact that his practice is internal medicine rather than neurology does not negate the fact that he is a qualified physician with more first-hand knowledge concerning Gassaway’s physical and mental well-being than any other medical professional.” *Id.* at \*3.

<sup>6</sup>Fed. R. Evid. 403.

<sup>7</sup>E.g., *State of New York v. Westwood-Squib*, 2001 U.S. Dist. LEXIS 11765 (W.D.N.Y. June 23, 2001) (disallowing legal opinion on allocation of hazardous waste liabilities among responsible parties); *United States v. Phillips*, 478 F.2d 743 (9th Cir. 1973) (finding mixed questions of law and fact in a case involving a violation of narcotics law).

<sup>8</sup>2 Toxic Torts Prac. Guide § 16:3 (2013), discussing *6400 Corp. v. Chevron U.S.A. Inc.*, 2007 WL 209932 (N.J. Super. Ct. App. Div. 2007) (stating that an “expert opinion need not necessarily be limited to the narrowest scope of his expert qualifications, at least in toxic tort litigation,” as long as the proffered opinion is “founded on the expert’s peculiar knowledge or experience.” *Quoting Bahrle v. Exxon Corp.*, 279 N.J. Super. 5, 32, 652 A.2d 178 (App. Div. 1995), *aff’d*, 145 N.J. 144 (1996).)

<sup>9</sup>*Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

<sup>10</sup>293 F. 1013 (D.C. Cir. 1923).

<sup>11</sup>*Daubert*, 509 U.S. at 588; *see also Daubert-Joiner-Kumho: The Brave New World of Expert Evidence*, 15 Tox. L. Rep. (BNA) 1213 (Nov. 23, 2000); Leslie Lunney, *Protecting Juries From Themselves: Restricting the Admission of Expert Testimony in Toxic Tort Cases*, 48 SMU L. Rev. 103 (1994).

<sup>12</sup>Certain jurisdictions such as New Jersey State Courts continue to adhere to the expert standard of “general acceptance” set forth in *Frye*, *supra*.

<sup>13</sup>*Daubert*, 509 U.S. at 588.

<sup>14</sup>*Id.*, 509 U.S. at 588-89.

<sup>15</sup>*Id.* at 589.

this determination, the court looks to many factors, including whether the theory or technique can and has been tested, whether it has been subjected to peer review, the known or potential rate of error, and whether it has been generally accepted. The second requirement imposed by Rule 702 according to the *Daubert* court is that evidence must be relevant, in that it must assist the trier of fact either in understanding the evidence or in determining a fact in issue.

In *Daubert*, a Bendectin products liability case, the Court addressed the admissibility of the testimony of the plaintiff's expert interpreting epidemiological studies conducted by others. The expert's testimony had been rejected by the trial court and the U.S. Court of Appeals for the Ninth Circuit under the *Frye* "general acceptance" standard. The Supreme Court held that the adoption of Federal Rule of Evidence 703 had effectively liberalized and overruled the *Frye* test, "given the Rules' permissive backdrop and their inclusion of a specific rule on expert testimony that does not mention 'general acceptance.'"<sup>16</sup> It substituted a case-specific inquiry by the trial judge, applicable not only to "unconventional evidence," but to other scientific testimony. This adjustment is well suited to the analysis of environmental harms given both the case specific nature of such claims as well as the often multidisciplinary testimony required in the development of proof.

Under *Daubert*, a trial court judge faced with a proffer of expert scientific testimony must determine whether the expert has (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact at issue.<sup>17</sup> The *Daubert* Court noted that many factors will bear on the inquiry and stated that it was not setting out a definitive checklist or test. Because the *Daubert* court found that Rule 702 implies some degree of regulation, the court imposed conditions: "The subject of an expert's testimony must be 'scientific... knowledge,' i.e. "an inference or assertion must be derived by the scientific method."<sup>18</sup> In order to determine whether proffered evidence is "scientific knowledge" that "will assist the trier of fact [usually a jury] to understand or determine a fact in issue," the majority provided a list of four factors (hereinafter the *Daubert* criteria) to assist the trial judge's assessment:

- 1) Ordinarily, a key question to be answered in determining whether a theory or technique is scientific knowledge that will assist the trier of fact will be whether it can be (and has been) tested.<sup>19</sup>
- 2) Another pertinent consideration is whether the theory or technique has been subjected to peer review and publication. Publication (which is but one element of peer review) is not a *sine qua non* of admissibility; it does not necessarily correlate with reliability.<sup>20</sup>
- 3) Additionally, in the case of particular scientific technique, the court ordinarily should consider the known or potential rate of error... and the existence or maintenance of standards controlling the technique's operation.
- 4) Finally, "general acceptance" can yet have a bearing on the inquiry, in the sense that widespread acceptance can be an indicator of reliability, and "a known technique which has been able to attract only minimal support within the community... may properly be viewed with skepticism."<sup>21</sup>

Notwithstanding the provision of specific criteria, the majority explained that any inquiry under Rule 702 should be "flexible."<sup>22</sup> In consequence, these factors were characterized as indicative rather than a "definitive checklist or test."<sup>23</sup>

The Court in *Daubert* added that federal courts would also evaluate admissibility under other applicable federal rules. It specifically noted Rule 703, which limits facts or data upon which experts may rely to that "reasonably relied upon by experts in the particular field,"<sup>24</sup> and Rule 104, which permits the court to exclude relevant evidence if "its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury."<sup>25</sup>

<sup>16</sup>*Daubert*, 509 U.S. at 589.

<sup>17</sup>*Id.*, at 592-593, n.11.

<sup>18</sup>*Id.* at 589-90.

<sup>19</sup>*Id.* at 593(citing K. Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge* 37 (5<sup>th</sup> ed. 1989) ("[T]he criterion of the scientific status of a theory is its falsifiability, or refutability, or testability."))

<sup>20</sup>*Id.* (citing S. Jasanoff, *The Fifth Branch: Science Advisors as Policymakers* 61-76 (1990)).

<sup>21</sup>*Id.* at 594.

<sup>22</sup>*Id.*

<sup>23</sup>*Id.* at 593.

<sup>24</sup>*Id.* at 595.

<sup>25</sup>*Id.* at 592.

The *Daubert* Court also addressed defendants' concern that abandonment of the general acceptance test would result in a "free-for-all" before the jury. Defendants would continue to have available the traditional means of attacking admissible evidence—" [v] igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof."<sup>26</sup>

In *General Electric Co. v. Joiner*,<sup>27</sup> the Supreme Court held that the standard of review of a district court's decision with regard to the admissibility of expert opinion after *Daubert* is abuse of discretion. The Court noted two potential errors in applying the standard of review—that there is a difference in standard of review between decisions to admit expert testimony and decisions finding such testimony inadmissible, and that a different standard of review should apply if the decision on admissibility is "outcome determinative"—and clarified that in both cases, no different standard of review applies. The Court concurred in the district court's evaluation that the proffered expert opinion did not rise above "subjective belief or unsupported speculation."<sup>28</sup> Thus, in practice, the trial court has a great deal of discretion.

In *Kumho Tire v. Carmichael*, the Supreme Court addressed *Daubert*'s applicability to expert testimony that is not classically "scientific," such as engineering or other "specialized knowledge."<sup>29</sup> The Court ruled that the *Daubert* criteria, while originally established for scientific evidence, could be used to evaluate other types of expertise, and that *Daubert*'s fundamental holding—that an expert's testimony must be both relevant and reliable—applies to all experts [7].

In 2002, the drafters of the federal rules amended Federal Rule of Evidence 702 to conform to, or enrich, the Supreme Court's definition of the district court's inquiry in *Daubert*. A trial court then attempts to understand and critically evaluate the expert's scientific or technical methodology, even when that evaluation could determine the outcome of a case. The federal trial courts were thus assigned a substantial task, well beyond the parameters of the general acceptance test of *Frye*: validation of the scientific technique that the expert employs, in its broader application and its case-specific use.

## 2.2. Practice Pointers

Edward Bennett Williams called trial law the "most creative art extant" [8]. This point reflects not only the creativity that lawyers can demonstrate in a moment of brilliance on their feet in a courtroom, but also the expansive skill set that trial lawyers, who are generalists, must bring to their work. There are two key concepts that bring those various skills together: Strategic Thinking and Storytelling. Framing the trial lawyer's various skills in this way helps provide some insight into what good lawyering actually requires. In toxic tort and natural resource damages cases expert testimony forms a critical part of the story. Effective communication with and proper preparation of expert witnesses is important to ensure the science of the case is presented in the most compelling way. An expert's appreciation of the litigation process and goals can enhance his or her contributions to the case. Most importantly, the forensic expert needs to understand the trial lawyer's challenges in order to help develop the case consistent with strict attention to sound science.

### a) The Basics

The fact finder's initial introduction to the expert occurs during the elicitation of the expert's qualifications. An expert's qualifications show the jury that the expert witness has credentials that make his or her opinion worth accepting. The jury will also want to know something about the expert's field of expertise and how it relates to the issues in the case.<sup>30</sup> The expert's qualifications as well as the subject matter of the expert's opinion should be particularly tailored to the case at hand and explained in laymen's terms so that the jurors understand how it helps them to decide the case.

<sup>26</sup>*Id.* at 591. Since *Daubert* was decided, several circuits have applied it in affirming district court exclusion of expert testimony under the *Frye* standard. See *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717 (3d Cir. 1994) (not overruled, but called into question by *Amorgianos v. AMTRAK*, 137 F. Supp. 2d 147, 164 (E.D.N.Y. 2001)); *United States v. Jones*, 24 F.3d 1177 (9th Cir. 1994) (affirming exclusion of expert testimony concerning voice identification); *O'Conner v. Commonwealth Edison Co.*, 13 F.3d 1090 (7th Cir. 1994) (affirming exclusion of expert testimony that plaintiff's cataracts were caused by a radiation dose thousands of times less than that commonly believed by experts to be required to cause this condition). Some courts not following the Federal Rules of Evidence have declined to apply a *Daubert*-type analysis, instead opting for the more restrictive *Kelly/Frye* general acceptance test. See, e.g., *People v. Leahy*, 882 P.2d 321 (Cal. 1994); *State v. Coon*, 974 P.2d 386, 395 (Alas. 1999).

<sup>27</sup>522 U.S. 136, 118 S.Ct. 512, 177 A.L.R. Fed. 667 (1997).

<sup>28</sup>*Joiner*, 522 U.S. at 144-145.

<sup>29</sup>*Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 (1999).

<sup>30</sup>*Breidor v. Sears, Roebuck & Co.*, 722 F.2d 1134, 1138-39 (3d Cir. 1983) ("Where there is a logical basis for an expert's opinion testimony the credibility and weight of that testimony is to be determined by the jury, not the trial judge.").

### b) The Foundation

Rule 703, and similar state evidence rules, establish the nature of the information on which an expert can base an opinion.

The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.<sup>31</sup>

The “facts and data” relied upon by an expert are: (1) the underlying scientific principles, (2) the professional methods used in applying these principles to the facts, and (3) the data or facts which are the subject of the opinion. The expert’s testimony should establish that each of these elements is the type of information reasonably relied on by experts in the field. The opinion is admissible even if it is based on information that might otherwise be subject to objection on hearsay or other grounds. Under Rule 703, experts are assumed to possess the skill to properly evaluate hearsay or other information in their area of expertise and to weigh it appropriately under the circumstances.<sup>32</sup> Rule 703 was designed to “bring the judicial practice into line with the practice of the experts themselves when not in court.”<sup>33</sup>

Although Rule 703 does not require experts to reveal the data underlying their opinions, they may nonetheless be cross-examined regarding any undisclosed data under Rule 705.<sup>34</sup> Indeed, the challenge may be to the integrity of the basis of the opinion. To determine whether the particular types of facts and data used are reasonably relied upon in the expert’s field, the courts often make a preliminary factual inquiry, out of the jury’s presence, under Federal Rule of Evidence 104(a).<sup>35</sup> Testifying experts should read or be provided with a substantive summary of any issues raised in *Daubert* or Rule 104 motions. Such motions often include specifics that opposing counsel may use to impeach the witness’s testimony.

Expert testimony is also subject to the relevancy/balancing test found in Rules 401 through 403. Under this test, all relevant evidence is considered admissible provided its probative value is not outweighed by prejudice or the potential to mislead the jury or consume too much time.<sup>36</sup>

### c) The Importance of Jury Instructions

In the context of a jury trial the expert should be familiar with the jury instructions related to his area of the case as they can highlight particular topics on which the jury will be expected to focus. In addition, walking the expert through these instructions can help identify areas of anticipated focus on cross. Jury instructions also can help identify issues that may not have been specifically addressed in an expert’s opinion but nonetheless may be the subject of questioning and could have a significant effect on the trajectory of the case, including the potential award of damages. The following series of proposed jury instructions in a federal environmental property case<sup>37</sup> tracks the distinction between two types of injury recognized in environmental law and the associated difference in damages available under each category. An expert’s familiarity with these issues can help him navigate questioning aimed to answer these questions and spare the expert the anxiety associated with not knowing the reason behind certain questions. Again, it is not the expert’s job to offer legal opinions.

#### **DAMAGE TO REAL PROPERTY—PERMANENT OR TEMPORARY INJURY**

Permanent injury to property occurs when the property cannot be reasonably repaired so that it will be in substantially as good of a condition as it was before the injury. Injury is permanent when the property cannot be reasonably repaired or when the property can be repaired, but the cost of doing so would be unreasonably high.

<sup>31</sup>Fed. R. Evid. 703.

<sup>32</sup>*In re “Agent Orange” Prod. Liab. Litig.*, 611 F. Supp. 1223, 1245 (E.D.N.Y. 1985), *aff’d*, 818 F.2d 187 (2d Cir. 1987).

<sup>33</sup>Fed. R. Evid. 703 (Advisory Committee’s notes) (A physician in his own practice bases his diagnosis on information from numerous sources, yet the physician makes life and death decisions in reliance upon them. His validation, expertly performed and subject to cross-examination, ought to suffice for judicial purposes).

<sup>34</sup>Fed. R. Evid. 705.

<sup>35</sup>Fed. R. Evid. 104(a) states: Preliminary questions concerning the qualifications of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b). In making its determination it is not bound by the Rules of Evidence except those with respect to privileges.

<sup>36</sup>Fed. R. Evid. 401-403.

<sup>37</sup>*Schneberger v. Apache Corp.*, 1994 OK 117, 890 P.2d 847; *Houck v. Hold Oil Corp.*, 1993 OK 166, 867 P.2d 451; *Briscoe v. Harper Oil Co.*, 1985 OK 43, 702 P.2d 33; *Thompson v. Andover Oil Co.*, 1984 OK CIV APP 51, 691 P.2d 77.

Temporary injury to property occurs when the property can be reasonably repaired and substantially restored to its former condition. Injury is temporary when the property can be reasonably repaired.

#### **PERMANENT OR TEMPORARY INJURIES**

If you find that the plaintiffs' properties have been damaged, you must determine whether the injuries to the plaintiffs' properties are permanent injuries or temporary injuries.

If you decide it is more likely true than not true that the injuries to the plaintiffs' properties can be reasonably repaired, then you must find the injuries to the plaintiffs' properties are temporary injuries.

If you decide it is more likely true than not true that the injuries to the plaintiffs' properties cannot be reasonably repaired or that the injuries can be repaired but the cost of doing so would be unreasonably high, then you must find the injuries to the plaintiffs' properties are permanent injuries.

#### **MEASURE OF DAMAGES TO REAL PROPERTY—PERMANENT INJURY**

If you find the defendant has caused permanent injury to the plaintiffs' properties, you may award damages to the plaintiffs' in the amount you determine to be the difference between the reasonable Fair Market Value of their properties before the injuries and the reasonable Fair Market Value of their properties immediately after the injury. This is referred to as the "Diminution in Value" of the properties.

#### **MEASURE OF DAMAGES TO REAL PROPERTY—TEMPORARY INJURY**

If you find that the defendant has caused temporary injuries to the plaintiffs' properties, you may award damages to the plaintiffs in the amount you determine to be the reasonable Cost of Restoration, along with the loss of rental value or use value, if any, for the two (2) years between 2002 and 2004. This amount altogether must be less than the Diminution in Value of the properties with the temporary injuries left in place.

If you find the Cost of Restoration is greater than the Diminution in Value of the properties, then you must not award more than the Diminution in Value of the properties to the plaintiffs as damages.<sup>38</sup>

In addition, the instructions related to expert testimony as a general matter should be reviewed by the expert. For example, a 7<sup>th</sup> Circuit pattern jury instruction tells the jury that the status of a witness as an expert does not negate the credibility determination reserved for the fact finder—this can help disabuse an expert of the common misconception that only the Judge and not the jury can make such a determination:

#### **EXPERT WITNESSES**

You have heard [a witness] [witnesses] give opinions about matters requiring special knowledge or skill. You should judge this testimony in the same way that you judge the testimony of any other witness. The fact that such person has given an opinion does not mean that you are required to accept it. Give the testimony whatever weight you think it deserves, considering the reasons given for the opinion, the witness's qualifications, and all of the other evidence in the case.<sup>39</sup>

Additionally, although such instructions apply to any testifying witness in a Jury trial, case—experts are no exception and should understand the types of considerations that are appropriate in a trial. Again, using a 7<sup>th</sup> Circuit Pattern Jury Instruction:

#### **TESTIMONY OF WITNESSES (DECIDING WHAT TO BELIEVE)**

You must decide whether the testimony of each of the witnesses is truthful and accurate, in part, in whole, or not at all. You also must decide what weight, if any, you give to the testimony of each witness.

In evaluating the testimony of any witness, [including any party to the case,] you may consider, among other things:

- the ability and opportunity the witness had to see, hear, or know the things that the witness testified about;

<sup>38</sup>*Schneberger v. Apache Corp.*, 1994 OK 117, 890 P.2d 847; *Houck v. Hold Oil Corp.*, 1993 OK 166, 867 P.2d 451; *Briscoe v. Harper Oil Co.*, 1985 OK 43, 702 P.2d 33; *Thompson v. Andover Oil Co.*, 1984 OK CIV APP 51, 691 P.2d 77.

<sup>39</sup>See FED. R.EVID. 602, 701-705. See generally *United States v. Mansoori*, 304 F.3d 635, 654 (7th Cir. 2002), cert. denied 538 U.S. 967, 123 S. Ct. 1761, 155 L.Ed.2d 522 (2003); see also *United States v. Serafino*, 281 F.3d 327, 330-331 (1st Cir. 2002) (court mitigated "whatever special aura the jury might otherwise have attached to the term "expert" by instructing that expert testimony should be considered just like other testimony).

- the witness’s memory;
- any interest, bias, or prejudice the witness may have;
- the witness’s intelligence;
- the manner of the witness while testifying;
- and the reasonableness of the witness’s testimony in light of all the evidence in the case.<sup>40</sup>

In addition to jury instructions, information generated by mock trials or other mock jury proceedings that may provide insight into the thought processes, background and biases of a potential jury can be helpful in preparing the expert to testify and guiding the approach to his trial testimony.

**d) Prior Testimony of the Expert**

When the expert has given a deposition in advance of trial, he will need to refamiliarize himself with his prior testimony in order to prepare for any real or perceived conflicts with his anticipated trial testimony. On cross-examination at trial, opposing counsel may try to impeach the witness’ trial testimony with deposition testimony that could be considered inconsistent.<sup>41</sup> Preparation of the expert witness includes the identification of potential problem statements and the development of a strategy to address them.

In the event the expert has provided testimony on a similar subject matter in prior cases, either at trial or in a deposition, it may be necessary to have the expert review that prior testimony as well.

**e) The Danger of the Expert as Advocate**

Experts are human and are often subject to the same competitive impulses as trial lawyers. A passionate devotion to the case can be a real boon, but an expert who sacrifices his objectivity for advocacy loses credibility and endangers the case. For example, a witness in a recent environmental case offered criticisms of the other party’s scientists. In so doing, the expert witness took every opportunity to offer testimony on, and littered his demonstratives with statements regarding what he asserted was a “non-scientific” aspect of the other side’s analysis. However, in his zeal to criticize the other side, the expert, on cross-examination admitted not only that his work did not satisfy his own standards, but that the approach had been dictated to him by counsel and did not follow the standard scientific approach typically applied under the circumstances:

**Q** ... First, you did not consider or investigate any injury at [the sites] prior to 1977; is that correct.

**A** That’s correct. I did not look at injuries before 1977.

**Q** Okay. The earliest year you considered for accrual of injury in any area at either [of the sites] was 1977; is that correct?

**A** That’s correct.

**Q** Okay. And the reason you limited yourself to 1977 is because you were following the instructions from counsel in doing that; isn’t that correct?

**A** That’s correct.

**Q** Okay. And you agree that that’s not a scientifically based date, that’s just following the instructions of counsel? Can we agree on that?

**A** *I agree that it’s not scientifically based, yes.*<sup>42</sup>

In fact, the expert ultimately admitted that his approach (which involved instructions by counsel contrary to the scientific approach he would normally have taken) was unprecedented:

**Q** Is it unprecedented to do a HEA without looking at historic discharges of hazardous materials and their potential or actual impact on natural resources, yes or no?

**A** Well, all HEAs that I’ve been involved in involve some historic evaluation of natural resources.

**Q** So that the work in this case, the HEA in this case for Exxon is unprecedented as you used that term yesterday, correct? Unprecedented.

**A** I’ve been involved in other HEAs where there has been a certain start date in time for the HEA application that did not involve, and typically because of just lack of information, a detailed evaluation of the kinds of information you’re talking about before the start of the HEA.

**Q** I’m saying any information, not detailed information, any information, you haven’t been involved in a HEA where there’s absolutely no information, no investigation of any historic discharge, correct? Yes or no.

<sup>40</sup>*Id.*

<sup>41</sup>Fed. R. Evid. 801(d).

<sup>42</sup>*New Jersey Department of Environmental Protection v. ExxonMobil Corp.*, No. L-3026-04 consolidated with No. L-1650-05 (Super. Ct. of N.J., Law Div.), Trial Tr. 7/10/14, p. 20:19-21:6.



A I guess I would say yes.<sup>43</sup>

The expert witness further testified that:

**Q** And you say, an important part of those NRDA's is concerned with the documentation of historical timelines that describe the occurrence of any releases of hazardous substances and associated injuries or loss of habitats for natural resources. The accurate determination of this timeline, from the start of any loss to the return of any baseline condition, is critical to a NRDA because the losses of habitat or services over time are frequently entered into a HEA to calculate the net present value of the resources that were lost to the public. Do you see that?

A Yes, I do.

**Q** And that critical work, that critical important timeline work was not done here by the [Party's experts], correct?

A No, it was not.<sup>44</sup>

It never hurts to remind experts that they should not forget to exercise common sense and objectivity in the formulation of their opinions and in preparing their testimony.

#### **f) Timing of Environmental Injury**

When an event leading to an environmental injury occurred many years in the past or over an extensive amount of time, an expert witness will be necessary to help determine when that injury began. In making this determination, an expert should rely upon his expertise and the factual information available. Review and interpretation of historical records, including documents and photographs, can be extremely useful in preparing a timeline on which to focus the investigation into the environmental insult. In addition, certain forensic methods can be employed in order to determine approximate date(s) of the environmental insult and damage. To the extent historic records are not available or not illustrative and forensic methods are unavailing under the circumstances of the case, case law supports a court's accept the best information available in order to reach an informed conclusion.<sup>45</sup> Although it may be tempting for a trial attorney to attempt to shape the expert's analysis using legal principles pertaining to when damages begin to accrue, an expert should not abandon reliable scientific methods to support an attorney's legal argument. If an expert has made a proper assessment as to the timing of the injury based upon the aforementioned information, the amount of damages to be recovered may be adjusted later pursuant to applicable legal rulings pertaining to the timing of such damages.

#### **g) The Checklist**

A checklist for expert preparation that may be useful has been suggested by one commentator.<sup>46</sup> See Appendix A.

#### **h) The Expert Cross-Examination**

The essence of cross-examination is communication. The examiner shapes the message to the trier of fact using tightly worded questions calling for a "yes" or "no" answer.

Indirect messages to the trier of fact regarding the unreliability of the witness are often delivered through body language, the screaming silence of an unanswered question, or the too-long pause before the witness can answer. To get to this point, great preparation and good instincts are vital.<sup>47</sup>

Cross examination of an expert witness should not be undertaken unless it is possible to succeed in attaining certain objectives listed in Appendix B.

### **3. Cross-Examination Examples**

Learned Hand targeted venality and authority as the sources of most problems with expert witnesses [9]. Both

<sup>43</sup>*Id.* Trial Tr. 7/10/14, p. 69:3-23.

<sup>44</sup>*Id.* Trial Tr. 7/10/14, p. 134:22-135:13.

<sup>45</sup>*See, e.g., Lasker v. Lasker*, 91 N.J. Eq. 352, 353 (Ch. 1920) ("And the one general rule that runs through all the doctrine of trial is this, that the best evidence the nature of the case will admit shall always be required, if possible to be had; but if not possible, then the best evidence that can be had shall be allowed."); *Paolicelli v. Wojciechowski*, 132 N.J. Super. 274, 278-79 (App. Div.), *certif. den.*, 68 N.J. 153 (1975) ("Evidence affording a basis for estimating damages with some reasonable degree of certainty is sufficient to support an award of compensatory damages.").

<sup>46</sup>Kraft, *Using Experts in Civil Cases*, Practising Law Institute, at 32-34 (1977).

<sup>47</sup>Some added leeway is given the examiner of an adverse witness or of a witness on cross-examination. For example, counsel may be engaged in legitimate exploration and may not be able to indicate to the court the testimony he or she wants to elicit. *Thompson v. Lillehe*, 273 F.2d 376, 385 (8th Cir. 1959).

are great fodder for cross-examination.

If during cross examination of an expert you can show the finder of fact that the expert's opinion lacks a solid scientific basis, fails to take into account the material facts of the case or is otherwise invalid, you are likely to destroy any aura of authority. For example, in a recent natural resource damage trial, the responsible party called an ecotoxicologist to the stand to give his opinion that some of the contaminated wetlands on the property at issue looked uninjured based on what he was able to see on the surface of the land. The cross-examination of the purported expert focused on the undeniable fact that *appearances can be deceiving* and used this as an organizing theme. Because appearances can be deceiving, scientific testing is necessary to determine the actual circumstances involving contamination. The revelation during cross-examination of the purely superficial inquiry performed by the expert completely undercut the reliability of the opinions he offered on the subject of contamination.

**Q** ... [Y]ou agree that, you know, sometimes in ecotoxicology, the superficial appearances can be deceiving, correct?

**A** Yes, sir...

**Q** Okay. And just so we're clear, there are no specific ecotoxicology tests that you did other than the observations that you described for us as relates to the Spartina marsh that we discussed, correct?

**A** I did not take soils and sediments back into the laboratory and conduct laboratory toxicity tests.<sup>48</sup>

...

**Q** You agree that a salt marsh wetland habitat is more than just Spartina, correct?

**A** Yes, sir, absolutely.

**Q** *And you also agree that in some cases, appearances can be deceiving when looking at a salt marsh, correct?*

**A** *Yes, sir, absolutely.*

**Q** Okay. And so if you're just looking at the Spartina on the surface, you cannot, according to the general literature, generally-accepted literature, draw inferences about what's going on below the surface in a salt marsh, correct?

**A** Well, ultimately you will be able to. You can draw inferences about what's going on below ground by also sampling below ground.

**Q** You didn't sample below ground, correct?

**A** I didn't—I did not sample routinely below ground. I certainly looked below ground at the roots on these Spartina plants.

**Q** Okay. So contamination in the ground that might not affect Spartina growth above the ground has been found to adversely impact below-ground critters such as the macro invertebrates, correct?

**A** As a general matter, or at this site?

**Q** As a general matter.

**A** I think there are some instances as a general matter where the Spartina was not impacted and the invertebrates were impacted.<sup>49</sup>

After exposing the superficial nature of the expert's analysis, further cross-examination revealed his reliance on nonstandard and purely subjective methods which extinguished any remaining credibility.

**Q** And with respect to your 2008 visit, there are no notes whatsoever, correct?

**A** I did not take notes in 2008. That's correct. Yes, sir.

**Q** Okay. You would agree that as a general matter, the notes don't contain many details, correct?

**A** I would agree with that. That's my practice. That's the way I work.<sup>50</sup>

**Q** There are standards that are used in training graduate students and students in terms of fieldwork and note-taking and the importance of being conscientious in their note-taking?

**A** It depends on what kind of situation they're going into and in terms of whether we're talking about a laboratory study, a field study, a greenhouse study and so on.

**Q** And something like this where you're going out to do a site reconnaissance, isn't it general—wouldn't you

<sup>48</sup>*Id.* Trial Tr. 8/5/14, p. 168:13-169:7.

<sup>49</sup>*Id.* Trial Tr. 8/5/14, p. 165:21-166:23.

<sup>50</sup>*Id.* Trial Tr. 8/6/14, p. 74:14-21.

be training your graduate students to try to get as much information as possible, as site specific as possible?  
A I would say that you would want as much site-specific information as you possibly could.<sup>51</sup>

...

Q You said you marked on your leg the stem heights, multiple times?

A I marked the height of the minimum stem height on my leg, in other words, how high do those stems come on my leg.

Q Are you right handed or left handed?

A I'm right handed.

Q Which leg do you usually mark on?

A I use my right leg because it's an inch shorter than my left leg and so I have to stick with the correct leg.

Q And you had no GPS for fieldwork in 2007; is your testimony?

A I did not use GPS.

Q Now, when you mark it on your right leg with your right hand; is that what your testimony is?

A Yes, sir.

Q What kind of pen—do you use a pen? A marker? A pencil?

A I don't use a marker. I just use a particular location on my leg.

Q So you just touch your leg?

A Absolutely, yes, sir.

Q And then when you get back home, you try to remember where exactly you touched your leg?

A Yes, sir.

Q You didn't have a marker or anything?

A I'm sure I had a permanent pen, but I did not mark my leg with a permanent pen. No, sir.<sup>52</sup>

In sum, cross-examination, when used effectively, can be used to undermine the opinions of an opposing expert witness, the methodologies and analysis used to reach those opinions.

#### 4. Conclusion

Expert testimony is a critical component of successful toxic tort and natural resource damages trials, but to extract the best use of scientific evidence trial counsel must develop a case strategy and framework that highlight the meaning of the science. Without a compelling and coherent story, the case can be lost in the minutiae of scientific facts and theories.

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<sup>51</sup>*Id.* *Trial Tr.* 8/6/14, p. 88:1-15.

<sup>52</sup>*Id.* *Trial Tr.* 8/6/14, p. 84:5-85.

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## Appendix A. Experts in Natural Resource Damages and Toxic Tort Litigation

A checklist for expert preparation that may be useful has been suggested by one commentator.<sup>53</sup>

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1. Be sure the expert is objective and truly impartial, rather than serving as a surrogate advocate.
  2. Be sure the expert avoids inserting himself into the case, as by communicating with the adverse party, his counsel, or his expert or other witnesses.
  3. Be sure the expert avoids any references to the personalities of litigants or of counsel.
  4. The fee of the expert should be no more than commensurate with the time and effort expended in the particular case, the difficulty of the case, and the expert's professional charges.
  5. The expert should simply answer the questions put clearly and firmly, and not volunteer any extraneous matter (such as "You'll stop at nothing.").
  6. The attorney calling the witness should carefully review the records of the witness' prior professional association and engagements, and seek to learn his peers' evaluation of the competence of the witness.
  7. The witness' prior experience as an expert witness should be explored and the number and types of the litigations should be accurately ascertained, and his prior opinion testimony scrutinized.
  8. He should be cautioned to avoid any public comment, above all to the press, radio, TV or other publicity media, including social media.
  9. Any and all books, articles or blogs written by the witness, or even for him, or under his name by free-lance writers, or others, should be carefully reviewed for inconsistencies with the witness' proposed testimony at the future trial. If the expert is affiliated with a consulting firm, the review should extend to positions taken by that firm.
  10. The witness should not be privy to counsel's trial strategies, in part because it confuses the core message of helping the finder of fact.
  11. Counsel calling the witness should decide whether any derogatory materials exist about the witness, so counsel can refrain from "opening the door" to such hearsay matters of opinion and speculation that would otherwise probably be excluded by the trial court.
  12. Counsel might do well to ascertain all other names which the witness has used or has been known by, or under which he has written.
  13. The lawyer might warn the prospective witness that his entire past life, and especially all his earlier professional career, may be subjected to intense, outside investigation, and in-court interrogation, so that he should reveal to the attorney calling him any earlier associations or experiences that might be invoked in an effort to discredit him on the stand.
  14. The witness should be reminded of Harry Truman's oft-quoted remark, "If you can't stand the heat, stay out of the kitchen." The witness stand is no place for the faint-hearted, however valid their opinions on the subject at hand.
  15. The witness who chooses to run the gauntlet of possible severe cross-examination should be counseled to keep his cool. While exhibiting reasonable resiliency, he should be encouraged to stick by the opinions he has developed as a result of years of professional training and experience and which he has stated under oath in answer to the attorney qualifying him as a true expert whose expressions of opinion were entitled to be received by the court.
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## Appendix B. Experts in Natural Resource Damages and Toxic Tort Litigation

Cross examination of an expert witness should not be undertaken unless it is possible to succeed in attaining one or all of the following objectives:

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1. Successfully prove that the expert is not qualified. If he is clearly qualified, do not question him on this point.
  2. Prove that the witness is not honest, sincere or impartial, or that he is biased or prejudiced, or has some interest to gain by testifying. Again, unless you can establish this in a clear-cut manner, leave him or her alone on this point.
  3. Prove that the opinion of the expert is in error. He may be perfectly sincere but, because of a hurried examination or bad instructions from counsel, his opinion is faulty.
  4. Gain admissions which support the testimony of your expert. He might even admit that because reasonable persons differ, the opinion of your expert may have merit.
  5. That the facts he assumed to be correct are not correct or are incomplete. For example, the alleged facts incorporated in a hypothetical question may be incorrect, and if that can be established, he is out on a limb.
  6. If he assumed facts or relied on no facts, then show that the facts are actually contrary to his position.
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<sup>53</sup>Kraft, *Using Experts in Civil Cases*, PRACTICING LAW INSTITUTE, at 32-34 (1977).