

## Chapter 8

### **EXPERT WITNESSES**

---

#### **§ 8.01 INTRODUCTION**

In litigation, this is the era of the expert witness. The trial of cases is becoming dominated by the opinions of experts to an extent never before seen in the judicial system. Virtually all cases that go to trial today involve the testimony of expert witnesses. One study of civil jury trials revealed that expert witness were called in 86% of cases at an average rate of four experts per case.<sup>1</sup> This is hardly a surprising development in our modern technological society. The types of cases being brought to court increasingly involve questions of science, engineering, psychology and economics. The routine personal injury case now involves every kind of expert from the family doctor to technicians who operate complicated diagnostic equipment to professional job counselors and economists to predict the future. Products liability and routine tort cases require engineers, architects, physicists, and designers. Criminal cases need psychiatrists and chemists. Whole new fields of expertise have been invented to serve the trial system, such as forensic medicine and accident reconstruction.

It is therefore critical that trial lawyers know how to use expert witnesses effectively and how to cross-examine their opponent's experts. In many ways, the techniques and tactics of examining expert witnesses are the same as those for other witnesses. In other ways, they can be quite different. This chapter discusses the law and tactics of expert witnesses, assuming that you already know how to examine ordinary lay witnesses. You should not attempt to conduct either a direct or cross-examination of an expert without first referring to Chapters 6 and 7 on the examination of lay witnesses.

#### **§ 8.02 SAMPLE DIRECT AND CROSS EXAMINATION OF AN EXPERT WITNESS**

In the movie *The Verdict*, a young woman named Deborah Ann Kaye has suffered brain damage during an operation. Her family has sued the surgeon, Dr. Marks, and the anaesthesiologist, Dr. Towler, for malpractice. The defendants are important and powerful men, and plaintiffs cannot find an expert witness in Boston willing to testify against them. They finally locate an anaesthesiologist named Dr. Thompson in New York who frequently testifies against other physicians in malpractice cases. In the movie, the actual courtroom appearance of Dr. Thompson is a disaster. Paul Newman cannot conduct a coherent direct examination, the judge bullies the witness, and then the judge excuses Dr. Thompson before any cross-examination can take place. This is what the direct and cross-examination should have been:

PLAINTIFF'S ATTORNEY: We call Dr. Lionel Thompson. [witness is sworn]

---

<sup>1</sup> Samuel Gross, *Expert Evidence*, 1991 Wisc. L. Rev. 1113, 1119.

Q: What is your name?

A: Lionel Thompson.

Q: Your occupation?

A: I am a doctor, and have been all my life.

Q: Did you examine Deborah Ann Kaye and review her file?

A: The young woman who suffered massive brain damage while in Dr. Towler's care? Yes.

Q: What is your educational background?

A: I went to Howard University as an undergraduate and majored in Chemistry. I went to medical school at N.Y.U. and got my M.D. in 1958.

Q: Did you do a residency?

A: Yes. I did a residency in general surgery at Bellevue Hospital in New York, and a second residency in anesthesiology, also at Bellevue.

Q: What did you do after that?

A: I stayed on the staff at Bellevue for five years, and then joined their Emergency Medicine group. I practiced there for almost twenty years, but the pace of the Emergency room became too much for me, so I joined the surgical staff of the Hempstead Hospital on Long Island. I am still on staff there.

Q: Do you hold any state licenses?

A: Yes. I am licensed to practice medicine by the state of New York.

Q: Are you a member of any medical societies?

A: Yes. The A.M.A., the New York State Medical Society, the Nassau County Medical Society, and Concerned Physicians for Peace in the Middle East.

Q: Do you have experience with anaesthesiology?

A: Yes. When I was at Bellevue, most of my practice was anaesthesiology. At Hempstead I did mostly general surgery, but of course, the surgeon must work closely with the anaesthesiologist.

Q: Have you ever testified as an expert witness before?

A: Yes, several times.

Q: Do you have any experience reviewing other doctors' work?

A: Yes. I was on the peer review committee of Hempstead Hospital from 1987 to 1995, that was in charge of reviewing complaints against staff doctors.

Q: What kinds of cases did you review?

A: All kinds, but mostly they were cases where a patient had suffered serious complications following surgery.

Q: Counting both your experience on the peer review committee and your consulting work, about how many cases of suspected medical malpractice have you investigated?

## § 8.02 SAMPLE DIRECT AND CROSS OF EXPERT WITNESS 333

A: Around two hundred.

PLAINTIFF'S ATTORNEY: Your honor, we tender Dr. Thompson as an expert medical witness for the purpose of reviewing the care given to Deborah Ann Kaye by the defendants.

DEFENSE ATTORNEY: We'll waive voir dire and stipulate that Dr. Thompson is an expert witness.

Q: Dr. Thompson, are you familiar with a patient named Deborah Ann Kaye?

A: Yes. At your request, I reviewed a set of hospital records from St. Catherine Hospital on a patient named Deborah Ann Kaye.

PLAINTIFF'S ATTORNEY: May I approach the witness with an exhibit?

COURT: Yes

Q: Handing you what has been marked Plaintiff's Exhibit 21, do you recognize these documents?

A: Yes, these are the hospital records I mentioned.

Q: Are you familiar with hospital records in general?

A: Of course. I have been on hospital staffs for fifty years. Medical practice all follows pretty much the same protocols with respect to record keeping.

Q: Was there anything unusual about the records you looked at?

A: No, they appeared typical.

Q: Are hospital records reliable and generally relied on by doctors?

A: They are the essential life blood of the medical system. Several doctors and nurses on different shifts at a hospital may have to treat a patient or respond to a sudden emergency. The records have to be accurate and complete and up-to-date, because we all rely on them.

PLAINTIFF'S ATTORNEY: I offer Plaintiff's 21 into evidence. They were stipulated pretrial.

DEFENSE ATTORNEY. We have no objection

COURT: Admitted

Q: Dr. Thompson, did you examine Ms. Kaye at the Northern Chronic Care Facility?

A: I did.

Q: Based on your review of the hospital records and your examination of Deborah Ann Kaye, do you have an opinion as to what happened to her on May 12, 2001?

A: Yes. She suffered cardiac arrest. She was undergoing a C-section when . . .

Q: I'm sorry, what's a C-section?

- A: It's short for Caesarean section. If there is a problem with a woman giving birth vaginally — the normal way — the obstetrician may decide to remove the baby from the womb by making a surgical opening called a C-section. You cut a horizontal slit through the abdomen wall, reach in and remove the baby.
- Q: Is the woman placed under anaesthesia?
- A: Of course.
- Q: I'm sorry for the interruption. You were saying that Ms. Kaye was undergoing a C-section?
- A: Yes. She apparently spit up something into her mask that stopped her breathing.
- Q: Excuse me, what is a mask?
- A: That's the plastic face covering that goes over the nose and mouth of a surgical patient. Oxygen and the gas used for anaesthesia flow through it into the patient's nose and mouth.
- Q: Does it completely block outside air?
- A: Yes. The anesthesiologist needs to be able to precisely regulate the air-gas mixture, so the patient remains unconscious through the surgery but gets enough oxygen. You couldn't do that if the mask leaked air in unknown amounts.
- Q: Okay. What happened when Ms. Kaye spit something into her mask?
- A: It blocked the flow of air, and she couldn't breathe properly. The concentration of anaesthesia got too high, and her heart stopped. When the heart stops, the brain is deprived of oxygen. You get brain damage. That's why she is in the state she is in today.
- Q: Do the records indicate what steps the doctors took to restore her heartbeat?
- A: Yes. They used closed chest compression and artificial respiration.
- Q: Why not a crash cart and those electric shock things you see on television?
- A: They are called cardioverters. The records do not say why one was not used. There is one in every operating room.
- Q: Can you tell from the records how long it took to restore Mrs. Kaye's heartbeat?
- A: The records say that Dr. Towler restored the heart beat in three to five minutes. In my opinion, that is not accurate. There's too much brain damage. In my opinion it took much longer, nine or ten minutes. By then it was too late.
- Q: Dr. Thompson, based on your review of these records and examination of the patient, did you form an opinion as to the standard of medical care provided to Mrs. Kaye in those critical minutes by Doctors Marks and Towler?
- A: Yes, I have.

## § 8.02 SAMPLE DIRECT AND CROSS OF EXPERT WITNESS 335

- Q: What steps did you take to arrive at this opinion?
- A: I reviewed the hospital records on the patient, and compared what they had done to the protocol for such emergencies laid out in a chapter in one of the leading medical textbooks on anaesthesiology.
- Q: Written by whom?
- A: The one I used was actually written by the defendant, Dr. Robert Towler.
- Q: Is this a reliable method for reviewing the performance of a doctor?
- A: Yes. This is the standard procedure used by medical peer review committees to review the performance of a staff doctor. Hospitals around the country use this procedure and rely on it in evaluating the performance of their own staff.
- Q: What is your opinion, Dr. Thompson, as to the medical care received by Mrs. Kaye?
- A: In my opinion, it fell below the minimal standard of competent medical care required of an anaesthesiologist under the circumstances.
- Q: In what ways?
- A: They did not notice and react quickly enough to two separate emergencies. There is always a danger that a patient under anaesthesia will throw up in her mask, so it is the anaesthesiologist's responsibility to constantly monitor that mask. They are clear plastic, so you can see anything that comes out of the mouth. No one noticed that she had spit up. Had Dr. Towler noticed, he could have cleaned out the airway and nothing would have happened.
- Q: What was the second problem?
- A: No one noticed for a few minutes that her heart had stopped. The level of brain damage indicates the heart had been stopped for around ten minutes. The records indicate that it took three to four minutes to restore her heartbeat. That means no one noticed for over five minutes that her heart had stopped. Again, this is the responsibility of the anaesthesiologist. The heart monitor faces his station. It also means they must have had the sound turned off on the heart monitor, because otherwise it would have let out a loud alarm that the heart had stopped.
- PLAINTIFF'S ATTORNEY: No further questions.
- COURT: Cross-examination?
- DEFENSE ATTORNEY: Good morning doctor. Dr. Thompson, just so the jury knows, you never treated Deborah Ann Kaye, is that correct?
- A: Yes, that's correct. I was engaged to render an opinion.
- Q: Engaged to render an opinion, for a price. You are being paid to be here?
- A: Yes, just as you are sir.

- Q: Are you board certified in Anesthesiology?
- A: No, I'm not. It's quite common in New York State to practice. . . .
- Q: Yes, I'm quite sure it is, but this is Massachusetts. Are you board certified in Internal Medicine?
- A: No.
- Q: Obstetrics?
- A: No.
- Q: Surgery?
- A: No. I'm just an M.D.
- Q: Do you know Dr. Robert Towler?
- A: I know of him.
- Q: How is that?
- A: Through his book.
- Q: What book is that?
- A: Methodology and Practice in Anesthesiology.
- Q: How old are you doctor?
- A: I'm seventy-four years old.
- Q: Do you still practice a lot of medicine?
- A: I'm on the staff of . . . .
- Q: Yes, yes, I've heard that, but do you still have a lot of patient contact?
- A: No.
- Q: But you do testify quite a bit against other physicians. Isn't that correct?
- A: Yes.
- Q: You are available for that so long as you're paid to be there?
- A: Sir, yes. So long as a thing is wrong, I am available. I am seventy-four years old, I'm not board certified, but I've been practicing medicine for forty-six years and I know when an injustice has been done.
- Q: Uh huh. In fact, testifying in medical malpractice cases is your primary source of income, correct?
- A: Yes.
- Q: Now, you mentioned on direct something about the failure to use a cardioverter to restore the heartbeat, right?
- A: Yes.
- Q: In Dr. Towler's book on Anaesthesiology, it has a chapter on cardiopulmonary issues. Are you familiar with it?
- A: Yes.
- Q: And you have already testified that his book is a reliable, standard text in the field, correct?

A: Yes.

Q: Directing your attention to page 322, doesn't it say that the use of a cardioverter is contraindicated for most heart failure while a patient is under anaesthesia, because it might induce lethal ventricular fibrillation unresponsive to further electrical shocks?

A: Yes.

Q: Fibrillation is a rapid muscle spasm of the heart, right?

A: Yes.

Q: Lethal fibrillation means the patient would die from it, right?

A: Yes.

Q: Finally, let's make sure we understand your opinion. Are you saying that failure to restore a heart beat within nine or ten minutes in itself constitutes bad medical practice?

A: Of course not.

Q: So the nine minute lapse in restoring the heart beat is not by itself an indication of malpractice?

A: In that small context I would have to say no.

Q: And you weren't there in that operating room on May 12, were you?

A: No.

Q: So you didn't see what happened?

A: No.

Q: You didn't see how hard these doctors worked to save Mrs. Kaye's life?

A: No.

Q: Is it possible that any slight delays in responding to Mrs. Kaye could have been caused by the doctors concern for the life of the baby that was being born?

A: Possibly.

DEFENSE ATTORNEY: No further questions.

### NOTE

**Sample witness examinations.** Several good examples of the direct and cross-examinations of expert witnesses can be found in JAMES W. JEANS, LITIGATION §§ 11.29, 16.15 (2d ed. 1992); and FRED LANE, LANE'S GOLDSTEIN TRIAL TECHNIQUE, chapter 16 (3d ed. 1984).

### § 8.03 LEGAL FRAMEWORK

The legal rules concerning expert testimony fall into five categories:

- **Qualifications.** The witness must be properly qualified to be an expert.

- **Necessity.** The subject matter must be sufficiently complicated that expert testimony will be helpful to the jurors.
- **Scientific reliability.** Techniques and theories used or relied on by an expert must be scientifically reliable.
- **Opinion rule.** Experts may testify to a wide range of opinions based on personal knowledge, reliable hearsay, or facts presented in a hypothetical question.
- **Learned treatises.** Experts may be cross-examined concerning inconsistent statements in learned treatises.

### [A] IS THE WITNESS QUALIFIED AS AN EXPERT?

In order for a witness to testify as an expert, he or she must be qualified by reason of knowledge, skill, experience, training, or education in a field of specialized knowledge. The question of the witness's competency is left to the sound discretion of the trial judge, although in the modern era it is rare for a judge to refuse to qualify a witness unless the person is totally lacking in credentials.<sup>2</sup> In order to lay the foundation, you must call your witness to the stand and elicit testimony about that person's credentials, unless your opponent stipulates to the witness's expertise. Since the possession of sufficient qualifications concerns the competency of the witness to testify, your opponent has the right to conduct a voir dire — to cross-examine the witness on his or her qualifications *before* the witness gives further testimony.

After you have elicited the witness's qualifications, you should formally tender the witness to the court as an expert in a particular field of specialty.<sup>3</sup> Forgetting to make this formal offer is not fatal, however; a qualified witness may give opinions whether or not previously tendered to the court as an expert.<sup>4</sup> If your opponent has any objections to the witness being accepted as an expert, or to the areas in which he or she is qualified, these objections probably should be made at the time the witness is tendered as an expert.

### [B] IS THERE A RELEVANT ISSUE ON WHICH EXPERT TESTIMONY IS PERMITTED?

Before a qualified expert will be permitted to testify, the judge must determine that the issues are complex enough to warrant expert testimony. This is a relevance determination: Will the assistance of an expert provide probative information that the jury needs that would be difficult to supply without an expert? The modern trend favors the use of experts whenever they will be of any assistance to the jury. Federal Rule of Evidence 702 provides:

If scientific, technical, or other specialized knowledge will assist the [jury] to understand the evidence or to determine a fact in issue, a witness qualified as an expert . . . may testify.

<sup>2</sup> See *Balfour v. State*, 427 N.E.2d 1091 (Ind. 1981) (police officer held to be an expert after only four hours of training); *Central Ill. Light Co. v. Porter*, 96 Ill. App. 2d 338, 239 N.E.2d 298 (1968) (wildlife biologist, conservation officer, and duck hunter all qualified to give opinions on effect of power lines on duck hunting).

<sup>3</sup> *CFUS Properties v. Thornton*, 539 S.E.2d 571 (Ga. App. 2000). Cf. *Darbonne v. Wal-Mart Stores*, 774 So.2d 1022 (La. App. 2000) (no legal requirement that witness be formally tendered).

<sup>4</sup> E.g., *State v. Greime*, 388 S.E.2d 594 (N.C.App. 1990).

Under older common law, the test was stricter. Expert testimony was not admissible unless an issue was completely beyond the understanding and common experience of the average juror. The modern trend seems more consistent with other rules of relevancy that admit any nonprejudicial testimony with probative value, even if the probative value is small. Expert testimony with a high potential for confusing the issues or arousing prejudice can be ruled inadmissible despite having some probative value, just like any otherwise relevant evidence.<sup>5</sup>

Under older common law, experts were not permitted to state opinions on the ultimate issues the jurors were supposed to decide. Thus, in a negligence case, experts could not “invade the province of the jury” by giving an opinion on whether injuries were caused by an accident. Although some jurisdictions still pay lip service to this doctrine, it has largely disappeared.<sup>6</sup>

### [C] IS THE PROPOSED TESTIMONY SCIENTIFICALLY RELIABLE?

In conducting their investigations and arriving at opinions, experts rely on scientific theories, principles, techniques and equipment. For example, in diagnosing the extent of a patient’s head injuries, a neurologist may look at X-rays and brain scans, consult the chief of neurology at the hospital, follow a diagnostic protocol learned in medical school, and take into account something read in the latest issue of the *New England Journal of Medicine*. The reliability of the doctor’s diagnosis depends on the underlying reliability of the tests conducted and the theories and procedures relied on. Proving the scientific reliability of the evidence is part of the foundation for the opinion itself.

There are several ways you can establish scientific reliability. Some scientific principles are so generally understood that they need no proof, such as the fact that things fall down and not up, and that serious injuries result from a head-on collision between two vehicles traveling at 70 m.p.h. Other matters of scientific information can be readily looked up in a typical home encyclopedia or other reference book. For example, anyone can easily find out such matters as whether the “pit bull” is a distinct breed of dog, or how many feet per second a car travels when moving at 60 m.p.h. These matters of common knowledge or ready verification may be established through Judicial Notice.<sup>7</sup> Beyond these basic matters, however, you must prove scientific reliability through testimony.

- ***Scientific reliability of the field itself.*** If a discipline purports to be science, you must prove it is in fact scientifically reliable. Some fields, like chemistry, are obviously scientifically reliable, and no proof is needed. The judge may take judicial notice. Some fields,

<sup>5</sup> See *Boren v. Burlington No. & Santa Fe Ry.*, 637 N.E.2d 910 (Neb. App. 2002).

<sup>6</sup> See, e.g., *Marx & Co. v. Diners’ Club, Inc.*, 550 F.2d 505 (2d Cir. 1977) (opinion on legal obligations of parties under a contract inadmissible).

<sup>7</sup> See Fed. R. Evid. 201. (courts must take judicial notice of a fact of common knowledge or one capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned).

like astrology, are obviously not reliable. But what about chiropractic, accident reconstruction, handwriting identification, or carpet fiber comparison. Some judges may accept them without question, others may be skeptical. You should be prepared to elicit testimony about the underlying reliability of the field itself.

- **Scientific validity of a (new) theory within a field.** Within a generally reliable field, experts rely on particular scientific theories or base their testimony on a particular body of literature. Just because a field is reliable does not mean that all theories within it are. You must prove that the theories relied on by your expert are reliable. For example, everyone agrees that psychology is a scientifically reliable field. But what about battered woman syndrome or child abuse accommodation syndrome? Before an expert may base testimony on those theories, the proponent must prove they are reliable.<sup>8</sup>
- **Scientific validity of particular tests.** In most cases, experts called for trial have conducted one or more tests or experiments, or followed a diagnostic procedure in order to prepare an opinion or diagnosis concerning the disputed facts. The tests or procedures used must be scientifically reliable. For example, a physician may diagnose plaintiff's medical condition based on an MRI, an EEG, a physical examination, and the patient's self-reported medical history. Before the expert could give the diagnosis, the proponent of the testimony would have to prove that the tests relied on were scientifically reliable. This is one common battleground of expert testimony — a well credentialed expert in a legitimate field deviates from standard protocols or develops a new testing procedure.

1. An epidemiologist gets no significant results using the statistical convention  $p < .05$ , so re-analyzes the data using  $p < .10$ .<sup>9</sup>

2. After other experts find no trace of asbestos fibers in plaintiff's lungs using conventional methods, a biochemist adapts a method used to detect asbestos in ceiling tile and discovers such fibers.<sup>10</sup>

The proponent must prove that this is a legitimate testing technique that produces scientifically reliable results.<sup>11</sup>

- **Scientific reliability of procedure used.** Most tests, including such standards as the EKG and the Breathalyzer, produce reliable

<sup>8</sup> Compare *Marley v. State*, 747 N.E.2d 1123 (Ind. 2001) (battered woman syndrome shown to be reliable; admissible) with *Fleener v. State*, 656 N.E.2d 1140 (Ind. 1995) (child sexual abuse syndrome not shown to be reliable; not admissible).

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

<sup>10</sup> *Braun v. Lorillard, Inc.*, 84 F.3d 230, 234–35 (7th Cir. 1996) (finding a particular testing procedure used to detect asbestos fibers unreliable);

<sup>11</sup> See, e.g., *O'Conner v. Commonwealth Edison Co.*, 13 F.3d 1090, 1106–07 (7th Cir. 1994) (although exposure to radiation can induce cataracts, and many doctors routinely make such diagnoses, the particular method of diagnosis used by the expert was unreliable).

results only if the proper procedures are followed. The proponent must in all cases prove that the procedures were done correctly.<sup>12</sup>

- ***The opinions offered by experts at trial must have been arrived at in a scientifically reliable manner.***

The heart of expert testimony is the opinion.

1. A physician states an opinion that exposure to defendant's herbicide caused plaintiff's injuries.<sup>13</sup>
2. An engineer states an opinion that a defect in a seat belt caused it to release inadvertently during an accident.
3. A state police analyst testifies that a hair found in defendant's car is probably from the victim.
4. A technician from a private DNA lab testifies that blood from the defendant's clothing was the victim's blood.
5. A psychologist states an opinion that a child's behavior is consistent with sexual abuse.

These opinions must be reliable — that is, the expert must have properly followed the rules, procedures, methodology and conventions of his or her discipline. This is the second battleground of scientific evidence — well credentialed experts from a legitimate field, applying standard procedures and protocols, but reaching unusual opinions. Is an unusual conclusion simply legitimate differences of opinion or “junk science” from hired guns?

What constitutes “proof” of scientific reliability? The United States Supreme Court addressed this question in *Daubert v. Merrell Dow Pharmaceuticals*.<sup>14</sup> The Court declined to set out a definitive checklist or test for determining reliability, leaving it as a “flexible” inquiry. The basic criterion of reliability is whether the testimony being offered has been “derived by the scientific method” or is merely the “subjective belief or unsupported speculation” of the expert. The primary factor that distinguishes scientific method from subjective belief is reliance on empirical data. Scientists test their theories by conducting experiments, making controlled observations, and basing their conclusions on those results. Thus, the trial judge should look first to whether the proffered testimony is supported by data or is just an “educated guess.”<sup>15</sup>

The Supreme Court set out four specific factors that would be useful in making the determination whether proposed expert testimony qualified as “scientific knowledge.” Almost every scientific evidence case begins with these four factors:

- ***Testing:*** Ordinarily, a key question to be answered in determining whether a theory or technique is scientific knowledge that will

<sup>12</sup> *E.g.*, *Bowman v. State*, 564 N.E.2d 309 (Ind. App. 1990) (prosecutor must establish that breathalyzer operator strictly followed correct procedures).

<sup>13</sup> See *Hottinger v. Trugreen Corp.*, 665 N.E.2d 593 (Ind. App. 1998).

<sup>14</sup> 509 U.S. 579, 593–94 (1993).

<sup>15</sup> See *Ancho v. Pentek Corp.*, 157 F.3d 512, 519 (7th Cir. 1998) (absence of data important factor).

assist the trier of fact will be whether it can be (and has been) tested. “Scientific methodology today is based on generating hypotheses and testing them to see if they can be falsified; indeed, this methodology is what distinguishes science from other fields of human inquiry.<sup>16</sup>

- **Peer review & publication.** 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. . . and in some instances well-grounded but innovative theories will not have been published. . . . Some propositions, moreover, are too particular, too new, or of too limited interest to be published. But submission to the scrutiny of the scientific community is a component of “good science,” in part because it increases the likelihood that substantive flaws in methodology will be detected. The fact of publication (or lack thereof) in a peer-reviewed journal thus will be a relevant, though not dispositive, consideration in assessing the scientific validity of a particular technique or methodology on which an opinion is premised.<sup>17</sup>
- **Error rate.** Additionally, in the case of a particular scientific technique, the court ordinarily should consider the known or potential rate of error and the existence and maintenance of standards controlling the technique’s operation.<sup>18</sup> The direction of the error also is important. A high error rate is only a concern if it favors the proponent.<sup>19</sup>
- **Widespread acceptance:** Finally, “general acceptance” can have a bearing on the inquiry. Widespread acceptance can be an important factor in ruling particular evidence admissible, and “a known technique that has been able to attract only minimal support within the community,” may properly be viewed with skepticism.<sup>20</sup>

In addition to the *Daubert* criteria, there are several other relevant indicia of scientific reliability:

- **Does the scientific literature affirm or criticize the procedure or theory?** The determination of reliability is made easier if there is a body of professional literature appraising the process or technique. If the literature appraises the process favorably, it is evidence of reliability; if the literature is unfavorable, it tends to cast doubt on reliability.<sup>21</sup>
- **Is the conclusion patently absurd or well beyond the data?** In *General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997), the

<sup>16</sup> *Daubert, supra*, 509 U.S. at 593.

<sup>17</sup> *Id.* at 593–94.

<sup>18</sup> *Id.* at 594.

<sup>19</sup> CHRISTOPHER B. MUELLER & LAIRD C. KIRKPATRICK, EVIDENCE § 7.8 (1995).

<sup>20</sup> *Daubert, supra*, 509 U.S. at 594.

<sup>21</sup> C. Mueller & L. Kirkpatrick, *supra* note 19, at § 7.8. *See also Bradley v. Brown*, 42 F.3d 434, 438 (7th Cir. 1994) (approving trial judge’s review of literature on causes of multiple chemical sensitivity).

Supreme Court held that a judge should not admit evidence that appears unconnected to the existing data except by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered. Patently absurd conclusions and those going well beyond the data are unreliable.

- ***Is the expert neutral?*** It is a fundamental precept of science that research is conducted by unbiased investigators with advanced degrees under the auspices of universities and major research institutes who have no vested interest in the outcome of the research. Research conducted outside this framework — in “research institutes” funded by special interest groups to promote a particular agenda, or by hired-gun professional consultants, is less reliable than traditional research.<sup>22</sup>
- ***Is the expert qualified to draw conclusions on the topic?*** Another relevant factor in determining the reliability of scientific evidence is the expert’s credentials and qualifications. Credentials include the expert’s educational achievements, experience with this product or procedure, current institutional affiliations, and whether the expert is currently actively involved in the discipline. It is fundamental to good science that experts work within their areas of specialty.<sup>23</sup>
- ***Was the procedure a standard one or generated solely in anticipation of litigation?*** An emerging factor considered relevant to the question of scientific reliability is whether the evidence offered for trial was generated solely for purposes of litigation. Like other factors, this one is not dispositive of reliability, but merely relevant to the issue. If the testing procedure is itself routine, it is of little importance that the particular test was conducted for litigation (e.g., DNA test). However, if the expert created a new type of test, or deviated from normal procedures to create evidence specially for litigation, the reliability of those results is reduced.<sup>24</sup>
- ***Has the theory or procedure been accepted in other jurisdictions?*** It is common practice for courts trying to decide the reliability of particular kinds of scientific evidence to look at whether other states have found such evidence reliable.<sup>25</sup>

<sup>22</sup> *DePaepe v. Gen. Motors Corp.*, 141 F.3d 715, 719 (7th Cir. 1998) (lack of experience should make court skeptical); *Ancho v. Pentek Corp.*, 157 F.3d 512, 516 (7th Cir. 1998) (consultant hired by plaintiffs had no academic affiliation); *Tyus v. Urban Search Mgmt*, 102 F.3d 256, 263 (7th Cir. 1997) (“court must ensure that it is dealing with an expert, not just a hired gun”); *U.S. v. Vitek Supply Corp.* 144 F.3d 476, 486 (7th Cir. 1998) (“we have no doubt that an expert’s qualifications bear upon the scientific validity of his expert testimony”).

<sup>23</sup> *Braun v. Lorillard Inc.*, 84 F.3d 230, 235 (7th Cir. 1996) (expert in detecting asbestos in building materials was asked to look for asbestos in human tissue; fact that plaintiff used “expert” with no previous relevant experience “is suggestive of” unreliability).

<sup>24</sup> E.g., *Smelser v. Norfolk So. Ry Co.*, 105 F.3d 299, 303 (3d Cir. 1997); *Merrell Dow Pharmaceuticals v. Haver*, 953 S.W.2d 706, 726 (Tex. 1997).

<sup>25</sup> See *Steward v. State*, 652 N.E.2d 490, 495–98 (Ind. 1995) (child sexual abuse syndrome); *Smith v. State*, 702 N.E.2d 668, 672 n.3 (Ind. 1998) (type of DNA testing); *Buzzard v. State*, 669 N.E.2d 996, 999 (Ind. App. 1996) (pedophilia profile).

The decision whether the proponent of expert testimony has adequately established scientifically reliability for the purpose for which it is offered is a matter for judicial discretion.<sup>26</sup> Reliability must be proved by a preponderance of evidence — a higher standard than the usual one for establishing a foundation.<sup>27</sup> It is not necessarily adequate to rely solely on the assurances of the expert that his or her procedures are reliable. Some verification from other experts or the scientific literature will be necessary if the opponent challenges the expert's claim.<sup>28</sup>

### [D] EXPERT OPINIONS

The purpose for calling an expert is to elicit the expert's opinion concerning an issue in the case that may not be obvious to the untrained juror. If that opinion is based on facts and data personally known to the expert through observation and experimentation,<sup>29</sup> it presents no unusual evidentiary issues. Any witness who has personal knowledge of relevant facts is competent to testify to those facts and can give opinions logically based on them. Thus, the physician who personally examined and tested an injured person can testify to his or her diagnosis based on that first-hand knowledge.

It goes almost without saying, however, that experts also take into account what they read or are told. Yet, the hearsay rule would seem to prevent them from disclosing this information to the jury. For example, an emergency room physician may base his or her diagnosis of a concussion in part because the nurse said that the ambulance attendant said the patient seemed to slip in and out of consciousness. The dilemma is obvious — if we follow the hearsay rule and exclude this information, the conclusion drawn by the doctor may appear to the jurors to be unsupported by the evidence or may even be excluded altogether. Modern evidence law resolves this problem with a compromise. An expert opinion may be based on facts or data 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. The expert may, however, discuss the hearsay basis for an opinion — not for its truth, but to help the jury evaluate the credibility of that opinion.

Under modern practice, there are few formalities of expert testimony. The expert may give his or her opinion in any manner the expert chooses, as long

<sup>26</sup> *General Electric Co. v. Joiner*, 522 U.S. 136, 142 (1997).

<sup>27</sup> See 1 STEPHEN A. SALTZBURG, MICHAEL M. MARTIN, & DANIEL J. CAPRA, FEDERAL RULES OF EVIDENCE MANUAL 76 (7th ed. 1998) (preponderance of evidence standard is the one ordinarily applied).

<sup>28</sup> See *Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1179 (1999) (finding tire expert's testimony unreliable after reviewing professional literature despite expert's claim that his method was accurate, stating "nothing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert"); *Gammill v. Jack Williams Chevrolet*, 983 S.W.2d 1, 12 (Tex. Ct. App. 1997) (bald assertion by expert that his procedure was scientifically reliable is not enough foundation); *Weinberg v. Geary*, 686 N.E.2d 1298, 1301 (Ind. Ct. App. 1997) (experienced surgeon's testimony concerning cause of scarring appeared reliable and was neither challenged nor objected to).

<sup>29</sup> Pretrial experiments must be conducted under "substantially similar conditions" to those existing at the time of the actual event. See *Jodoin v. Toyota*, 284 F.3d 272, 278-79 (1st Cir. 2002).

as it is confined to the expert's own field of specialty. Older common-law procedure dictated strict rules of form and procedure that often excluded expert testimony because one or two magic words were omitted — either the expert failed to testify “to a reasonable certainty,” or the expert used the wrong causation standard.

It used to be that the facts upon which an opinion was based had to be in evidence before the opinion could be given. If an expert had personal knowledge of these underlying facts, the expert first recited the facts and then gave an opinion. If an expert was relying on second-hand information, however, the process was more complicated. Information told to the expert or contained in written records had to be proved first in court by witnesses with personal knowledge. After all the facts were in evidence, the examining attorney had to restate all the important facts in a hypothetical question. This process is cumbersome and tedious, and the hypothetical question is prone to objection that important facts have been omitted or misstated, or that it contains facts not in evidence.

Many jurisdictions have followed the lead of the Federal Rules of Evidence and modernized these archaic rules. The Federal Rules have abrogated the old rule which limited opinions to those based on admissible evidence and presented in hypothetical questions. Rule 703 now says that the facts supporting an opinion may be made known to the expert *before* the hearing, and need not be independently admissible into evidence, if they are of a type commonly relied on by experts in the field. Rule 705 says that the expert may testify to his or her opinion without any prior disclosure of the underlying factual basis.

Even in jurisdictions that have retained the requirement of a hypothetical question, the trend is to relax the foundation. As long as the question is not so distorted that it would mislead the jurors, it will be permitted.<sup>30</sup> If the opponent thinks it assumes facts not in evidence, omits essential facts, or does not contain sufficient facts to be reliable, he or she may explore such issues on cross-examination and may ask additional hypothetical questions.<sup>31</sup> The question itself is not objectionable.

## [E] CROSS-EXAMINATION AND IMPEACHMENT

Experts may be cross-examined and impeached like other witnesses. You can inquire into their abilities and opportunities to observe the events to which they have testified, test their memories about those events, and bring out facts tending to impeach their credibility, such as biases, interest in the outcome, motives to testify falsely, prior inconsistent statements, bad character for truthfulness, and prior criminal convictions. You can explore the factual bases underlying their opinions and elicit further details about matters brought out in direct examination. In addition, three special types of cross-examination of experts deserve your attention: inconsistent statements in learned treatises, fees and financial interest, and bad reputation as an expert. Only the first two are permitted.

<sup>30</sup> See *Henson v. State*, 535 N.E.2d 1189 (Ind. 1989).

<sup>31</sup> See *Granberry v. Carbondale Clinic*, 672 N.E.2d 1296, 1300 (Ill. App. 1996).

Expert witnesses may be impeached by showing that the basic texts and treatises in their fields come to different conclusions or state different views than the ones testified to by the witness. At common law, these were treated like prior inconsistent statements — because they are hearsay, they were admissible only to impeach the expert and not for their truth. Federal Rule of Evidence 803(18) created an exception to the hearsay rule for this use of learned treatises, which permits you not only to introduce them, but also to argue that the treatise is more reliable than the expert who contradicts it:

To the extent called to the attention of an expert witness upon cross-examination or relied upon by the expert in direct examination, statements contained in published treatises, periodicals, or pamphlets on a subject of history, medicine, or other science or art, established as a reliable authority by the testimony or admission of the witness or by other expert testimony or by judicial notice [are admissible]. If admitted, the statements may be read into evidence but may not be received as exhibits.

You may use a learned treatise to impeach if two requirements are met: 1) the treatise is established as a reliable authority, and 2) the expert is confronted with it before it is read into evidence. Under the federal rule, this is easy. You can prove reliability by inducing the expert to admit to it, by calling your own expert to authenticate it, or if well known enough, by judicial notice. The confrontation requirement is satisfied either if the expert refers to it in direct examination or if you call it to his or her attention during cross-examination. At common law, depending on the jurisdiction, you might be restricted to treatises specifically referred to by the expert, treatises actually relied on by the expert in forming his or her opinion, or treatises the expert admitted were reliable.<sup>32</sup>

Experts also can be impeached by inquiring into their financial interests and the fees they receive for testifying. The courts generally agree that you can show that the expert is being paid for his or her time, the amount of compensation, and that this amount exceeds the statutory witness fee. If the expert has not yet been paid, you can cross-examine about the amount he or she expects to be paid. In addition, you usually are permitted to prove that the expert is on retainer to, has testified previously for, or has an ongoing financial relationship with an attorney, a party, an insurance company, or an institute funded by special interests.

What if the other side calls a real crackpot witness, whom all your experts agree is a fraud — can you impeach that witness by showing his or her bad reputation as an expert? The answer seems to be no, although the issue comes up rarely.<sup>33</sup> Presumably, if the witness really is so bad, you will be able to impeach that person successfully by showing a lack of qualifications and education, and by using learned treatises and your own experts to contradict the pseudo-expert's testimony.

<sup>32</sup> See JOHN W. STRONG, MCCORMICK ON EVIDENCE § 321 (5th ed. 1999).

<sup>33</sup> See *Adams v. Sullivan*, 100 Ind. 8 (1885).

### **NOTES**

**1. Judicial discretion to determine qualifications.** Whether a witness is qualified to be an expert is a matter for judicial discretion. This is well illustrated by *Thornton v. Galliard*, 141 S.E.2d 771 (Ga. App. 1965), in which the judge found a witness to be an expert despite the witness's testimony that he did not consider himself an expert. The appellate court said that "the mere fact that the witness in his testimony may disclaim to be an expert is no reason for refusing to allow him to testify as one."

**2. Opinions on the "ultimate" issues.** Under older common law, experts were not permitted to state opinions on the ultimate issues the jurors were supposed to decide. Thus, in a negligence case, experts could not "invade the province of the jury" by giving an opinion on whether injuries were caused by an accident. Although some jurisdictions still pay lip service to this doctrine, it has largely disappeared. Initially, courts created semantic ways of circumventing the rule: experts could testify that injuries were "consistent with" an accident of the type being litigated, or they were permitted to testify that the accident "could" or "might" have caused the result. *Keith v. United Cities Gas Co.*, 146 S.E.2d 7 (N.C. 1966). More recently, jurisdictions have eliminated the rule altogether. Federal Rule of Evidence 704 explicitly states that an opinion "is not objectionable because it embraces an ultimate issue to be decided by the trier of fact." *But see Mitchell v. State*, 268 S.E.2d 360 (Ga. App. 1980) (expert cannot give opinion on exact ultimate issue before the jury). However, experts still may be prevented from giving purely legal opinions. *See, e.g., Niebur v. Town of Cicero*, 136 F. Supp. 2d 915, 920 (N.D. Ill. 2001) (opinion that town had contractual obligation to fire plaintiffs for their gross negligence).

**3. Court-appointed experts.** Because of the venality of some professional expert witnesses, it is rarely difficult to find someone to testify on any side of almost any issue. The professional "consultant" who makes a living selling his or her opinions to attorneys is becoming a fact of life in litigation. No matter what the issue, no matter how extreme the facts, it seems that every lawsuit ends up with experts on both sides. It is no wonder that courts are suspicious about the academic neutrality of expert witnesses. *See, e.g., Schlagenhauf v. Holden*, 379 U.S. 104, 125 (1964) (Douglas, J., dissenting) ("a doctor for a fee can easily discover something wrong"); *Opp v. Pryor*, 294 Ill. 538, 128 N.E. 580 (1920) (expert testimony is "generally discredited and regarded as the most unsatisfactory part of judicial administration . . . because the expert is often the hired partisan, and his opinion is a response to a pecuniary stimulus"). In order to make more reliable experts available, modern evidence codes usually provide for court-appointed experts. *See Fed. R. Evid. 706.*

**4. Can you subpoena a reluctant expert?** Some jurisdictions greatly restrict your ability to subpoena an expert witness, even prohibiting it altogether. The majority permit you to subpoena an expert with personal knowledge of controverted facts or one who already has formed an opinion, such as a neurologist called in by the treating physician as a consultant. However, most jurisdictions do not permit you to compel an expert to perform tests or review a file for the purpose of reaching an opinion. There is great variation. *See Note,*

*Compelling Experts to Testify*, 44 U. CHI. L. REV. 851 (1977). See also *Kansas v. Call*, 760 F. Supp. 190 (D. Kan. 1991) (cannot use subpoena to get free expert testimony).

**5. Scientific reliability.** A good illustration of the issues of scientific reliability is *Ford Motor Co. v. Ammerman*, 705 N.E.2d 539 (Ind. Ct. App. 1999), involving the testimony of a product engineer who testified that after being hired by plaintiffs, he and his partner conducted emergency avoidance maneuver (EAM) tests of their own design on a variety of vehicles and concluded that the Ford Bronco had a tendency to roll over, but that passenger cars were immune from rollover. The court had to decide:

- a. Is product-safety testing a scientifically reliable field?
- b. Is the theoretical connection between EAM testing and real-world performance of vehicles scientifically reliable?
- c. Was the particular unique methodology used only by this expert reliable?
- d. Was his conclusion that passenger cars were totally immune from rolling over on flat surfaces reliable?

## § 8.04 PRESENTING EXPERT TESTIMONY

In almost every case you will have to decide whether you need to call any expert witnesses. If you decide to use expert testimony, you will have to locate and select appropriate witnesses, prepare them to testify, and plan and conduct effective direct examinations. The same is true, of course, for nonexpert witnesses. The techniques for preparing and conducting direct examinations in general are discussed in Chapter 6 and will not be repeated here. However, expert witnesses present some unique issues that deserve special attention.

### [A] WHETHER TO USE EXPERT TESTIMONY

Is it a good idea to call expert witnesses if the opportunity arises? Most lawyers think so; the majority of cases litigated today involve some sort of expert testimony.<sup>34</sup> Research by social psychologists backs this up. Experts can be quite persuasive and therefore are generally an asset to any case,<sup>35</sup> at least as long as the expert's opinion verifies the jurors' intuition. Scientific and expert testimony that runs contrary to the personal anecdotal experiences of the jurors will tend to have little impact.<sup>36</sup>

In some cases, the decision whether to use expert testimony may be taken out of your hands. In some kinds of cases, e.g., medical malpractice and insanity defense, state law may require you to present expert testimony or face a judgment as a matter of law.<sup>37</sup> Other cases may involve a technical or

<sup>34</sup> *Gross*, *supra* note 1, at 1119 (experts called in 86% of California civil cases).

<sup>35</sup> See, e.g., Allan Raitz, Edith Greene, Jane Goodman and Elizabeth F. Loftus, *The Influence of Expert Testimony on Jurors' Decision Making*, 14 LAW & HUMAN BEHAVIOR 385, 390 (1990).

<sup>36</sup> See ROBERT NISBETT & LEE ROSS, HUMAN INFERENCE: STRATEGIES AND SHORTCOMINGS OF SOCIAL JUDGMENT 55–56 (1980); Neil J. Vidmar and Regina Schuller, *Juries and Expert Evidence: Social Framework Testimony*, 52 LAW & CONTEMP. PROB. 133, 166–71 (1989).

<sup>37</sup> E.g., *Johnson v. University Hosp.*, 807 So. 2d 367, 372 (La. App. 2002) (medical standard of care).

scientific matter that simply cannot be proved without an expert, e.g., products liability, medical damages, possession of narcotics.

In many cases, however, expert testimony is not strictly necessary. For example, the state could try an accused based entirely on eyewitness testimony, but if experts can connect fingerprints, clothing fibers, and bullets found at the scene to the defendant, the case will be that much stronger. In these cases, you must engage in a benefit-cost analysis. Will an expert be of substantial assistance by providing unique evidence on an important issue, or of less help by offering redundant evidence or testifying on an unimportant issue? The potential benefits must be weighed against the costs. Not only are experts expensive, but also every time you use multiple experts on the same or closely related points you increase the risk that they might contradict each other.

One other reason for involving an expert should not be overlooked. An expert can assist you in the pretrial stages of a case involving technological issues. Even if you do not intend to call an expert yourself, you must be prepared to cross-examine experts called by your opponent. An expert, even one who essentially agrees with the conclusions reached by opposing experts, can render valuable assistance by helping you understand the issues, decide whether to settle the case, and prepare for cross-examination by reviewing the procedures followed by the experts on the other side.

## **[B] SELECTION OF EXPERT WITNESSES**

If you decide to use experts, the next step is to select whom to use as a witness. Some experts have personal knowledge of relevant facts, and must be called, e.g., the emergency room physician who treated the plaintiff, or the police chemist who tested the cocaine. Beyond that, however, you probably have choices. The decision process involves two steps: preparing a list of names, and then selecting the best available candidate.

Numerous sources can be consulted in order to compile a list of names. The following suggestions will get you started:

- The chair of a relevant academic department at a nearby university may be able to furnish the names of qualified alumni or faculty.
- Other attorneys who have handled similar cases may have already compiled such a list. Attorneys also may be able to tell you how the expert performed on the witness stand.
- Professional directories, such as the ABMS Directory of Board-Certified Medical Specialists, and the Forensic Services Directory.
- Classified advertisements in legal publications.
- The yellow pages.
- A computer-assisted search for recent similar cases in your vicinity will probably provide the names of experts that testified on unusual topics. If you wonder whether any experts have testified recently on cases of bubonic plague, try searching for it on LEXIS.
- The indexes to scientific publications may yield names of experts who have written recent articles on the subject of interest to you.

For example, a search through recent issues OF LAW AND HUMAN BEHAVIOR will provide names of experts who can testify about eyewitness unreliability.

The second step is to choose one of the experts from your list. The most important factor is the expert's inherent credibility. By this term we mean to distinguish between those factors affecting credibility that emerge during direct and cross-examination and factors that affect the way jurors will perceive the expert regardless of the content of testimony. The latter category can be called inherent credibility, and it is made up of three primary factors: the personal reputation of the witness, the reputation of institutions with which the expert is associated, and the method used by the expert in arriving at an opinion.

- ***The expert's personal reputation.*** An expert witness who practices in your community may be well known to some of the jurors. For example, in selecting a medical expert, what better person could you choose than a local physician with a reputation as a good doctor, a doctor on whom many of the jurors routinely rely for advice? If jurors know in advance that this person is credible, they will be inclined to accept his or her opinions. Bear in mind, however, that reliance on local experts is a double-edged sword. Some jurors may have had bad experiences with that person. Particularly in small communities, a doctor may be accepted as the best in town and still not be perceived as especially skilled. This same kind of personal credibility can be a factor in selecting a local plumber or house builder as an expert.
- ***The reputation of the institutions with which the expert is associated.*** The credibility of experts will be affected by the quality of the institutions with which the expert is affiliated, such as the university attended or the place where the witness now works. In selecting an expert, you should look for people with connections to institutions that are perceived as particularly credible *to the jurors*. For two reasons, this is not always a question of the objective ranking of the institution: 1) Although the Johns Hopkins may be one of the best medical schools in the country, the jurors may never have heard of it and may give more credibility to graduates of the state medical school; and 2) There is some evidence that jurors find most credible persons of slightly higher status, rather than much higher status.<sup>38</sup>
- ***The method used to arrive at an opinion.*** Did the expert conduct firsthand investigations, personally examining and testing the persons and objects involved, or did he or she simply review a file? Jurors probably find medical opinions more credible if they come from an expert who actually examined and treated a patient, or personally conducted tests and experiments, than if they come from experts who only reviewed the medical records or other files.<sup>39</sup>

<sup>38</sup> Ellen Berscheid, *Opinion Change and Communicator-Communicatee Similarity and Dissimilarity*, 4 J. PERSONALITY & SOC. PSYCHOLOGY 670 (1966).

<sup>39</sup> See RITA J. SIMON, *THE JURY: ITS ROLE IN AMERICAN SOCIETY* 60 (1980).

In addition, you might consider the following additional factors:

- Is the expert attractive? Research shows that physically attractive witnesses are perceived as more credible and more intelligent than unattractive witnesses.<sup>40</sup>
- Does the expert speak plain English? The expert needs to be able to explain things to the jury (and to you) in comprehensible terms rather than jargon.
- Is the expert's attitude and appearance professional without being aloof and patronizing?
- Can the expert be impeached with his or her own published words? Has the expert ever written books or articles espousing a viewpoint contrary to the stance the expert will take for you, or taking the position that no firm conclusions can be drawn in this area?
- Is the expert up to date? Has the person written recent articles or books, recently taught classes in the area, or recently attended continuing education seminars in the field? Developments in scientific and technical fields can happen very rapidly, and you need an expert who is familiar with the cutting edge of the discipline.
- Has the expert testified before? Previous courtroom experience will have helped the expert learn how to testify understandably and withstand cross-examination. A veteran expert may be able to offer good advice on how to present his or her evidence most persuasively, and may even have exhibits or scale models that have been used successfully in prior cases.
- Has the expert previously testified for both sides? An expert who testifies exclusively for one side or one industry (e.g., "whiplash doctors") are vulnerable to cross-examination for bias. They have lost their aura of scientific impartiality.
- Is the person willing to testify? Rarely may you use the subpoena power to compel an expert to testify; nor would it be a good idea. You probably should consider this alternative only when absolutely necessary, when you cannot prove your case by any other means. Experts forced to testify may not be as helpful as you would like them to be — they may be resentful of the imposition and look for ways to teach you a lesson.

## NOTES

**1. *Ethics of selecting expert witnesses.*** Perhaps caught up in adversarial zeal, many lawyers see nothing wrong with shopping for expert witnesses who will testify in their favor, rejecting all those who come to different conclusions, regardless of the merits of the case. The sad fact is that, even if all respectable experts hold a contrary view, if you look long enough you can find someone who will pass as an expert to testify on your side. Prosecutors use psychiatrists

---

<sup>40</sup> See Daniel Linz and Steven Penrod, *Increasing Attorney Persuasiveness in the Courtroom*, 8 LAW & PSYCHOLOGY REV. 1, 35–38 (1984).

known to favor the death penalty in sentencing hearings. Personal injury lawyers call on a small group of engineers who always conclude there were product defects. The tobacco companies manage to find experts who say that smoking is not harmful.

Is selecting a biased expert who can be counted on to give favorable testimony regardless of the facts, unethical? It does not amount to subornation of perjury in the same sense as hiring a witness willing to testify to anything for a fee. It does not run afoul of the prohibition in Rule of Professional Conduct 3.3 against offering evidence *known* to be false. If frequency of occurrence were the measure of ethical conduct, there would be nothing wrong with this practice. But ethical standards are not measured by frequency. An ethical lawyer is required to “refuse to offer evidence that the lawyer reasonably believes is false.” ABA Model Rule of Professional Conduct 3.3(c). Lawyers owe a duty to the system of justice to utilize procedures that command public confidence and respect, and are under a general obligation not to engage in conduct involving dishonesty or misrepresentation. Rule 8.4(c). Selecting a person to testify as an expert who can be counted on to give a favorable opinion, even if the evidence is insufficient to support it, is difficult to rationalize as anything other than deceiving the court. *See* Martin L. Norton, *Ethics in Medicine and Law: Standards and Conflicts*, in *LAWYERS’ ETHICS* 269–70 (A. Gerson ed. 1980).

**2. Ethics of payments to experts.** If you paid ten thousand dollars to an ordinary witness to encourage him or her to testify for you, you would be subject to disciplinary action and possible prosecution for bribery. Yet, legal ethics permit you to pay large sums of money to experts to induce them to testify for your client, as long as the inducement is not “illegal.” ABA Model Rule of Professional Conduct 3.4(b). This distinction seems strange. Are experts any less susceptible to financial inducements? Not all experts are wealthy neurosurgeon. Consider the pressure on a young scientist or professor who is told that if he or she reaches a favorable conclusion, then the attorney will employ that person for ten thousand dollars as an expert witness, and probably use him or her again in future cases. The practice often is defended on the ground that experts must be compensated for their time or to make up for income lost because the person could not be seeing paying clients. Again, this rationale is weak and seems based on the assumption that all experts are physicians in private practice. Many experts from industrial or university jobs receive a yearly salary and suffer no income loss by taking time off to testify. If a self-employed expert happened to witness a traffic accident, he or she might lose as much time through interviews, depositions, hearings, preparation and testimony without being compensated. Jurors and nonexperts take as much time away from their jobs as expert witnesses, but are compensated only by statutory witness fees (around \$40.00 a day).

The official ethic of our profession, however, prohibits only contingent fees. An expert who is to be paid only upon a favorable verdict may be induced to give stronger or more positive testimony than he or she otherwise would give. For that reason, ethical rules have always prohibited such arrangements. *See* Note, *The Contingent Compensation of Expert Witnesses in Civil Litigation*, 52 *IND. L.J.* 671 (1977); Note, *Contingent Fees for Expert Witnesses in*

*Civil Litigation*, 86 YALE L.J. 1680 (1977). For an interesting opinion holding the prohibition against contingent fees unconstitutional because it discriminates against the less affluent who cannot afford to hire experts, see *Person v. Association of the Bar*, 414 F. Supp. 144 (E.D.N.Y. 1976), *rev'd*, 554 F.2d 534 (2d Cir. 1977).

### [C] PREPARING THE EXPERT TO TESTIFY

The first step in preparing the testimony of an expert witness is to become an expert yourself. Before you can even effectively discuss specialized issues with an expert, you must acquire an in-depth knowledge of the subject matter. You should be able to speak the expert's language and understand the basic concepts of the discipline. You can acquire this knowledge by reading scientific texts and journals or, in the more common fields of specialty, treatises written especially for lawyers.<sup>41</sup>

After you have acquired a general knowledge of the subject, you must turn your attention to the preparation of the direct examination of your expert. This process can be broken down into four separate tasks.

- Discuss the merits of the case with the expert.
- Prepare an outline of the direct examination.
- Work with the witness to make the direct examination clear and effective.
- Prepare the expert for the ordeal of courtroom testimony.

#### [1] Initial Consultation

The first step in preparing expert testimony is to discuss the merits of the case with the expert. If you are using a consultant with no prior contact with the case, you will have to supply the expert with the file and time to review it, of course, before you can discuss the merits. On the other hand, if the expert has become involved in the case naturally — the plaintiff's own physician, or the defendant's own design engineer — you probably do not need to supply any additional records, but you should check with the expert on whether he or she has everything necessary.

The scope of your interview with an expert is broader than that of an ordinary witness. You need to find out "the facts," just as you would for any witness:

- The extent of the expert's personal knowledge of the events, just as you would interview any occurrence witness.
- The opinions the expert has reached and the reasons for them, including a detailed account of the steps taken, documents reviewed, and people consulted.
- The degree of certainty underlying the opinion, and if the expert is uncertain, what the next most likely conclusion is.

---

<sup>41</sup> *E.g.*, DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE (2002) (four volumes covering hundreds of topics in scientific evidence); KENNETH S. POPE ET AL., THE MMPI, MMPI-2, AND MMPI-A IN COURT: A PRACTICAL GUIDE FOR EXPERT WITNESSES AND ATTORNEYS (2d ed. 2000); ATTORNEYS' TEXTBOOK OF MEDICINE (1989).

You will also need to involve the expert in planning the rest of your case. An expert, especially one who has testified before, can be of great value early in the preparation process by acting as your consultant on a matter beyond your personal expertise, such as:

- Would it help to gather additional data or conduct further tests?
- Does the expert know the opponent's experts?
- Where are the scientific strengths and weaknesses in the case? Should you litigate or settle?

## [2] Planning the Direct Examination

Planning the content and the organization of your direct examination should be carried out in cooperation with the expert. While the ultimate responsibility for preparing the direct testimony is yours, the expert can assist you in deciding what to include or omit. The expert will be especially helpful in planning testimony about his or her qualifications and in drafting hypothetical questions.

### [a] Introduction

What do you do first? In every other stage of the trial, our general strategy has been to start strong, emphasizing some important aspect of the case. There is no reason to abandon that strategy now. The introduction should inform the jury who the witness is and what the witness's role in the case is, and should emphasize an important point. Selecting an important point is a bit tricky for an expert, because you cannot elicit their opinions until after they have been qualified as experts, and their opinions are probably the most important points. It is common, therefore, to select as an important point something to do with credibility — why your expert can beat their expert. For example, in a battle of medical experts, you might distinguish the one doctor who actually treated the plaintiff as follows:

Q: What is your name?

A: Dr. Kristen Smith.

Q: Are you familiar with the plaintiff, Robert O'Dell?

A: Yes. He is one of my patients. I treated him throughout his illness up until his death.

### [b] Qualifications

You generally must begin direct examination by eliciting testimony about the expert's qualifications to establish his or her competence. If the witness is a doctor or other traditional expert, the subjects you will need to cover are fairly straightforward:

- Present occupation, title and rank
- Experience and employment history
- Formal education, including college and advanced degrees

- Formal post-degree training, including apprenticeships, medical residencies, fellowships, continuing professional education seminars, or other specialized training
- Teaching experience or affiliations with universities, especially any courses taught that relate to the opinion the expert will give
- Publications in general, with special emphasis on any that relate to issues in the case
- Membership in relevant professional societies, especially those in which membership is an honor
- Membership on national committees or commissions
- Honors and prizes received
- If you are lucky, inventions or scientific breakthroughs made by the expert, and any patents he or she holds
- State licenses to practice that have been granted
- Previous litigation experience

If the expert is self-taught, or is an expert in a nontraditional field of specialty, you may have to modify these questions to emphasize the length of his or her experience and the frequency with which the witness is consulted by courts or businesses.

To what extent should you elicit testimony about qualifications? You must balance the necessity of convincing the jurors that the expert's testimony will be credible against the risk that jurors will become bored, or worse, view the process as needless and tasteless self-praise.

The question of the extent to which you should prove those qualifications is primarily a matter of giving to the proof the amount of time and attention that will result in the most favorable impression on the jury. Laboring over insignificant details will bore the jury and perhaps lead them to the impression that you are trying to build up the witness beyond what the facts justify. There is also a possible advantage in omitting some of the details so the witness may have something further to offer in the event your adversary chooses to cross-examine regarding his qualifications. On the other hand, proof [only] of the bare essentials necessary to make the testimony admissible fails entirely to serve the second aim of persuading the jury that the witness is competent and his testimony accurate. In most cases in which you have an expert witness, your adversary will have one also and the jury must decide which one is right. Although the content of their testimony and their methods of expression will have more influence on the jury's choice between them, their respective qualifications are also likely to have weight. Accordingly, you should not be content with proving only the bare essentials.<sup>42</sup>

### **[c] Tender Witness as an Expert**

Although it is not legally necessary to make a formal tender of the witness as an expert in a particular field,<sup>43</sup> it is tactically advantageous. It gives you

<sup>42</sup> ROBERT KEETON, TRIAL TACTICS AND METHODS 57–58 (2d ed. 1973).

<sup>43</sup> See *State v. Wilhite*, 457 S.E.2d 841 (N.C. 1995).

the opportunity to specify a particular field of expertise related to the case, to make it appear that your witness is a specialist. For example, if your medical expert is a general practitioner who will disagree with the other side's internal medicine specialist about the extent of internal injuries, you can close the expertise gap as follows:

Q: What do you do as a general practitioner?

A: Patients come to me first, with all sorts of symptoms and complaints. My job is to diagnose their ailments, and either treat them myself or refer them to a specialist.

Q: How many diagnoses do you do a day?

A: Twenty or thirty.

Q: That would be about 100 diagnoses a week, or 5000 each year?

A: That's about right.

ATTORNEY: Your honor, we offer Dr. Smith as an expert witness in the diagnosis of medical problems.

The formal tender results in the judge accepting your witness as an expert in front of the jury. It also resolves the issue of whether your witness is properly qualified early in the examination, and prevents your opponent from disrupting the heart of your direct examination with an objection to qualifications.

It was once common for the opposing lawyer to conduct a 'voir dire' on the extent of the expert's qualifications before the judge decides whether to accept the witness as an expert. If the opposing party has any serious questions of the witness's expertise, they would be asked at this point — after the witness is tendered as an expert, but before the judge has ruled. Under modern litigation practice, you must supply the opposing party with the name and credentials of your expert in advance of trial, and objections to the witness's expertise must usually be made pretrial, so the voir dire is becoming uncommon.<sup>44</sup>

### [d] Facts and Opinions

Trial practitioners disagree about how to structure the remaining elements of an expert's testimony — facts and opinions. Rarely will an expert's testimony be amenable to the kind of orderly chronological presentation recommended for lay witnesses. There is general agreement that experts should be asked not only their opinions, but also the reasons for them and how they arrived at their conclusions. Without this information the jurors will have difficulty deciding which expert is more credible. Beyond this, there are probably as many suggestions on organization as there are practicing attorneys.

If the expert has personal knowledge of the facts underlying an opinion, as in the case of a treating physician, a semblance of chronological order may be possible. You can start with the patient's first visit and have the doctor

<sup>44</sup> See, e.g., Fed. R. Civ. P. 16(c)(4); *McCulloch v. H.B. Fuller Co.*, 61 F.3d 1038, 1043 (2nd Cir. 1995).

testify to the steps he or she took in reaching a diagnosis: medical history, observations, consultations with other doctors, examinations and laboratory tests. You then can elicit a diagnostic opinion of the patient's problem and an opinion as to the cause of that problem. If the doctor continued to treat the patient, you next can elicit testimony about that treatment and the results of subsequent examinations. Finally, you can end with a prognosis: the permanency of the injury, the likelihood of continuing pain, and the need for and cost of future medical care. If you are calling a design engineer who helped design the Ford Bronco, you can lead the witness through the process undertaken by Ford from design proposal through prototype through production of the final model, emphasizing the safety testing at each stage.

If you are examining a consulting expert, you may still use a modified chronological order. You can first elicit how the expert became involved in the case, and then explain any assumptions he or she made that are important to the investigation. Next, the expert can testify about the course of his or her investigation and the steps taken in order. This approach follows the chronology of the investigation, not the original event, but still has a semblance of logical order. One technique is to ask the expert what investigative steps should be taken and then to elicit testimony about those steps in their order of importance. Finally, the expert states his or her opinion.

At times, chronological order will not be the best way to present expert testimony and another logical order must be found. McElhaney uses as an example a physician who examined the plaintiff in the emergency room on a busy night.<sup>45</sup> Using chronological order may present a picture of chaos. The taking of the plaintiff's medical history may have been interrupted while the doctor treated a knife wound on another patient. The doctor may have returned to the plaintiff and begun an examination, only to be called away to tend to a head injury victim from an automobile accident. The doctor may have returned to the plaintiff, decided that internal injuries were possible, and ordered X-rays and a hematology report. While awaiting the results, the doctor may have seen other patients. While eating a sandwich, the doctor may have examined two sets of X-rays at once, deciding that the plaintiff could go home but that another accident victim should be admitted. Before the doctor can complete the entry in the plaintiff's chart, she may have been called to emergency surgery, delivered a baby, and consulted with police officers about a shooting victim. Presenting these details in chronological order would give the jurors the impression of confusion, disorganization, and lack of attention. However, if the doctor is asked to list the tests that should be conducted to rule out internal injuries, and then testifies that she performed each test and made a diagnosis based on the results, the apparent state of confusion is minimized.

The easiest method of all may be simply to elicit the expert's opinion and then ask how he or she drew that conclusion. This can be used both for experts with and experts without personal knowledge. For example:

Q: Were you asked to review and evaluate the plaintiff's medical files to determine the permanency of his paralysis?

---

<sup>45</sup> James McElhaney, *An Introduction to Direct Examination*, LITIGATION, Winter 1976, at 38.

A: Yes.

Q: Did you do so?

A: Yes.

Q: What is your conclusion?

A: Mr. Hooker's paralysis is irreversible and permanent. There is no hope of a medical recovery.

Q: What is the basis for your opinion?

If the expert had personally treated the plaintiff, a similar format could be used:

Q: Are you Darrick Hooker's treating physician?

A: Yes.

Q: Did you examine and treat him for paralysis?

A: Yes, I did.

Q: Have you formed an opinion on the permanency of this condition?

A: Yes.

Q: What is your conclusion?

A: Mr. Hooker's paralysis is irreversible and permanent. There is no hope of a medical recovery.

Q: Will you tell us how you arrived at that opinion?

If your expert lacks sufficient firsthand knowledge of the facts, you may decide to ask a hypothetical question, although they generally are not legally required. Hypothetical questions have been criticized as boring, confusing, too complex, repetitive of testimony, biased, and time consuming.<sup>46</sup> However, well-phrased hypothetical questions may be tactically advantageous in some situations. Their use permits you to summarize the favorable evidence and to pinpoint the important facts on which the opinion is based. Unless the case is either so simple that no summary of the evidence is necessary or so complex that no brief and concise hypothetical question can be formulated, some trial practitioners continue to favor them.

If you decide to use hypothetical questions, they should be prepared in advance with the assistance of the expert. You are courting disaster if you either omit facts the expert thinks important or fail to show the question to your expert until trial. This advance preparation is necessary because your question must strike a delicate balance between being simple enough for the jury to follow and being detailed enough for an expert to use as the basis for a reliable opinion.

---

<sup>46</sup> See MARSHALL HOUTS, *Death*, COURTROOM MEDICINE, Vol. 3 § 8.05 (1981): "In a recent case . . . a typewritten hypothetical question which required 22 minutes to read was propounded with great seriousness to four consecutive medical witnesses. . . . By noon the attorney had lost his voice, the judge was reading a brief in another case, and the jury was mentally scattered between Yankee Stadium . . . and Malibu."

### [3] Preparing the Content of the Expert's Testimony

The most important preparation task for most experts is to help the witness translate complicated medical or scientific concepts and jargon into lay terms. This is crucial, because expert testimony must be understood to be valuable. For the jurors to understand and accept an expert's opinions, they must understand not only the terminology, but also the technical concepts and principles used to arrive at a conclusion.

Many experts do not speak naturally in lay terms. They may be reluctant to do so, because ordinary language is too imprecise to express technical distinctions. They simply may have forgotten how to do so, having become used to speaking in the language of their profession. In either event, you must work with your expert on translating jargon into plain English and explaining scientific phenomena by analogy to events of everyday experience.

For example, if a medical expert tells a juror that she diagnosed a complete transection of the left sciatic nerve eight inches above the popliteal fossa, and performed surgery to re-proximate the nerve channels so that the nerve could regenerate, the jurors might understand some of it. However, if the expert uses plain language and analogies, all jurors will be able to understand what is going on:

Mr. vander Kolk's left leg was paralyzed and when we stuck pins in his leg he could not feel any pain from the knee down. Therefore it was obvious that the sciatic nerve — that's the main nerve for the whole leg — had been cut a few inches above the knee. A team of neurosurgeons operated on him to try to repair the nerve. This sciatic nerve is like a telephone cable, containing thousands of little wires or nerve fibers that follow the main channel until they branch off to a tiny piece of skin or muscle. Now, when the sciatic nerve is cut, all the fibers beyond that cut die. However, they can often grow back, or regenerate — it's like pruning a plant. The problem is to make them grow back in the right direction. To do this, you have to reconnect the dead nerve fibers to the sciatic nerve. We actually sew them together. In this way, the new growing nerve fibers can use the old ones as pathways.

It is also important to anticipate potential weaknesses and misunderstandings inherent in expert testimony. Experts may use different standards in evaluating information than judges and juries. For example, an expert may believe that nothing can be proven with certainty; yet the jurors expect an unequivocal opinion. Alternatively, the expert may be comfortable basing a conclusion on a generally accepted theory that cannot be objectively verified while the jurors expect tangible proof. You must eliminate these areas of potential misunderstanding with your witness, either by convincing the expert to change his or her standards or by working out an explanation that will educate the jurors about the expert's standards. For example, if you are going to ask the expert for a prognosis, you can emphasize to the expert that the law does not require the expert to be absolutely certain — the plaintiff cannot wait for death to verify that his or her injury was permanent. Explain that the law recognizes that expert opinions can be given only in terms of probable results based on the limits of our medical knowledge and therefore a court

will accept such opinions. If the expert understands this, he or she will be better able to give testimony without hedging.<sup>47</sup>

It will also be helpful to explain to the expert that the jury may be suspicious of theories and conclusions not objectively provable.<sup>48</sup> Rational scientific assumptions should not be taken for granted, but should be explained to the jury. For instance, if a diagnosis is based in large part on subjective complaints, you should prepare your medical expert to testify about the importance of a medical history in diagnosis, the fact that all doctors rely on them, and how hard it would be for a patient to know how to fake all the symptoms. If inconclusive tests were conducted, such as negative X rays, the expert should be told that the jurors may not understand that this does not negate the presence of an injury. While all doctors may know that the kind of injuries suffered by the plaintiff do not often show up on X-rays, the jury must be given this basic medical education to interpret the facts correctly.

## NOTES

**1. Including disputed facts in hypothetical questions.** Should you include in your hypothetical question a request that your expert assume facts that are disputed or that were objected to? Judge Keeton cautions against inclusion unless the disputed facts are essential to a favorable answer. If evidence admitted over objection is found to be inadmissible on appeal, it probably will be harmless error if you can show that it was not essential to your case. However, if you based a hypothetical question in part on the inadmissible evidence, reversal is more likely. If you include sharply disputed facts in your question, you make the expert's opinion vulnerable to the argument that it is based on a false or unproved assumption and is therefore worthless. ROBERT KEETON, *TRIAL TACTICS AND METHODS* 53 (2d ed. 1973). *Cf.* SCOTT BALDWIN, *ART OF ADVOCACY — DIRECT EXAMINATION* § 22.06 (2002) (you may include disputed facts if solidly based on evidence).

**2. Simplified testimony under the Federal Rules of Evidence.** The Federal Rules of Evidence eliminated most of the common law formalities governing expert testimony. They permit very short, summary testimony by experts. Without suggesting that it would be the most persuasive format, James McElhaney, *Expert Witnesses and the Federal Rules of Evidence*, 28 *MERCER L. REV.* 463, 478, 483–84 (1977), offers the following example of permissible abbreviated testimony:

Q: Dr. Willis — I take it you are a medical doctor, is that correct?

A: Yes, I am. I specialize in the field of neurology, which is treatment of disorders of the brain and nervous system.

Q: Are you familiar with the medical condition of Mr. Jon Price?

A: Yes, I am.

<sup>47</sup> SCOTT BALDWIN, *ART OF ADVOCACY — DIRECT EXAMINATION* § 22.03–04 (2002).

<sup>48</sup> For example, many people are suspicious of the theory of evolution in part because scientists cannot show them an actual example of a four-million-year-old primate. Simply calling something a “theory” may cause a lay juror to think it is only speculation.

- Q: Would you tell us about it, please?
- A: Certainly. Jon Price hit his head on the side post of an automobile in which he was riding on January 5, 1976. That blow to the head caused a tear in the tissue of his brain, which formed a small scar as it healed. Because of that scar on his brain, he has a form of epilepsy. At times which cannot be predicted, his left hand and arm twitch and jerk uncontrollably. Unfortunately, there is no way to operate on his injury, and in his case, medication has been ineffective.
- Q: Can you tell us, Doctor, how long this condition will last?
- A: I am afraid it will be with him the rest of his life.
- Q: In forming your opinion, Doctor Willis, did you rely on anything other than your examination of Mr. Price?
- A: Yes, I did. I studied his complete medical file.
- Q: What did this include?
- A: Let's see — the notes of his family physician, Dr. Griffin, the medical file compiled by the late Dr. Young, which included his own findings, the electroencephalogram report, the cranial X-rays, Dr. Schuler's psychiatric report and the results of all the laboratory tests.
- Q: Can you tell us, Doctor Willis, whether it is customary and reasonable for experts in the field of neurology to rely on such information in making professional judgments?
- A: Certainly. We have to depend on each other. It would be literally impossible to do everything yourself. For example, I do not have the slightest idea how to do the biochemical tests in a simple urinalysis. Relying on other experts is actually more dependable than doing it yourself.
- Q: Thank you, Doctor.

#### [4] Preparing the Expert for the Courtroom

There is strong evidence that jurors initially have positive feelings about experts, hold them in high regard, and give considerable credit to their testimony.<sup>49</sup> However, experienced trial lawyers believe that this initial favorable feeling can turn into dislike or distrust by certain attitudes an expert may display at trial — condescending experts who talk to jurors as if they were simpletons, haughty experts who get angry if anyone questions their opinions, supercilious experts who give the impression they are wasting their valuable time testifying, and any expert who shows impatience, flippancy, disdain, or tends to try to prove his or her superiority over lawyers. Experts need to avoid going off on tangents, lecturing the jury, or expressing contempt for other experts, lawyers, or the judge.

You must explain that a learned treatise may be used to contradict the expert. Anything in a treatise that contradicts your expert's testimony is

---

<sup>49</sup> See Linz & Penrod, *supra* note 40, at 31–35.

admissible, if your opponent can prove the book is authoritative, even if the book is outdated or every expert knows the author got that one passage wrong. For that reason, the expert should be cautioned against admitting that a treatise is authoritative unless he or she actually has read the relevant portions recently and knows they agree with his or her testimony. At the same time, the witness cannot very well refuse to recognize every treatise lest he or she appear uncooperative (or worse, lacking in expertise). The best solution is to make sure your expert rereads the relevant portions of the major texts and articles before trial and knows for sure which agree and which disagree with his or her conclusion. Be sure you remind the expert that you will pay for this time devoted to background reading.

Your expert also should be prepared to handle cross-examination questions about his or her fee, and explain it by equating the fee charged to other income lost as a result of taking time off to testify. The witness should be able to make it clear that he or she is being compensated only for the time spent in preparation, consultation, and testimony. The expert can even be prepared to remind the cross-examining attorney that attorneys are paid far more than experts.

The only way to work on all these issues is to conduct a mock direct examination. If the witness has bad testifying habits, these can be pointed out and corrected. A practice cross-examination can be conducted that includes questions about fees and learned treatises. This practice examination will be especially helpful if the expert is going to use charts, diagrams, or models to illustrate his or her testimony. If the expert has considerable experience testifying, a complete practice session may be optional, as long as you go over carefully all important parts of the testimony.

### NOTE

***Ethics of preparing expert witnesses.*** Experts who are hired as consultants to evaluate a file and render an opinion lack personal knowledge of the facts. So where do they get their information? From the lawyer, of course. It should be obvious that you must provide your expert with *complete* information. You may not withhold test reports or notes from investigators that are unfavorable, nor may you screen out information you think is irrelevant. You lack the expertise to decide what is relevant. Deliberate manipulation of the information your expert may rely on is nothing more nor less than participating in the creation of false evidence. See ABA Model Rule of Professional Conduct 3.4(b) (a lawyer shall not assist a witness to testify falsely).

Despite the obviousness of this ethical rule, some experienced litigators give tactical advice to the contrary. One writes that you should provide only “enough information so that the expert will be well prepared,” but withhold “materials that would open the door to . . . cross-examination.” In that way you will assure that only “helpful opinions are reached.” James E. Daniels, *Managing Litigation Experts*, A.B.A.J., Dec. 1984, at 64–66. Another urges that you should not give your expert facts or documents unless “you do not mind if the opposition does learn or see them.” Peter I. Ostroff, *Experts: A Few Fundamentals*, LITIGATION, Winter 1982, at 9. Such advice flies in the

face of the ethical rules and amounts to nothing less than a recommendation that you deliberately manufacture false evidence.

### [D] CONDUCTING DIRECT EXAMINATION

Conducting the direct examination of an expert witness presents no issues substantially different from those arising during the direct examination of any witness. You should review Chapter 6.

## § 8.05 OPPOSING EXPERT TESTIMONY

### [A] VOIR DIRE ON QUALIFICATIONS

If you believe that an opposing expert lacks the necessary qualification, you can object to the witness being qualified as an expert and assert your right to conduct a preliminary voir dire examination as to the witness's competence.<sup>50</sup> Your voir dire will follow the proponent's direct examination of the witness concerning qualifications, but will take place before the judge decides whether the witness may testify as an expert. If the judge permits you to voir dire the witness, you may question him or her as if on cross-examination concerning the witness's qualifications, credentials, and experience. The judge will then rule on whether the witness may testify as an expert after hearing from both sides.

This is a risky tactic, and some trial practitioners advise against it unless you are certain of success. If the judge overrules your objection and finds the witness qualified, the jurors may misinterpret the judge's ruling as settling the issue and will be less likely to consider weaknesses in the expert's qualifications as a factor in determining credibility. Others take the position that you should voir dire the witness if you know of any serious weakness in the proposed expert's qualifications. This view is supported by psychological evidence that jurors are likely to be less receptive to testimony if they know it is coming from a witness with credibility problems.<sup>51</sup>

### [B] THE *DAUBERT* HEARING

If you believe that the expert's proposed testimony is scientifically unreliable, you may move for a *Daubert* hearing. This procedure takes its name from *Daubert v. Merrell-Dow Pharmaceuticals*, in which the Supreme Court held that expert testimony was not admissible under Fed.R.Evid. 702 unless its proponent established that it was scientifically reliable for the purpose for which it is being offered.<sup>52</sup> At such a hearing, both sides may present evidence concerning the reliability of a theory, technique, test, or procedure used by the expert. That evidence may come from other experts in the field, learned

<sup>50</sup> In some jurisdictions, you may be required to raise your objections pretrial instead of during an in-court voir dire. It is common for the names, resumes, and reports of expert witnesses to be disclosed during discovery. Fed. R. Civ. P. 26(a)(2). Some courts will require you to review that material and make any objections to the witness's qualifications at a pretrial conference.

<sup>51</sup> See Brian Sternthal, Lynn Phillips and Ruby Dholakia, *The Persuasive Effect of Source Credibility*, 42 PUB. OPINION Q. 285 (1978).

<sup>52</sup> See discussion of *Daubert* and its follow-up cases *supra* at 339-43.

treatises, and scientific journals. The judge may review precedent from other jurisdictions or comments in law reviews, and hear the arguments of the attorneys. The court will then rule whether the proponent has proved by a preponderance of evidence that proposed testimony is reliable under the guidelines suggested in *Daubert*.

## [C] CROSS-EXAMINATION

The most common way of opposing expert testimony is cross-examination. The expert may have the minimal qualifications to be an expert, but still lack key important credentials. The proponent may have convinced the judge that the testimony is sufficiently reliable to be admitted, but that doesn't mean a skeptical jury will also accept it when cross-examination reveals its tentative or experimental nature, the large number of alternatives, and the bias of the expert.

Most of what you read in Chapter 7 on cross-examination of lay witnesses, applies to the cross-examination of expert witnesses. The basic concepts are the same: to be successful, the cross-examination should be planned carefully and organized to accomplish your purposes, and should be conducted in a way that allows you to maintain control over it. However, some aspects of the cross-examination of experts deserve special attention.

### [1] Whether to Cross-Examine

The decision whether to cross-examine most witnesses is fairly straightforward. If a witness knows facts that can help you prove your case, or if you have the ammunition to successfully impeach a witness who has given damaging testimony, then you probably should conduct a cross-examination, whether that person is a lay or expert witness. If an expert such as a treating physician has any personal knowledge of the facts, some facts might be consistent with your own theory of the case and be worth eliciting. In some situations, an expert who gives damaging testimony can be impeached for interest or bias, or because he or she has made a significant prior inconsistent statement. In cases like these, the decision to cross-examine will be easy.

Often, however, an expert called by your opponent will not have any personal knowledge of the events and will appear reasonably credible. For these witnesses — often partisan paid consultants with considerable courtroom experience — cross-examination rarely should be attempted unless you can prove bias. Unless the expert is obviously dishonest or incompetent, a cross-examination is not likely to harm the expert's credibility, and may have the effect of strengthening his or her testimony by making it appear unassailable.

### [2] Eliciting Favorable Testimony

Favorable testimony can be elicited from expert witnesses in a number of ways.

- If the expert has personal knowledge of the facts, he or she can be asked about aspects of the case that help prove your theory.
- A consulting expert may be able to provide helpful testimony by answering hypothetical questions. This tactic will not work if the

disputed issue concerns the proper conclusion to be drawn from undisputed facts, such as a criminal case in which experts give differing opinions on sanity based on essentially the same facts. However, if the controversy centers on disputed facts, the opposing expert may agree with your conclusion if asked to assume your version of the facts instead of your opponent's. For example, if a defense medical expert discounts plaintiff's self-report of symptoms and concludes that plaintiff has not been permanently injured, you could ask the expert to assume the truth of the plaintiff's statements. The expert then will probably have to agree with the conclusions reached by your own experts.<sup>53</sup>

### [3] Impeachment

Five avenues of impeachment are open to you in cross-examining expert witnesses. As with any witness, you can attack an expert's personal veracity and attempt to prove that the witness is deliberately lying or exaggerating, you can attack the credibility of the expert's testimony by showing that he or she has made honest mistakes, and you can attack the credibility of your opponent's case as a whole by emphasizing contradictions between opposing experts. In addition, you can attack an expert's degree of expertise and emphasize factors that make your opponent's witnesses less qualified than your own. Finally, you may be able to weaken expert testimony in inexact sciences by eliciting an admission from the witness that it is not possible to be absolutely certain.

#### [a] Attacking Personal Credibility

An expert may be cross-examined on the issue of bias like an ordinary witness. If you have the ammunition to attack the neutrality of an expert witness, this is a relatively easy kind of impeachment. You do not have to confront the witness in his or her own area of expertise. The concepts involved are the same as those for lay witness cross-examination. Some common areas of questioning are:

- **Employed by a party.** An expert who also is employed by one of the parties obviously has a built-in bias for that side and a personal interest in holding onto the job. The witness also may have personal interest if he or she has been involved in the design, manufacture or marketing of a product now claimed to be defective or that was involved in the accident in some way.
- **Frequent witness for a party or industry.** Experts who are not permanent employees may still have a financial interest in testifying for one side or the other if they earn significant amounts of money as a professional expert witness. If an expert frequently is retained by one party, or frequently testifies on behalf of one side of a controversy (e.g., "whiplash" doctors or American Tobacco Institute cancer experts), you can bring out the number of times

---

<sup>53</sup> R. Keeton, *supra* note 42, at 162–65.

the expert has worked for a party and the amount of income received over the years.

- **Accepts research funds from organization related to a party.** Especially if an expert comes from a university or medical school, the expert or a close colleague may be a recipient of research grants given by one of the parties, a related company within the same industry, or a trade association.
- **Hired gun.** If an expert no longer actually practices in his or her field, but has become a hired gun who spends all that person's time consulting and testifying, the jury may view him or her as less credible than an expert who actively practices. The hired-gun theme can be used in closing argument to suggest that a hired gun has to satisfy the client or nobody will hire that person again. This kind of argument is risky, because it impeaches the credibility of the lawyer (an obvious hired gun) at the same time as the witness. It obviously only works when you have an expert who is still engaged in practice. You can bolster this line of cross-examination if you can find advertisements in which the expert offers his or her services, and confront the witness with them.
- **Amount of compensation.** Expert witnesses often are paid large sums of money. In some cases, they may be paid more per hour for consulting than they get at their regular jobs, especially if they teach at universities or work for the government. This kind of impeachment is common — so common, in fact that most attorneys prepare their experts on how to handle the questions. Experts will usually disclose their fees on direct examination, justify them, and affirm that they would never testify falsely just to earn a fee. For this reason, some attorneys suggest that cross-examining concerning fees is nitpicking and not worth it unless the fee is exceptionally large. However, if the fee is substantial, you probably should raise the issue whether or not it was defused during direct examination. A simple, "Did I hear you right? How much are you being paid for your testimony?" will usually make the point.

### [b] Attacking the Credibility of the Testimony

Without insinuating that an expert witness is dishonest, it may be possible to impeach the credibility of the expert's testimony by demonstrating that it is unreliable. You can bring out that the expert had only limited exposure to firsthand information, is basing his or her opinion on unreliable or disputed facts, has failed to conduct a complete investigation, or has reached a conclusion different from most experts.

Probably the most fruitful line of attack is to bring out that the expert witness has had to rely on other people for the information on which his or her testimony is based. Often, an expert will have no personal knowledge of the facts at all, and will base an opinion solely on a review of records prepared by others. In personal injury cases, medical witnesses called on both sides may have examined the plaintiff only once or not at all. If your expert has personal

knowledge of the case but the other side's does not, then it may be to your advantage to emphasize on cross-examination the limited opportunity the other expert had to observe and gather direct information.

This kind of cross-examination can be especially effective if the underlying facts are unverifiable. A good example is a medical expert who bases an opinion about the nature of the plaintiff's condition on the subjective complaints of the plaintiff. You may be able to show that the expert has to assume the truth of unverifiable statements by the plaintiff to arrive at a diagnosis; if the plaintiff is lying or exaggerating, then the diagnosis would be different. The expert's opinion then becomes only as credible as the plaintiff's complaints.

A closely related kind of impeachment is to demonstrate that the expert failed to properly conduct a complete investigation. This kind of impeachment is probably overused in criminal cases to attack "shoddy police work." The problem is that jurors are inclined to believe that experts know what they are doing. If you say an expert did not do a thorough investigation, but the expert says the investigation was adequate, why should the jury believe *you*? To be effective, this kind of cross-examination must be combined with positive testimony from your own experts that additional tests or investigations were needed. Three possible lines of inquiry are:

- Revealing that the expert did not perform certain tests commonly used in similar circumstances.
- Exposing the fact that the expert was poorly informed on the background data. For example, an economist testifying for the plaintiff that the defendant's anti-competitive actions probably caused the business damages for which compensation is sought can be undercut by exposing the fact that the expert was unaware of earlier unrelated events that could have produced the same damage.
- Discrediting underlying tests or experiments the expert relied on but that were conducted improperly. You may be able to expose methodological flaws or show dissimilarities between the conditions at the time of the incident and the conditions under which an experiment was conducted. However, challenging an expert on whether an experiment was properly conducted is dangerous business and should not be attempted without assistance from experts qualified to critique experimental design.

One other approach for impeaching the reliability of an expert's opinion is to demonstrate that it is inconsistent with what has been published in that field of specialty. This impeachment through learned treatises will work only if the texts you use are genuinely authoritative (or written by the witness) and if no new developments in the field have made them obsolete. You will need expert guidance on these questions; you cannot just grab a book from the Medical School Library. Although modern evidence rules permit you to use treatises established as authoritative by your own witnesses, this kind of impeachment probably will be effective only if you can get the expert you are cross-examining to agree that the treatise is a leading one in the field.

To increase the likelihood of successful impeachment by learned treatises, trial practitioners routinely use two tactics: 1) interviewing or deposing an

opposing expert in the expert's office and noting the treatises on the bookshelf; and (2) during the deposition, asking the expert about the books he or she consults.

When you are using medical literature in cross-examination, one of the most effective methods is to get the witness committed to the authoritative standing of the particular book or of the writings of the particular author before you produce the writing itself for the expert to read and consider carefully. Sometimes you can do this by asking the witness to name the outstanding authorities in the field; it achieves much greater effect if he names your book in response to that question than if you ask only whether it is not true that your book is recognized as an authority in the field. Having established the authority of the book, you may then read selected passages contradicting his opinions, or you may hand him the book and ask that he read the marked passages. In that exceptional situation, on the other hand, in which the writings are those of the witness, it will often be more effective to ask him whether he agrees with certain extracted statements before advising him that the statements are extracted from his own works; occasionally such a witness is caught in the embarrassing situation of disagreeing with a passage from his own writings. As to the use of particular passages from a book, whether written by the witness or another, the advance advice of your own expert is essential unless you are certain that you have a full grasp of the subject; otherwise, with limited knowledge of the field you may misconstrue the writing and get out on a limb that the witness expertly saws off by pointing out the correct construction and other passages in the book that support it.<sup>54</sup>

### **[c] Emphasizing Contradictions Between Opposing Experts**

On rare occasions, experts called by your opponent may contradict each other. They may disagree on proper procedures, or there may be discrepancies in their conclusions. If this happens, you should consider whether the differences of opinion are significant enough to cast doubt upon the ultimate conclusions they reached. For example, if you can elicit from two experts that each thinks that the other's methods were unreliable, you may be able to impeach both. The risks inherent in this tactic are enormous because it avoids the fact that both experts ultimately have reached the same conclusion, and it gives both witnesses a chance to reemphasize that their own methods were reliable.

### **[d] Attacking the Expert's Qualifications**

In most cases, if one side calls an expert, the other side also will call one with a different opinion. The jurors then will be faced with deciding which expert to believe. One basis upon which this decision can be made is the respective qualifications of the competing experts. If jurors believe an expert to be unqualified, or less qualified than an opposing expert, they may be less

<sup>54</sup> R. Keeton, *supra* note 42, at 158–59.

likely to accept that person's opinions. Therefore, if you know about weaknesses in an expert's qualifications, and if these weaknesses are significant enough to cause a reasonable juror to question the validity of the expert's conclusions, this may be a fruitful area of inquiry.

Weaknesses in qualifications can be found in two places: lack of training and lack of experience. Lack of training may be shown through weaknesses in educational background, lack of advanced degrees, graduation from an inferior school, absence of professional certification, absence of writing or teaching in the particular subject, or nonmembership in relevant professional societies. Lack of practical experience can be demonstrated if the expert is new to the field, is a theorist with no hands-on experience, or does not regularly teach or do research in the field. This kind of impeachment is most effective if it is done in conjunction with affirmative proof about the outstanding qualifications of your own expert.

### [e] Attacking the Expert's Degree of Certainty

By far the most dangerous type of impeachment is to attack the expert's degree of certainty. This technique works best with academic experts and witnesses not used to testifying. Science is always a question of probability, scientific conclusions are statistical, and there are always qualifications and margins for error. These can sometimes be exploited to create the impression that the expert is really not very certain of his or her own conclusion.

The fact that important aspects of the witness' testimony are opinions makes it worthwhile . . . to look for and develop uncertainties and qualifications in these opinions. An expert will usually admit that some questions put to him are not subject to positive answers and that under these circumstances persons qualified in the field recognize that there is always a possibility that their opinions are wrong. In developing this idea, however, you should proceed with great caution. Expert witnesses who have stated qualified opinions on direct examination have a way of stating their opinions with more conviction, rather than less, when they are annoyed by the feeling that the cross-examiner is trying to make it appear that the opinions are arbitrary guesses. . . . With respect to developing particular uncertainties and qualifications, you should exercise even greater caution. Unless you have acquired a thorough knowledge of the subject from experience in trial of similar cases, you should not attempt this without advice from your own experts; otherwise you may fall into the trap of merely giving the witness an opportunity to explain more fully than he did on direct examination why, in reaching his final opinion, he excluded the other possibilities you have identified.<sup>55</sup>

### [4] Preparation

The same principles discussed in Chapter 7 for preparing the cross-examination of lay witnesses apply to experts. It is critically important that you carefully prepare how you will phrase your questions.

<sup>55</sup> R. Keeton, *supra* note 42, at 156–57.

- You probably should write out most of your questions, unless you can remember the Latin names for the bones.
- Ask only one fact per question.
- Always ask leading questions.
- Keep your questions simple.
- Do not repeat damaging direct examination.
- Use the witness's own words if possible — from depositions, medical records, or publications.
- Don't ask the witness to agree to your conclusions; the witness is being paid a lot of money to hold opposite opinions.
- Don't ask the witness to explain an answer.

### [5] Conducting the Cross-Examination

The same principles discussed in Chapter 7 for conducting the cross-examination of lay witnesses apply to experts. To conduct the cross-examination of an expert, it is even more important (and even more difficult) that you be in control. Where you might have elected to allow a lay witness to be somewhat evasive rather than appear to be a bully, this consideration does not apply to experts. Jurors are more likely to see a battle between a lawyer and an expert as a fair fight. You should more aggressively try to limit an expert's answers to "Yes" and "No", using all three techniques:

- Ask the witness to limit his or her answers to "Yes" or "No," both at the beginning and throughout the examination as needed.
- Move to strike any volunteered portions of the testimony as unresponsive and beyond the scope of your question.
- Ask the judge to instruct the witness to limit his or her answers to "Yes" or "No" if the witness persists in being evasive.

In addition, you should pay particular attention to:

- Knowing when to abandon a line of questions because you have gotten all you are going to get, or the testimony is taking an ugly turn.
- Choreography.
- Asking fair, straightforward questions. Trick questions containing half truths are not likely to work with an expert.

In one respect, conducting the cross-examination of an expert is different from an ordinary cross-examination. You probably cannot do it alone. You need your own expert consultant sitting beside you who can explain the importance of specific answers, suggest fruitful lines of new inquiry, and let you know when you have inadvertently phrased a question in a way that makes it ambiguous to the expert. Because of the rule requiring the separation of witnesses,<sup>56</sup> you may have to file a special motion to ask for permission for your expert to be in the courtroom and advise you during cross-examination of the opposing expert.

---

<sup>56</sup> *E.g.*, Fed. R. Evid. 615.

### NOTE

**Apparent cross-examination of experts.** When a witness has given damaging testimony but you have no effective means of cross-examining, some practitioners favor an apparent cross-examination that remains on the fringes of the witness's testimony. Three methods of apparent cross-examination have been suggested for experts:

- Asking the witness to agree to a sequence of general scientific principles that either will be used by your own experts in reaching their conclusions, or would lead to a different result if facts existed to support them. Ted Warshafsky, *Cross-Examination of Technical Experts*, TRIAL DIPLOMACY J. at 20 (Spring 1978)
- Asking questions about the details of complicated principles in the field of specialty if you have any reason to believe the witness might not know the answers off the top of his or her head. WAYNE STICHTER, *A Practitioner's Guide to the Use of Exhibits and Expert Testimony*, in ADVOCACY AND THE KING'S ENGLISH 121 (G. Rossman ed. 1960) (citing example of doctor who became confused over the Latin names for bones).
- In rare cases, demonstrating that the witness has claimed to be an expert in too many diverse fields to be taken seriously in any one. ROBERT HABUSH, ART OF ADVOCACY — CROSS-EXAMINATION OF NON-MEDICAL EXPERTS § 4.05 (2001) (citing a case involving a design engineer who had previously testified about printing presses, snowmobiles, hoses, forklifts, fire trucks, ladders, car steering mechanisms, refrigeration and a dozen more areas).

### § 8.06 POSTSCRIPT: ARE JURORS OVERAWED BY EXPERTS?

Some courts and commentators have expressed concerns about the proliferating use of experts. They fear jurors will be “overawed” by pundits with impressive academic credentials spouting all manner of nonsense in the courtroom, will be unable to detect junk science from real science, and will abandon their role as fact-finders in favor of going along with whatever the expert says. For example, in *United States v. Addison*,<sup>57</sup> the District of Columbia Circuit considered the admissibility of expert testimony about the identity of a person who made a 9-1-1 call, based on spectrogram (“voiceprint”) analysis. The court said that judges should be cautious about admitting expert testimony “[s]ince scientific proof may in some instances assume a posture of mystic infallibility in the eyes of a jury of laymen.” A similar sentiment was expressed by the Minnesota Supreme Court over forensic testimony by three expert witnesses in *State v. Carlson*;

Our concern over this evidence is not with the adequacy of its foundation, but rather with its potentially exaggerated impact on the trier of fact. Testimony expressing opinions or conclusions in terms of statistical probabilities can make the uncertain seem all but proven,

---

<sup>57</sup> 498 F.2d 741 (D.C. Cir. 1974).

and suggest, by quantification, satisfaction of the requirement that guilt be established “beyond a reasonable doubt.” See, Tribe, *Trial by Mathematics*, 84 Harv.L.Rev. 1329. Diligent cross-examination may in some cases minimize statistical manipulation and confine the scope of probability testimony. We are not convinced, however, that such rebuttal would dispel the psychological impact of the suggestion of mathematical precision, and we share the concern for “the substantial unfairness to a defendant which may result from ill conceived techniques with which the trier of fact is not technically equipped to cope.”

The fear is overblown. Research<sup>58</sup> shows that lay jurors experience difficulty both in comprehending statistical information and in deciding how much importance to attach to it, even if expert witnesses are called to explain it. Presentation of such information by opposing expert witnesses through direct and cross-examination compounds the problem and creates confusion in jurors about the content and the appropriate weight of statistical information. Jurors have particular difficulty integrating statistical with anecdotal evidence, and tend to ignore statistical information because it cannot be reduced to heuristics (story lines).<sup>59</sup> Jurors tend to disregard the experts to the same extent that they disregard the underlying information because they cannot understand it, and therefore give it *inadequate*, rather than too much weight.<sup>60</sup>

---

<sup>58</sup> See Joe S. Cecil, Valerie P. Hans, and Elizabeth C. Wiggins, *Citizen Comprehension of Difficult Issues: Lessons From Civil Jury Trials*, 40 AM. U.L. REV. 727 (1991).

<sup>59</sup> See Michael Saks & Robert Kidd, *Human Information Processing and Adjudication: Trial by Heuristics*, 15 LAW & SOC'Y REV. 123 (1980-11)

<sup>60</sup> David Faigman, *Bayes' Theorem in the Trial Process*, 12 LAW & HUM. BEHAV. 1, 13 (1988); Thompson & Schumann, *Interpretation of Statistical Evidence in Criminal Trials: The Prosecutor's Fallacy and the Defense Attorney's Fallacy*, 11 LAW & HUM. BEHAV. 167 (1987).