

## Reasonable Doubt in the Age of CSI: Experts and Science in the Courtroom

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The nature of criminal defense practice is changing. Prosecutors are presenting ever-increasing amounts and types of scientific evidence in the courtroom. A reluctance to deal with such evidence is understandable. Few defense lawyers went to law school to be scientists. Most prefer to practice that which is comfortable, such as more traditional challenges to the perceptions and biases of civilian and police officer witnesses.

Nonetheless, scientific evidence exists, and, as a committed defense attorney, you must be prepared to confront it. When you hear the prosecutor say that the crime laboratory identified your client's DNA on the scene, you may recoil at having to deal with the science, with the word "plea" flashing through your mind. Yet, because the last thing anyone wants is to become a "plea lawyer," it is time to regroup. It is time to evaluate the scientific evidence with the same inquisitive and skeptical nature applied to all other evidence.

This article is intended to provide assistance in how to evaluate and challenge such evidence. The article discusses how to approach (A) the case where the prosecution fails to present scientific evidence and (B) the case where the prosecution presents scientific evidence that must be explained before the jury.

### A. Reasonable Doubt Includes the Absence of Scientific Evidence

To start, it is important to observe that there are allies in the evaluation of scientific evidence: those twelve ordinary citizens sitting in the jury box who, like you, are questioning the prosecution's evidence, and, as is key here, the lack of evidence, thus holding the prosecution to its constitutional burden.

The fact that jurors now expect scientific evidence in criminal cases provides the defense a powerful tool.<sup>2</sup> When prosecutors fail to bring forward such evidence, you can argue that the failure to obtain and present such evidence undermines the prosecution's proof and provides a reason to doubt. Reminding the jury that it is the prosecution's heavy burden to prove its case beyond reasonable doubt, and that the absence of evidence indicates that it has not met its burden can be a powerful argument in a case based on circumstantial or testimonial evidence. In fact, these simple but compelling arguments are succeeding in courtrooms across the country.<sup>3</sup>

Not surprisingly, prosecutors are grumbling that they are not getting convictions where, in *their* opinions, the defendants are clearly guilty. They complain to the press that they should not be expected to bring forward all possible evidence, just the evidence they believe necessary to prove their case. They complain about the "CSI Effect," saying that jurors are holding them to a standard of science fiction, not demonstrable scientific facts.

Do not buy into this claim. Nobody is arguing science fiction: In weapons cases, fingerprints and DNA *can* be obtained from the handle of a gun. In vehicular homicide cases, the speed of the automobile *can* be estimated by skid and other tire markings. In drug cases, the precise chemical concentration of the residue on the crack pipe found in the client's jacket *can* be calculated and contrasted with the concentration of the rocks of cocaine found ten feet away from the client who is a user not a dealer.

Prosecutors cannot be allowed to turn the legitimate "CSI Effect" – jurors' proper awareness that law enforcement has scientific tools at its disposal and has elected not to present such evidence to the jury – into a prosecutorial argument that low expectations should be enough to meet constitutional requirements.

In making this claim, you need to be wary of an inclination in which judges side with the prosecution and erroneously limit questioning and summations. Judges sometimes incorrectly view such absence-of-evidence arguments as premised in supposition or as improper "missing evidence" arguments. You should correct such misunderstandings by explaining that you are not asking the jurors to draw an adverse inference from the absence of evidence equally available to both sides but rather are asking the jurors to hold the prosecution to its burden to prove its case beyond reasonable doubt, including providing physical and scientific evidence that corroborates the testimony of its witnesses.<sup>4</sup>

To make this claim effectively, you also must know the available forensic science. For example, if your client is charged with a shooting and is arrested shortly after the event without possession of a handgun, you need to know about the availability and effectiveness of gunpowder residue testing. With this knowledge, you can cross-examine the arresting officer on the facts that such testing is available and was not used, and then argue that the absence of that evidence weakens the prosecution's case during summation. Here, the laboratory's own manuals, outlining their own best practices, can be powerful tools, with which you highlight to the jury that the prosecution's failure to comply with its own policies significantly weakens its case. Arguments about the absence of scientific evidence require as much preparation as arguments about the meaning of the results of scientific testing that was done. Therefore, from first assignment, think about the types of forensic evidence that might apply in your case and prepare to confront such evidence or argue its absence.

## **B. Challenges to Expert Witnesses at Trial**

Prosecutors' more genuine response to the "CSI Effect" is reflected by their efforts to obtain scientific and forensic evidence with far greater frequency than even five years ago. This is where the instinct to flee science runs up against the passion for trial. The challenge becomes how we prepare yourself for a trial where scientific evidence is central to the case.

### *1. The Standard of Admissibility*

The first step is to know the law of admissibility of scientific evidence. In interpreting Texas Rule of Criminal Procedure 702, Texas essentially has adopted the *Daubert*<sup>5</sup> test for determining the admissibility of scientific and other expert testimony.<sup>6</sup> The trial court acts as the gatekeeper to ensure that the proposed evidence is reliable and that the proposed expert is qualified to render an opinion. In making its reliability determination, the court considers a wide variety of factors.<sup>7</sup>

## 2. *Discovery*

The second step is to obtain full and complete discovery. Typically, the prosecutor only discloses a one or two page report, providing the expert's ultimate opinion and conclusion. This report is not full disclosure. Just as cross-examination of an eyewitness is ineffective without access to a witness' prior statements to the police and the grand jury, so too a competent cross-examination of an expert witness requires access to all his or her notes and reports. You must obtain every single note, recording, photograph, and computer file related to the expert's work on the case. This includes but is not limited to all correspondence between the expert and the prosecutor or the lead detective. If it is a DNA case, you also need the electronic data from the running of the software, typically handed over in CD-Rom form. You would not cross-examine about an out-of-court photographic identification procedure without copies of the photographs and some understanding of how the procedure was conducted. Similarly, in a case involving DNA or other forensic evidence, you need to know exactly how the expert conducted any forensic analysis in your case.

It is not easy to obtain full discovery. Some prosecutors and experts are unaware of their obligations and must be educated; others are simply unconcerned. Few, if any, have as complete an understanding of criminal discovery as the Constitution and rules demand. Do not be discouraged by their misunderstanding. Send carefully written, comprehensive discovery letters, serve detailed subpoenas, and submit probing Freedom of Information Act requests. Where compliance is lacking or limited, you should file timely motions to compel discovery and to enforce the subpoenas, grounded in the law that provides your right to the material. If your jurisdiction's courthouse practice affords minimal discovery, take advantage of the Houston Crime Lab scandal and other similar scandals across the country<sup>8</sup> and litigate for broader, fairer discovery.

## 3. *Laboratory Manuals, Protocols, and Quality Control/Assurance Procedures*

Discovery is not limited to materials connected directly with the analysis of the evidence. Whenever the prosecution presents evidence analyzed by a crime laboratory, obtain the laboratory protocols governing the type of testing done. Immediately request this information through discovery and by subpoena.

There are a number of benefits to this information. For one, use the manual to see if the prosecution's analyst followed the protocols, and, if not, cross-examine about the excuse for the deviation. Pointing out that an expert failed to follow protocols in his or her own

manual is particularly effective. For example, in the first DNA case that I tried, we established that the laboratory had ignored its protocols, with the result that the laboratory inappropriately neglected to include the presence of a third-party perpetrator's DNA on the scene.

Additionally, not all laboratory procedures are comprehensive or even adequate. If you compare your testing laboratory's procedures to those at other laboratories, you can demonstrate that the expert's laboratory has low expectations and minimal guidelines, which are hardly objective and scientific. Finally, because many experts have not read beyond their own guidelines, reading the manuals teaches you the extent of the expert's knowledge, which you can contrast with what you learn from other, more comprehensive sources, as discussed below.

#### 4. *Investigate the Expert*

You must investigate the expert witness no less critically than you investigate a cooperating informant. Credibility is as much the linchpin of an expert's testimony as it is of cooperators or jailhouse informants. If you undermine credibility, you have demolished the opinion.

The first step in undermining the credibility of the expert is a careful reading and investigation of the expert's curriculum vitae, obtained as part of discovery. It is no secret that experts exaggerate and outright lie about their experiences and qualifications. Investigate every single line of the resume. Do not assume the truth of the representations. Did the pathologist really receive that medical degree? What were the expert's grades? Did the expert really take that continuing education class and how rigorous was it? Does the resume reflect the taking and passing of any proficiency tests? Are there standards to join the expert's impressive-sounding professional organizations or do annual dues payment suffice? I recently watched a trial where the defense lawyer had two different sets of resumes for the same expert. The resumes were written several years apart, and, as it turns out, the more recent one expanded a number of educational claims reported in the earlier resume. When all was said and done, the expert admitted that he had puffed, and his credibility was lost.

The more you know about an expert, the more you know how to approach him or her on cross-examination. The public record is full of information about experts. Get everything you can. Run a criminal records check. Run searches through Westlaw, Lexis, and other databases. "Google" the expert. When has the expert testified before, and what did he or she have to say? Perhaps the defense lawyers in such previous cases can provide some intelligence. Ask around about the expert to anyone you think might have useful information.

Experts are professional witnesses. You should seek to obtain transcripts of previous testimony. Transcripts are the best kind of expert investigation because they provide a preview of the expert's opinion and alert you to previously undisclosed surprises. When you obtain transcripts, you learn that the expert's opinion may have changed from case to

case. Impeaching a witness about an expert's change in an opinion goes a long way in undercutting the credibility of the expert's opinion. To a jury, science should not change, and such impeachments indicate that the expert's opinion is no more than a subjective interpretation guided by his or her allegiance to the prosecutor and to the prosecutor's view of the facts. Think about laying the transcripts out on your table before starting cross-examination for the expert to see. The mere threat of impeachment often leads to a far more compliant witness, willing to provide that desired string of affirmative answers in response to your questions.

#### 5. *Interview the Expert*

In every single case you absolutely must interview the prosecution's expert face-to-face. You learn a wealth of information about the expert, the expert's opinion, and the bases of the opinion during that interview.

Do not worry about giving a preview of your case to the expert. You control the interview, and you control what information about yourself and your case that you will reveal to the expert. Further, do not worry if the expert refuses to meet with you. Scientists are supposed to be objective and even-handed, and an unwillingness to explain to you the analysis in advance of trial is fodder for effective bias cross-examination.

Treat the interview as a deposition, not as a preliminary cross-examination. The whole point is to gather information about the expert – how he or she will come across before your jury – and about the science. The interview is not a chance for you to show off how smart you are. The interview should be done in a non-confrontational manner. Get the expert to talk and keep him or her talking. The more the expert talks, the more you learn. The interview should feel like a classroom in which the expert is the teacher and you are the student. You get to show off what you have learned during cross-examination before the jury, when it matters.

#### 6. *Investigate the Scientific Evidence*

It is critical that you get out of your office and investigate the forensic evidence. Go to the crime scene and view the physical evidence at the police property room. If the case involves an autopsy and time of death is an issue, take a trip out to the medical examiner's office to see how and where the bodies are stored when brought into the morgue. If the case involves the interview of a child complainant in a sex case, visit the hospital or advocacy center where the interview took place. Observe the physical environment and learn where the interviewer was sitting in relation to the complainant – perhaps the physical circumstances affected that child during the interview.

You also must read all reports, statements, and expert's notes with great care and attention. Look for inconsistencies. Look for ways in which the expert's opinion differs over time and from other evidence. For example, blood pattern experts may opine about the physical evidence at the crime scene in a way wildly inconsistent with how eyewitnesses claim an assault occurred.

## 7. *Investigate the Science*

You need to know the science as well as, if not better than, the prosecution's expert. You must control the witness, and to do so, you must be prepared to exercise control. By meeting with the expert, you will have learned everything that the expert knows about the scientific evidence. But you must know more. The internet is a terrific resource to learn about the different scientific disciplines. Use it as your first resource, and then follow up by reading relevant articles and treatises.

Obtain copies of the leading treatises in the discipline. It is not hard to get an expert to acknowledge on the witness stand a particular learned treatise as an authority. Upon doing so, go the next step and show how the prosecution's expert opinion conflicts with that of the treatise. During deliberations, the jury will likely listen to you and follow the admitted authority and reject the discredited testimony.

Besides reading as much as you can, talk to other lawyers familiar with the science. Attend forensic conferences<sup>9</sup> and participate in forensic evidence listservs.<sup>10</sup> Reach out and identify other defense lawyers who have dealt with the subject. For instance, the Forensic Evidence Committee of the National Association of Criminal Defense Lawyers (NACDL) has experienced attorneys a telephone call away ready to help you. Local attorneys in San Antonio and elsewhere in Texas serve the same role.

In response to the growing use of scientific evidence, NACDL and the National Legal Aid and Defender Association (NLADA) have created a partnership to sponsor an online Forensics Library -- an ongoing, comprehensive, national repository of defense-oriented forensic science information. The NLADA-NACDL Forensics Library, at [www.nlada.org/Defender/forensics/](http://www.nlada.org/Defender/forensics/), provides a forum for defense attorneys to share many kinds of materials. Each area contains subfolders with weblinks, model pleadings, research bibliographies and articles, expert transcripts and affidavits from defense and prosecution witnesses, relevant court opinions, scientific standards or best practices, and much more. It is a great place for preliminary research.<sup>11</sup>

## 8. *Retain a Defense Expert*

As a general rule of thumb, if the prosecution has an expert working on an aspect of the case, you should have your own independent expert as a consultant and, potentially, as a testifying witness. Think creatively and consult with experts whenever you identify an area of expertise that could inform the defense theory. Independent experts are invaluable because they educate you about relevant scientific concepts, assist in discovery requests, help you figure out what you need to find out from the prosecutor's expert pre-trial, assist in preparing your cross-examination of the prosecution's expert, present affidavits or testimony in admissibility challenges, and testify in the defense case.

The effective use of a defense expert merits an article of its own, but several points can be made in this context. First, identify an expert by referrals from colleagues and your

investigation of professional associations, universities, web searches, and review of the scientific literature. Second, be aware that your communications with your expert and your expert's notes are protected by attorney-client work product privilege only until you decide that you will call the expert at trial, at which time all those notes are fair game for disclosure. The best practice is to have separate experts for consulting and testifying purposes. If you are going to use the same person in both roles, explain each role and how you want the expert to memorialize his or her work. Finally, you should provide the expert as much information as necessary to form an opinion and remember that you, not the expert, are ultimately responsible for case strategy. Do not defer to your expert.

## Conclusion

The "CSI Effect" creates both challenges and opportunities for defense lawyers. As science increasingly enters the courtroom, we must become increasingly comfortable with the science. Scientific evidence is no different than any other kind of evidence. Investigation and preparation remain the key ingredients to effective and successful representation of criminal defendants in cases involving such evidence.

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Mr. Ungvarsky thanks Jennifer Daskal, Christopher Flood, Todd Edelman, Tim O'Toole, Andrea Roth, Richard Schmechel, and Santha Sonenberg for their assistance with this article, with the caveat that any mistakes are his own.

<sup>2</sup>Jamie Stockwell, *Defense, Prosecution Play to New "CSI" Savvy*, WASH. POST (May 22, 2005); Kit R. Roane & Dan Morrison, *The CSI Effect*, U.S. NEWS & WORLD REPORT (Apr. 25, 2005); Richard Willing, *"CSI Effect" Has Juries Wanting More Evidence*, USA TODAY (Aug. 8, 2004).

<sup>3</sup>See Andrew Blankstein & Jean Guccione, *The Blake Verdict and the "CSI Effect,"* CHI. TRIB. (Mar. 22, 2005) (reporting observations that jury acquitted because prosecution failed to use forensic evidence to resolve reasonable doubts). Contrast Simon Cole & Rachel Dioso, *Do TV Shows Really Affect How Juries Vote? Let's Look at the Evidence*, WALL. ST. J. (May 13, 2005) (observing that television shows may make juries more inclined to convict because they falsely portray forensic evidence as unambiguous and certain).

<sup>4</sup>See, e.g., *Bishop v. United States*, 107 F.2d 297, 303 (D.C. Cir. 1939) ("Reasonable doubt is doubt arising from the evidence or lack of evidence in the case."); *United States v. Iredia*, 866 F.2d 114, 117 (5th Cir. 1989) (error for prosecution to respond to defense's challenge to government's failure to produce handwriting expert by noting that "[the defense has] the opportunity to present evidence if they wish"). See also *Allen v. State*, 693 S.W.2d 380, 383-84 (Tex. Crim. App. 1984) (recognizing as proper defense argument that absence of fingerprinting can be reason to doubt); *Greer v. United States*, 697 A.2d 1207, 1210 (D.C. 1997) ("[I]n assessing whether the government has met its burden of proving guilt beyond a reasonable doubt, the jury may properly consider not only the evidence presented but also the lack of any evidence that the government, in the particular circumstances of the case, might reasonably be expected to present. For this reason, defense counsel may appropriately comment in closing argument on the failure of the government to present corroborative physical evidence.").

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<sup>5</sup> *Daubert v. Merrill Dow Pharm., Inc.*, 509 U.S. 579 (1993). See F.R.E. 702 & 703.

<sup>6</sup> *E.I. du Pont de Nemours & Co., Inc. v. Robinson*, 923 S.W.2d 549 (Tex. 1995). See also *Kelly v. State*, 824 S.W.2d 568 (Tex. Crim. App. 1992) (pre-*Daubert* decision whose reasoning was largely adopted in *Robinson*).

<sup>7</sup> As set forth in *Robinson*:

There are many factors that a trial court may consider in making the threshold determination of admissibility under Rule 702. These factors include, but are not limited to:

- (1) the extent to which the theory has been or can be tested;
- (2) the extent to which the technique relies upon the subjective interpretation of the expert;
- (3) whether the theory has been subjected to peer review and/or publication;
- (4) the technique's potential rate of error;
- (5) whether the underlying theory or technique has been generally accepted as valid by the relevant scientific community; and
- (6) the non-judicial uses which have been made of the theory or technique.

923 S.W.2d at 557 (citation and footnote omitted).

<sup>8</sup> See, e.g., *Commission Created to Look Into Crime Labs*, HOUSTON CHRON. (June 20, 2005); Roma Khanna & Steve McVicker, *HPD Crime Lab Officials Resign to Avoid Firing*, HOUSTON CHRON. (June 12, 2003). See also Maurice Possley, Steve Mills & Flynn McRoberts, *Scandal Touches Even Elite Labs*, CHICAGO TRIB. (Oct. 21, 2004) (recounting problems with Virginia crime lab).

<sup>9</sup> For example, Forensic Bioinformatics, a private DNA consulting, is hosting its Fourth Annual Conference, *The Science of DNA Profiling: An Expert Forum*, on August 12-14, 2005. See <http://www.bioforensics.com/conference05/index.html>. PDSDC is sponsoring its Third Annual Forensic Science Conference, *a DNA Cross-Examination College*, on September 17, 2005. See <http://www.pdsdc.org/Calendar/TrainingDetails.asp?id=19>.

<sup>10</sup> NACDL and NLADA members should join the NACDL forensics listserv and eyewitness listserv. See <http://www.nacdl.org/listserv>. Numerous local listservs also exist.

<sup>11</sup> Other useful websites include <http://www.texasdefender.org/expert%20witness%20directory.htm>, [http://www.corpus-delicti.com/forensic\\_fraud.html](http://www.corpus-delicti.com/forensic_fraud.html), <http://www.bioforensics.com/kruglaw/>, <http://www.scientific.org/>, and <http://www.ncstl.org>.