Enhancing the Expert Witness:
Collaboration Between Testimony and Technology
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Introduction

Trial verdicts can, and have, turned on the testimony of the Expert Witness. Preparation of the testimony, supporting evidence and demonstratives can make the difference between a win and a loss. Enhancing the testimony of the expert witness with technology tools can give you an advantage in the courtroom.

Retaining an expert witness to assist with evaluating and explaining case issues is a common occurrence in litigation. In almost every case, the expert's testimony is a necessity and is expected by jurors and judges. This is especially true in cases where the issues are difficult to interpret and define. Most jurors don't have the topical depth of knowledge needed to sort through the myriad of concepts or ideas they must consider in order to properly render a verdict for most complex or technical cases. In order to assist in that effort, the expert witness is a critical component to advancing the party's theories in trial or at various stages of the case.

Most cases call for the opinion of an expert on specific issues of the case. The end result is the testimony and presentation of your expert's findings to an audience, judge, jury, mediator, arbitrator and even the opposition. All the time, effort, energy and money spent preparing the expert for the presentation should ultimately enhance your case.

Many times in court I have seen the direct examination of an expert witness and the method of demonstrating the expert's opinions result in a complicated testimony that runs the risk of "talking over the heads" of the audience. Juries often become confused by the testimony and have trouble sorting through all the details. In response, the jurors' attention tends to wander off, and as their ability to comprehend drops, they become frustrated. The testimony about the expert's findings and opinions runs the risk of having a negative effect on your case or the jury's perception of the case.

Unexpected challenges occur during trial. The amount of time the judge allows for direct examination may be limited, or the areas you need to cover with your expert may have to be adjusted due to rulings in court. Both of these can cause last minute changes while standing at the podium. This can often throw you and your expert off, ultimately diffusing the impact and importance of your expert's work. Some resulting problems can be poor methodology of presentation, confusing graphics, loss of continuity and too many long winded oral answers with no supplemental visuals. The result is a jury who never gets the story or "sees the picture" that you thought was powerful and persuasive. Hence it never makes it out of the starting blocks and the impact you were hoping for is gone.

Let's examine some common problems and discuss suggestions on how to enhance and clarify your expert's "presentation" and testimony that will guarantee an impacting and memorable result for the jury or audience.

The Expert's Tutorial

In general, when conducting a direct examination of an expert, the first thing you should do in an effort to enhance your expert's presentation is to slowly and clearly introduce the audience to the general issues on which your expert will be testifying. To do this effectively I recommend a tutorial using visual aids.

One of the first steps you will want to take during the examination of your expert is to cover the basics of the topic at hand. This is what I call "The Expert's Tutorial".

The tutorial is the part of the testimony that gives the audience an overview of the area on which the expert will testify. Most expert direct examinations cover this, but the problem is the lack of use of visuals. These visual aids may be a series of graphics that do nothing more than give the jury a crash course on the area on which your expert is about to testify. This tutorial usually addresses areas that are so basic they are not disputed and thus this part of your presentation never draws objections. The advantages in doing a tutorial with visual aids are:

1) You can teach or educate the jury your way, using your graphics. This is especially true if you are the plaintiff in the case and you go first. A crash course on your "terms" helps define your theories and put them into context for the jury. Using graphics will dramatically reduce the time to teach your jury the expert's topic.

2) You can use the same set of graphics to aid in explaining the expert's opinion, your position of the case and how it differs from your adversary. Using the same "style" of graphics for the expert's testimony that were used in the tutorial further "links" the expert's testimony with perceived "industry standards". Thus, the jury gets accustomed to that "look and feel" you portrayed during your tutorial with the case-specific graphics.

3) Try to use as many stipulated or admitted exhibits in the expert's examination as possible and reasonable. Incorporating real exhibits, such as document or photographs into demonstratives to bolster the expert's opinions serves to authenticate that expert's opinions and demonstrate that the opinion is based on real case facts and evidence and not a made up or "bought and paid for" art.

The jury generally appreciates the "crash course" on the basics so that they know what to measure the expert's testimony against. Then, when you dig deep into the issues with the expert's testimony and the differences in contrast to the opposing

position, especially in a strongly disputed area, the jury has a base point from which to evaluate the expert's opinions.

The Academia Expert

In many instances, an expert witness comes to the lawyer from the world of academia. Presentations these experts traditionally give in their daily lives are vastly different than the one you will ask them to perform in court. Most of these academic experts are accustomed to teaching in a classroom or lecture hall, or delivering a speech at a conference. In these linear environments they are allowed to "lecture" in a free format. These audiences are different from a jury in mainly two ways: 1) their audience is already, to some degree, educated on the topic that is being presented, and 2) their audience is very eager to learn the material that is being presented. Neither of these scenarios is commonly true with a jury.

In addition, the presentation format in the courtroom is completely different. You are all familiar with the Rules of Evidence and Civil Procedure regarding the examination of a witness. Once on the witness stand, most academic experts forget that they cannot begin speaking freely about a topic or issue. They need to be reminded that they are "fed" the question and then must give a specific answer. Often they tend to carry on with an explanation of their opinion or position, ultimately resulting in a narrative objection by an attentive opposing counsel.

One of the ways to overcome this problem is by using illustrative aids or graphics. Using demonstratives is always a good idea to assist in conducting the examination of your expert witness. Visual aids can assist with the testimony of your expert regardless of the topic to which they are testifying. Not only can graphics and demonstratives assist in the testimony, but the graphic can also be used as a "visual outline" for the expert who may have difficulty remembering "where we are going next."

In most cases, experts need to tone down their testimony as they speak to a layman jury. Demonstratives and graphics assist with this task by adding the "visual component" to the presentation. Carefully conceived and prepared graphics can assist in breaking down the topic to understandable levels.

A suggestion is to create graphics using a "build technique." Briefly, "animate" your graphics so that they build one step at a time. Placing an entire graphic with many objects on the screen at once has been found to confuse jurors as to the message of the graphic. In using this build technique, your expert can walk the jury through each point of the graphic, giving the expert the opportunity to "lecture" their way as each build of the graphics is revealed.

Another suggestion is to have the expert get up out of the witness chair (with the court's approval) and move to the display screen to testify to the jury in a more personal and interactive manner. This can also be done even when showing your case evidence

such as documents or photographs. Using this method will leave the impression that the expert is part of the graphic or evidence. We want the jury to remember the testimony as well as what is displayed to give both a more impacting impression.

Another technique we use is to provide the expert with a hard copy of the fully built demonstrative before they begin their testimony about the graphic. Once you overcome any objections, whether you are using a graphic demonstrative or an exhibit, you can then proceed with the testimony. Your expert can review the graphic from the hard copy showing it fully built. They are reminded in advance of each step that is coming and can mentally prepare what they are going to say before the question is posed.

The result is more concise testimony from your expert witness in an environment which is often uncomfortable and intimidating, even for the most seasoned academic lecturer.

Real Science vs. Jury Science

Cases that involve very complex and/or technical issues can sometimes get to a point where trying to explain every detail to a jury is a daunting, if not impossible, task. Although the need to make the record complete and clear for appellate purposes causes most trial teams to try to explain every little last detail, you may need to consider a different approach. Even the best graphics, 3-D animation and compelling testimony can sometimes confuse the jury. Time spent trying to convey a complex detail is wasted and your jury will soon get frustrated, lost and disinterested. Ultimately, the results will have a negative effect on your case and cause you to waste precious court time.

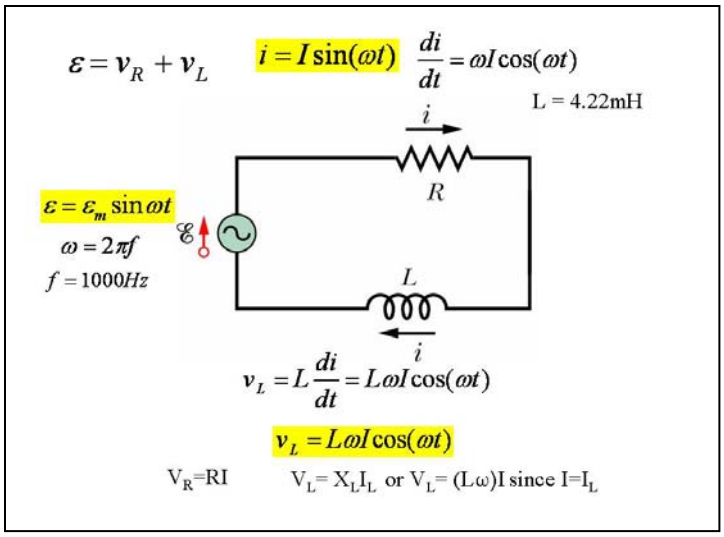
The decision that needs to be made is whether you "teach" real science or jury science, real technology or jury technology, real medicine or jury medicine. The concept of Real Science vs. Jury Science is simply a suggestion to simplify a concept to its basic terms. Once you have simplified the concept, use a simple analogy to help teach it to your jury or other audience. Then, create a set of graphics to illustrate the analogy or simpler concepts. I am not suggesting that you "teach" or present inaccurate facts but merely trim the explanation, giving the audience only enough information so that they can grasp the concept to assist them in making a decision.

For example, you don't need to explain the derivation of the complete mathematical set of equations of motion to a jury to explain to how gravity works. Recently in a case, we were faced with a situation on how to explain Alternating Current used in Residential Power Distribution from a utility company to a jury. Real Science might explain Alternating Current like this:

> *An alternating current (AC) is an electrical current, where the magnitude and direction of the current varies cyclically, as opposed to direct current, where the direction of the current stays constant. The usual waveform of an AC circuit is generally that of a sine wave, as this results in the most*

efficient transmission of energy. However in certain applications different waveforms are used, such as triangular or square waves. The "effective voltage" is known as the RMS or Root Mean Square Voltage.

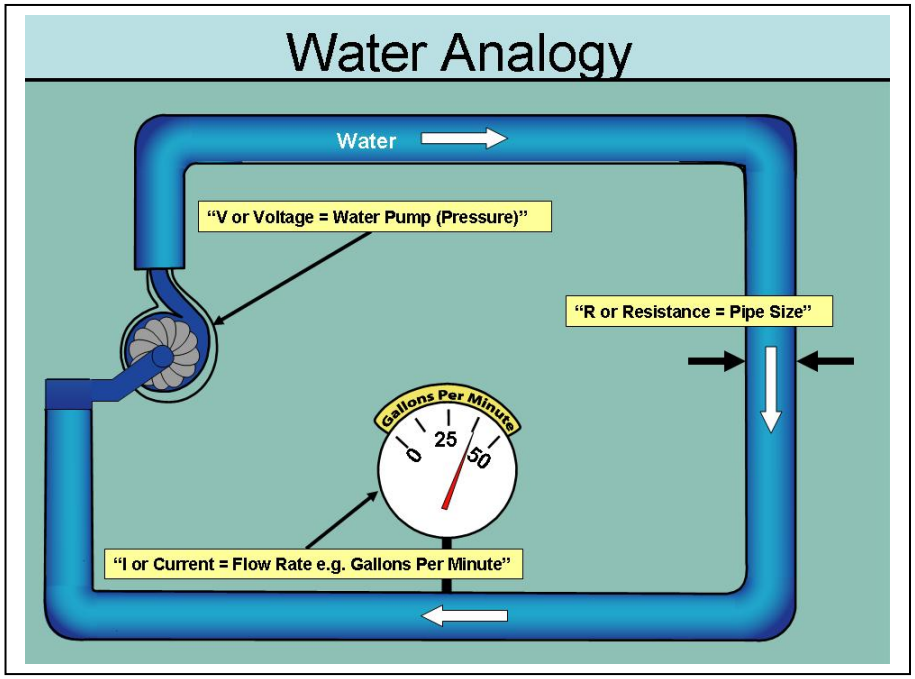
The diagram below illustrates AC current and the applicable equations.



Jury science would say:

"Electricity or current flows in a circle from point A to point B, and then back to point A.

The diagram below illustrates a "water analogy" to explain how current flows through a circuit.



Probably the best example is the analogy of electricity to water. When describing how some basic electricity works it makes sense to use a water analogy and describe how electrons can flow and act just like water in a pipe. To explain how electricity flows in a circuit is like explaining how water will flow through two pipes, or what a plumber calls “flow rate”. The bigger the pipe, the more water flows through it. The “bigger” the circuit (or least amount of resistance), the more electricity, or current, flows through it.

Thus, a set of graphics made to show a jury the water flow analogy, something they can better visualize and thereby are more familiar with, increases their ability to understand invisible electricity, rather than trying to create graphics that depict why more current flows through a better conductor.

In the above example, the simplified explanation of electricity and current through a circuit is all a jury needs to know to understand these concepts. Electricity was not on trial in this case. Rather, understanding the real world analogy of it helped the jury make a determination of liability. Using this methodology, expert testimony graphics only need to illustrate concepts, they don’t need to explain every last detail.

How to create and present these simple analogies requires a team effort. This is sometimes easier said than done. Working with an expert on how to simplify a particular issue comes with its own set of challenges. Some experts can do this with some guidance from the trial lawyer. Once the trial lawyer and the expert come up with a simplified version, make sure that:

1) The examining lawyer fully understands the application of the simplified issue or analogy to the specific topic and its “big picture” purposes. This exercise will be a good indicator whether or not the approach will work with the jury. It also will assist the trial lawyer in developing the examination outline that will be used during the actual direct examination, and;

2) The expert feels comfortable testifying to this simplified version. When the expert has a major role in the conceptual creation of the simplified graphics, agrees with the illustrations, she will understand how to use the graphics effectively as an aid to her testimony. Also, make certain that the expert understands how the computerized presentation of the graphics will work in the courtroom, i.e., with slide animation steps, changing colors, etc.

The Expert Report

In most cases where an expert is retained, after analysis, the expert generates a written report. This same report is often offered as an exhibit at trial and is most certainly referenced in depositions, briefs and motions. Often times, experts’ reports need some kind of visual or graphic enhancement because most experts are not presentation specialists, rather they are professionals in such specialties as electrical engineering, finance or economy or medical disciplines. They are not experts at the best way to illustratively depict their work. As thorough as the expert’s report may be,

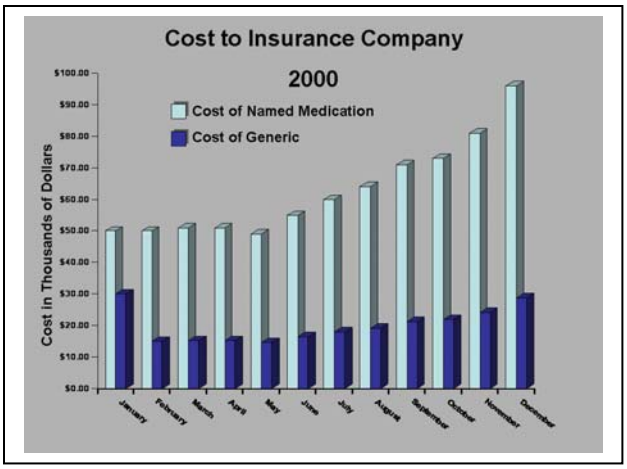
the way in which the expert chooses to illustrate certain themes of the report can sometimes be very confusing to a layman. This may become very critical when presenting to a layman jury. Here are some tips to enhance the experts' reports before you produce them.

In addition to obtaining a printed hard copy of the report, try to get a digital copy from the expert. For example, if the report was created on a word processor using Microsoft Word, then try to get a copy of the original ".DOC" file. Ask to receive a copy of the report on a floppy disk, CD, DVD, or e-mail. In addition to the report, there may be supporting data which has also been generated and/or stored on a computer, such as charts, graphs, or scientific data. If that is the case, then ask for that information in its original digital format. These digital versions of the "raw data" can then be imported into a variety of graphic programs such as Microsoft Excel, PowerPoint, or Adobe Photoshop. The software applications have many features that allow you to take otherwise "raw", boring data and liven it up for demonstrative purposes to assist the jury or audience in comprehension of the total report. For instance, raw numbers taken by a technical expert can easily be imported into Microsoft Excel to be later presented as a bar chart. The illustration below shows a comparison of raw data vs. a bar chart.

Cost to Insurance Company

2000

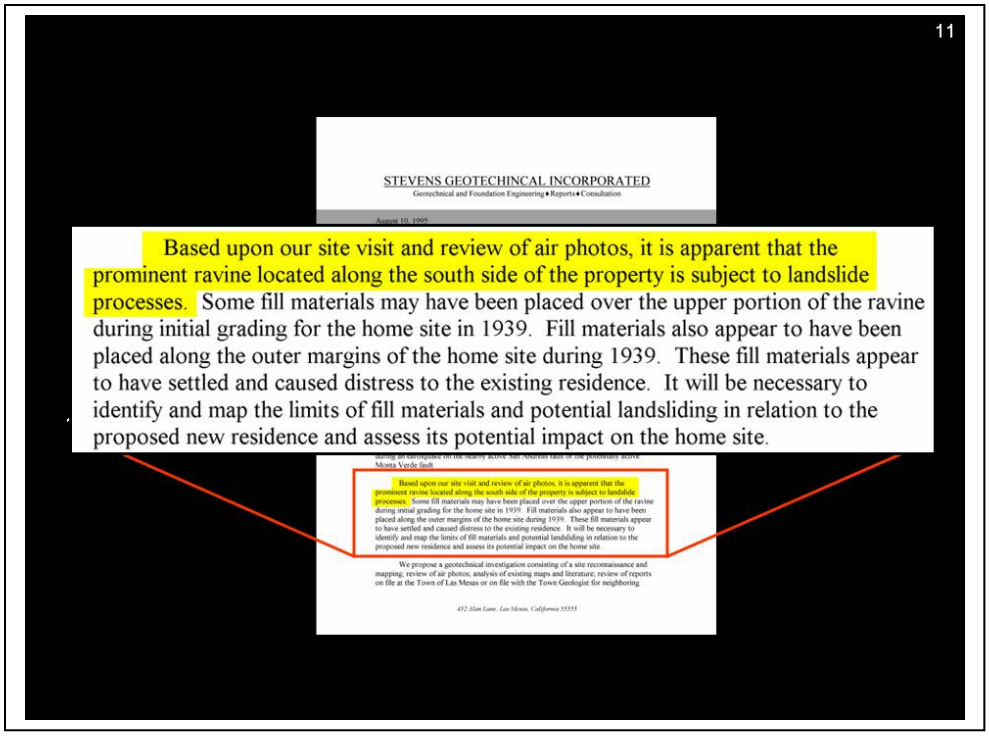
31	50	15	46	4	1.8	450	360951	3.3
27	50	15	46	4	1.9	501	439115	3.4
32	51	15.3	45	4	1.8	558	272572	3.3
29	51	15.3	44	3.8	1.7	608	170372	3.3
32	49	14.7	42	3.7	1.6	659	131485	3.3
29	55	16.5	51	3.7	1.9	665	190293	3.3
33	60	18	47	3.6	1.7	660	239038	3.3
29	64	19.2	44	3.8	1.7	658	429097	3.3
30	71	21.3	38	3.7	1.4	643	258463	3.3
32	73	21.9	41	3.8	1.6	627	96799	3.4
29	81	24.3	48	3.8	1.8	616	195292	3.5
34	96	28.8	51	3.9	2	619	225602	3.4



The two charts show the same information. The one on the left shows the raw numbers. The chart on the right shows the difference between the first and second columns of data. The objective of this data is to show the difference between the first and second column. The graphical bar chart on the right gives a better way to visually compare the two sets of numbers rather than simply observing the columns of numbers shown on the left. Juries appreciate a graphic look at a set of numbers rather than trying to study and analyze rows of numbers in spreadsheet cells.

Having the expert's report in a digital file format allows you to easily prepare it for presentation purposes. Too many times I see a trial team take the hard copy of the expert's report, scan it, then display charts and graphs or collections of numerical date directly from the scanned version. Charts and graphs presented in this manner lose color quality and the ability to animate or "build" the graph. A better method is to begin

with the electronic files of the report, underlying supporting data, and graphic summaries of the findings and build demonstratives from that which replicate those in the report. The exception to this is displaying in court the written text of the report to a jury. To display those textual portions of the report, you can scan the report and use the image files to create specialized document slides or use your favorite trial presentation software to zoom in, "tear out" and highlight relevant portions of the report. This method is shown below.



Finally, I will repeat this suggestion because I believe it merits repeating, is to use the build or animation technique. Taking the bar charts or graphs and having the chart or graph "build" one step at a time focuses the testimony and the jury's attention on those specific points demonstrated on the chart as they are discussed.

Using Full Motion Animation with a Technical or Mechanical Expert

Arguably, the best graphical way to demonstrate a process, event or simulation is through the use of Full Motion 3-Dimensional Animation (3-D Animation). Using this method is by far the best way to educate and help a jury understand technical or mechanical issues and concepts. Typically there must be testimony provided to substantiate accuracy and lay the foundation for the animation. Typically, that witness is your technical or mechanical expert. Likely it is this expert's work or research that supports the data from which the animation is derived. Here are some tips and suggestions about using this type of technology to enhance an expert's testimony.

First, your expert must be the “designer” and “director” of the animation. They may not necessarily be an expert in the mechanical creation of the animation, but they should be somewhat familiar with how the hardware and software creates the end product. Many times in court the question is posed to the expert about how the animation was created. The expert fumbles a bit and answers that they are not aware of exactly how the animation is created but rather they agree with the results. This looks bad to a jury and makes it seem like the lawyer created the animation and has instructed the expert to testify to it, and you risk your expert losing credibility with the jury. You must make sure your expert is well-versed on what software was used, the process involved and how the file or video was ultimately created. As long as they can answer one or two of these questions, your jury will know that the expert’s work is behind the animation and not just the lawyer. In addition, there is a chance that the expert’s lack of knowledge on how exactly the animation was created could cause the presentation of the animation to be excluded**.**

When preparing to present an animation, take some time to plan and rehearse how and when the animation will be played during the expert’s examination. For example, when playing an animation, you will likely want to pause at certain intervals to allow the expert to comment on the animation as well as allow the attorney to ask questions specific to the animation and the expert’s opinions. A plan should be established between the lawyer, the expert and the system operator defining when the animation will be paused and, if necessary, to be reversed for clarity. Consideration should be given to the method of playing the animation. Animation files are typically produced as a computer file. Sometimes they are transferred to a DVD for playback on a commercial DVD player or they are produced as a standard digital computer file for MAC or Windows. In some instances, they are produced onto an analog video tape for playback on a standard VCR or video tape player.

Coordinating the Technology Team with the Expert

When computerized trial presentation is used in a case, a team of professionals are assigned the task of managing and applying the technology. One of the many tasks the technology team is responsible for is the operation of the computer system that ultimately displays evidence in court. The system typically consists of a laptop PC or Macintosh computer, a display system, usually a projector and screen, and a series of flat panel monitors located throughout the courtroom. This task can be accomplished by an outside consultant or an appropriately trained and experienced staff member from the party’s counsel. In either case, time must be allocated to the rehearsal and coordination of the display of evidence and demonstratives.

The coordination between the presentation system operator, the lawyer and the expert is critical during the direct examination of the expert. This is particularly true during the presentation of an animation. Selection of the proper hardware and software will guarantee the operator’s ability to effectively display the animation. There are a variety of software packages to display animation files. One of the most important features to have is the ability to pause, re-wind, fast forward and move frame by frame

during the playback of the animation. This flexibility will allow the lawyer and expert to move freely during the examination and allow a good thorough explanation of the animated demonstrative. Inevitably, the animation will need to be re-wound or played repeatedly. It is here that the operator will need that flexibility to react to the request by the expert on the stand or the examining attorney. A brief meeting and rehearsal at some time before the expert's testimony will help insure a flawless collaboration between testimony and technology in court.