

The Lesser Known Benefits of Forensic Animations

By Eugene Liscio

There are two great benefits that proponents of forensic animations like to advertise about their product. The first is that having a courtroom animation increases the persuasiveness of an argument and the second is that an animation creates a lasting visual impression that is retained in jurors' memories longer than a verbal presentation alone. These would seem like fantastic selling points on their own, however, the truth is that most cases settle before anyone sets foot in a courtroom and only a small percentage of forensic animations are ever presented to a jury. Hence, the benefits that forensic animators should be touting are the ones that become apparent well before the "play" button is ever pressed in a courtroom.

The forensic animation process is more than just building 3D models that are moved in a virtual space. The act of putting together a crime or accident scene in 3D means that details need to be examined with a high level of scrutiny and that a method be established for error-checking and adherence to an expert's testimony (i.e. verbal or written report). The ability to ensure consistency in the time-distance relationships of available evidence is of great benefit to both the expert witness and the attorney. This is especially true when there are several events occurring at the same time that may be difficult to visualize all at once.

Animations and video are really nothing more than a series of rapidly moving images. There are various frame rates for television and broadcast, but most forensic animators work at a standard frame rate of 30 fps (frame per second). This means that for every second of animation, there are 30 images that pass by the eye in rapid succession. This frame rate causes the individual images to appear to have smooth motion, but an animator can stop the motion at any one point (in 1/30th increments) and inspect the 3D position of objects to see if they are in agreement with the provided evidence. It is this ability to accurately locate and measure objects in time that provides an effective means of checking evidence in criminal cases, accidents and personal injury cases.

Targeting the Audience

For most attorneys, the probability of a settlement is far greater than a trial. Therefore, it is important to use a forensic animation for the most likely audience. At the very least, the opposing attorney and their expert witness make up the bulk of the initial targeted audience, but a jury does not. Therefore, it is important to consider how one might prepare a 3D recreation slightly differently for the opposing counsel and their expert witness.

The general guidelines for creating a forensic animation should apply regardless of the target audience. The animations need to be authentic, factual and any part of a forensic animation that is prejudicial or that tries to provoke an emotional response is better left out. Any part of a recreation that does not deal with the facts and available evidence runs the risk of being inadmissible.

One thing to consider is that the opposing attorney and their expert witness are normally familiar with the details of a case, it may not be necessary to simplify to the same level as one would for a jury unfamiliar with the subject matter. Therefore, the animations can be focused on the topics that strengthen one's own case and those that rebut the other side's arguments. It is not necessary to include simple explanations, definitions or demonstrate the operation of a particular mechanism if it is not in dispute.

When rebutting the other expert's evidence, it may be beneficial to add additional data for locations, distances, velocity, acceleration, time, or other relevant data. These pieces of data may not always be of great value to a jury, but

to an experienced expert witness they may solidify some critical points or expose some pieces evidence that may add additional risk for the opposing counsel

Getting it Right

Often, when building a forensic animation, there are a number of reports from police, accident reconstructionists and other expert witnesses that need to be assembled so that the "facts" are cohesive and logical. More often than not, each report tends to highlight a different aspect of the evidence and there are almost always different, conflicting viewpoints as to what happened.

A forensic animator can provide a preview animation well before the trial date that clearly demonstrates the initial assumptions of a recreation. Highlighting the inconsistencies in evidence early on can save the expert and attorney from an embarrassing situation during trial and it allows the expert witness to question and clarify some of the "facts" and assumptions of evidence that may not agree with one another. As a result, it is not uncommon to find that an attorney or expert witness will change their position on certain issues since it becomes clear that something did not happen the way it was originally projected. On the other hand, if an error was found to be made from the "other side", it can prove to be a great "ace in the hole" during trial.

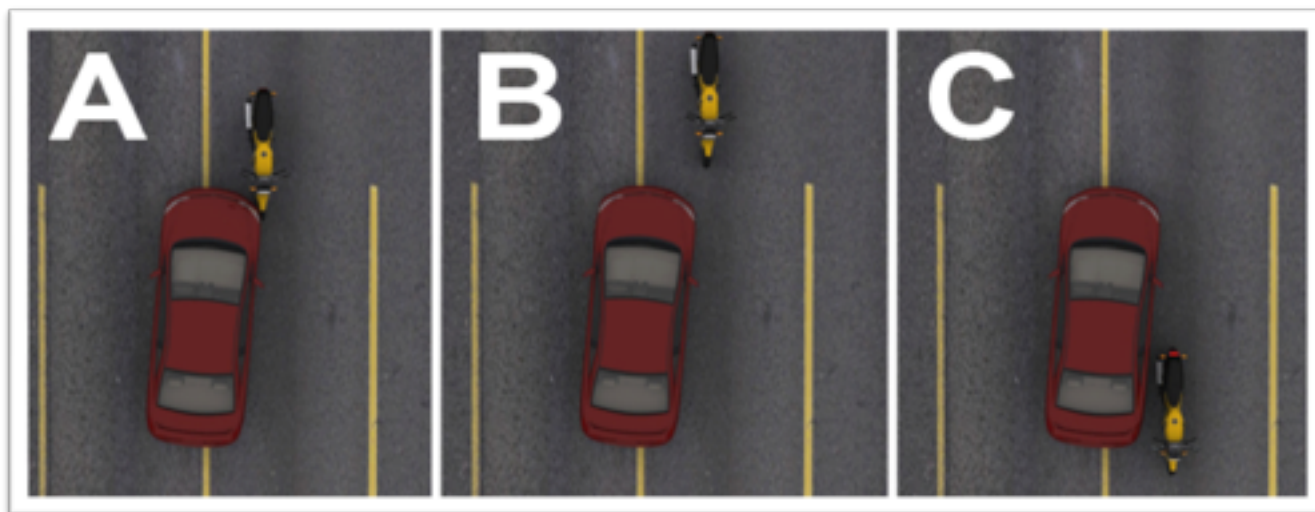
"What if?" Scenarios

Another benefit of forensic animations is that different scenarios can be considered since one can easily "experiment" with varying facts and assumptions. By going this extra mile, you can look at what other things may have happened and eliminate scenarios that could not have occurred. It is a question of preparedness that all too often gets overlooked due to any number of reasons.

Reviewing and analyzing a visual recreation means an effective and less time-consuming way to understand the arguments from both sides of a case. The animations that are prepared may present the most likely or unlikely scenarios. These can be provided to opposing counsel during mediation in order to present the flaws in their case or to highlight the strengths in one's own case. This ability to have a "window" into the other side's positions also means that one can better prepare specific questions, counter points and arguments for the opposing counsel.

A typical example that is often used with vehicle accidents is to run several scenarios with the vehicles traveling at different speeds. Let's assume that a car has crossed over the center line of a roadway and has caused a severe accident with a motorcyclist. Referencing **Figure 1**, the first image "A" shows the accident as it happened based on the

Figure 1.



expert witness report. The second image “B” shows the relative positions of the vehicles had the motorcycle been traveling at a slightly slower speed. Image “C” shows the relative positions of the vehicles had the motorcyclist been traveling at a slightly faster speed. This illustrates that scenario “C” is a potentially less dangerous situation than “B” where the driver of the motorcycle is almost struck head on.

Therefore, a forensic animation can show the likely cause and effect that an increase or decrease in speed, position or timing may have had on the outcome of an accident. Regardless of the situation, looking at the possible and not so possible scenarios that can be run with a forensic animation means that other questions and issues come to light that may not have been as obvious (or as meaningful) in a written report alone.

Both the expert witness and attorney should take advantage of the ability to test different hypotheses by collaborating closely with a forensic animator. The discussion that takes place between all parties and the clear visuals that are created help to ensure accuracy and alignment with an attorney's case. Then, when presented in court, jurors are more likely to be persuaded by a case with clear arguments and strong counterarguments.

In the end, the process of analyzing and presenting a forensic animation means an attorney is better prepared to face the different scenarios which may arise in court. The visual check that forensic animations provide along with the detailed time-distance analysis is where the true value comes out. It is important to always keep the true target audience in mind and the jury is not the first audience that needs to be persuaded.

Eugene Liscio, P. Eng. is the President of AI2-3D Animations based near Toronto, Ontario (Canada). Eugene is a registered engineer in the province of Ontario and actively promotes the use of forensic virtual models, animations, photogrammetry and other visual solutions for the courtroom. He has written several articles on forensic visual technology and has recently launched a forum with articles and informative resources to assist clients in understanding and making informed choices. For further information, please e-mail Eugene at eliscio@ai2-3d.com, or visit the AI2 website at www.ai2-3d.com.



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We asked three experienced trial consultants to respond to Eugene Liscio's article on the lesser known benefits of forensic animation. On the following pages, Jason Barnes, David Fish and Kacy Miller offer their reactions to this article.

Reaction to Eugene Liscio Article by Jason Barnes:

Jason Barnes is a graphic designer and trial consultant based in Dallas, Texas who has been practicing visual advocacy since 1990 and has worked in venues across the country specializing in intellectual property and complex business litigation cases. You can read more about Mr. Barnes at his webpage [<http://www.barnesandroberts.com>].

I agree with Mr. Liscio on what I understood as his main argument: Animations are important tools in the development of case theory and should be initiated early in the case for maximum benefit.

To the extent that Mr. Liscio advises the use of animation as an exploratory tool for ferreting out the "true" facts, my experience would tend to support this idea. After we prepare an animation from the case data and expert reports, it is not unusual for a client to look with surprise as the computer simulation tells a story different from the one that has been playing in her mind's eye for many months. After all, the animation is the first, and maybe only, easily understood synthesis of the case data that will be prepared. This surprised reaction exposes two ideas to us.

First, people construct differing - and even contradictory - visualizations of the same facts. If there are conflicting ideas among the attorney, the expert and the animator, there will certainly be conflicting ideas within the pool of jurors. Secondly, as a check on this phenomenon, it is important to continually reevaluate the data and our understanding of the data to arrive at a conclusion most consistent with most facts. Mr. Liscio wisely instructs us to explore alternate possible scenarios (see Figure 1) to establish our own theory and prepare us to refute our opponents' theory.

Forcing ourselves to look at several possibilities provides us with a more complete understanding of how the facts best fit together in support of our case. Viewing the facts from the viewpoint of our opponents will expose both the weaknesses and the strengths of our positions. We can then make adjustments to highlight our strengths, minimize our weaknesses and become mentally prepared to make the adjustments which will become necessary during trial. All of this takes time, money and commitment from everyone on the team.

I would suggest, however, that the opposing attorneys and experts are not the "true target audience." Even in cases where animations are prepared for presentation at mediation, my experience suggests that the expert and opposing attorney(s) and expert(s) will rarely be swayed no matter how good the work may be. They are trained and paid to take positions and defend them. There are two players, though, that can be swayed: the mediator and the business representative. It may even be that only the mediator is shown the animations so that we don't expose too much of our case to our opponents.

How best to motivate these two players is not the subject of the article nor this response, but, in my opinion, they are the first "judge" and "jury" to be presented with the case. Like a judge, the role of mediator is fulfilled with dispassionate objectivity. On the other hand, the business representative bears resemblance to a juror, basing decisions on a strange brew of objective analysis and emotional considerations.

Despite this minor disagreement, Mr. Liscio is correct in his assertion that there is much value to be found in the process of producing a forensic animation even beyond the final product. I encourage everyone considering such a project to follow his guidance and engage in the exploratory process he outlines.

Kacy Miller responds to Eugene Liscio

Kacy Miller, M.Ed. is the president of CourtroomLogic Consulting, a full-service trial sciences firm located in Dallas, Texas (www.CourtroomLogic.com). Areas of expertise include pretrial research, theme development, witness preparation, graphic development and all aspects related to jury selection.

While reviewing Eugene Liscio’s article “The Lesser Known Benefits of Forensic Animations”, I found myself agreeing with much of what he had to say. Mr. Liscio is spot on when he touts the potential impact of an animation, and he is also correct when he states that there are a number of advantages to creating animations during various stages of litigation. Animations are not just for trial anymore.

The obvious benefit is that animations increase audience attention, as well as overall retention. When used in the courtroom in front of a jury, the power to persuade is multiplied exponentially. Sometimes, our goal is to persuade a different audience: opposing counsel, the Judge, mediator, arbitration panel, or even the client or insurer. When computer animations are developed before trial, and become available tools for mediation, hearings or pre-trial research, the animations themselves become not only a tool for persuasion, but also a tool for learning and refining case strategy.

Walk in my shoes.

In many cases, one of the more challenging aspects is convincing the audience to step into the shoes of a particular person or witness and to view the world from his perspective. Too often, we focus only on the jury; however, Judges, clients and even mediators benefit from gaining a new perspective to the facts. Computer animations can be extremely powerful tools in forging an emotional connection between the audience and a key witness.

For example, in a case involving a middle-of-the-night SWAT team home invasion and subsequent death of an unarmed resident, an animation was created to help put the audience in the shoes of a key SWAT team member. The animation focused the fact-finder on *that particular* officer’s point of view *at the time of the invasion*, rather than on an omniscient point of view years after the fact. By creating an animation based on the evidence, and the details of the scene (floor plan, lighting, timing of events, etc), the visual often provides an emotional hook for the fact-finder, as well as an alternative explanation for what events transpired.

Creating animations that force the viewer to “walk in the shoes” of another can be very helpful in formulating case strategy, influencing potential settlement value, and ultimately, persuading jurors. These also lend themselves nicely to civil litigation involving transportation-related accidents (plane, train, bus, truck, etc), refinery accidents, or even some personal injury cases.

I have superhuman powers!

While animations are often used in accident reconstruction, they are extremely beneficial in cases where jurors need to see things they would not otherwise be able to see. Animations allow the audience—for a brief period of time—to have superhuman powers. They can fly, they can see in the dark, they can swim under water, they can crawl through pipes thousands of feet below the surface, and they can even travel inside the human body.

In a medical malpractice case, a computer animation can visually take the audience inside the human body, and in doing so, emphasize why events transpired the way they did, or provide alternative causation theories. Animations can also be very helpful in matters involving construction, oil and gas drilling, refinery operations and/or manufacturing methods. Hearing a fact or expert witness explain “how it works” is oh-so-much better when coupled with an animation.

This thingamajig does what?

In my not-so-humble opinion, every patent litigator in the country should strongly consider utilizing computer animations in their practice. When a patent dispute involves a process, a tool or even a software program, a computer animation can help educate the audience—most notably, the Judge—about what the patent does (or doesn't do). Combined with the claim language, these animations can be very beneficial when presented to the court as a technology tutorial before the Markman Hearing. After all, if the Judge embraces your version of the patent, you are way ahead of the game long before the jury ever enters the picture.

Maintain control.

Another key advantage to utilizing computer animations is that the final animation is just that—final. If prepared in a timely fashion and with great care, the actual animation will provide counsel with a valuable asset during presentations: control and consistency. While the user can rewind, fast-forward and even pause an animation, the information contained within the visual is the same every single time, thus minimizing potential error or omission.

The power of brainstorming.

While many clients are hesitant to incur the expense of creating an animation unless the case is absolutely, positively going to trial, there is much to gain from simply participating in the early stages of the creation process, as mentioned by Mr. Liscio.

When I use animations in my trial consulting practice, we always work directly with the sponsoring witness to develop specific goals and a detailed storyboard. Long before the animators work their magic and begin rendering 2D or 3D computer images, we all work together to develop a series of disgustingly detailed, pencil-to-paper sketches that capture the essence of what we ultimately want to accomplish.

This process in and of itself is undeniably one of the most helpful aspects of case development. The team is forced to evaluate the issues from all angles, and it never fails that new issues come to light and old issues are resolved. If the process is begun during the early stages of discovery, or before experts have written their reports, positions can be carefully evaluated, and if necessary, modified accordingly.

Brainstorming, setting goals and storyboarding does not necessarily mean that a bona fide computer animation has to be rendered. In fact, sometimes, after going through the initial stages the team decides against the animation, or decides to take things in a different direction. It's a learning process, and an amazingly beneficial one to boot.

I am a huge fan of computer animations, but make no mistake—not all animations are created equal. Whether you are using an animation in mediation, a hearing, arbitration or trial, be sure it passes muster. The last thing you want is to have invested hours and hours brainstorming, storyboarding and rendering a computer animation only to have the court dismiss the animation as argumentative or in some way prejudicial.

And finally, a few additional tips:

1. Create a budget and work with your team to stay within that budget. Not all animations need to be dog-and-pony shows. Sometimes, the simplest renderings are the most powerful.
2. Use your time (and money) wisely: identify the goal of the animation and then spend as much time as you need storyboarding the concepts. This will greatly minimize the need for last minute (and often costly) modifications to the rendered images.
3. Always develop an animation with the sponsoring witness(es). Do not create your version of the truth only to learn later than your witness cannot testify to it.
4. Keep the animation factual, demonstrative and within the confines of the facts and evidence. If the animation is too speculative or prejudicial, it may not be admissible. Be fair.
5. Always keep the jury in mind. While the initial audience may not involve the jury, if settlement fails, the jury will become relevant. By keeping the jury in mind as you develop the animation, the need for major modifications down the road will likely be minimized. Why reinvent the wheel when a simple tire rotation will do the trick?

Looking for a consultant?

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David Fish responds to Eugene Liscio

David Fish is the President of Trial Tools, a Chicago area Trial Consultancy experienced in the development of case strategies and demonstrative evidence. To learn more, please visit www.trial-tools.com.

Courtroom animations are like country music songs – some of ‘em are good, some ain’t.

I accept and endorse most of Liscio’s points about the effectiveness of animations. Animations, however, may still be an inappropriate tool if their use does not strictly adhere to trial strategies.

Though animations may be persuasive, memorable and best way to teach jurors or mediators the facts of the case, our experience indicates that the main risk in the use of animations is the placement of too much emphasis where it does not belong. We believe it is critical to prioritize the message and stay focused on the determinative issues.

More important than a clear analysis of the target audience (a “benefit” that is not linked singularly to the use of animation) is the careful choice, prioritization and management of the emphasis placed on the issues to be presented during a trial by the team.

A case that includes disputes about the physical environment may benefit from the creation of a demonstrative model or animation to clarify details (winning some battles) but also weaken the case by deemphasizing or distracting attention from more important issues such as conditions or responsibilities of the parties (risk of losing the war.)

Trial Tools has been involved in cases full of impactful and memorable distractions.

While we are strong advocates of the use of animation as a tool that can result in clear and lasting communications, we respond to Liscio’s article with the suggestion that advocates and consultants use the power of courtroom animations with laser precision to accomplish only the most important messaging as defined by trial strategy.



Happy New Year!

For *The Jury Expert*, it's especially good to turn the calendar year. In 2008, *TJE* went digital. We debuted in May, 2008 on the web in the form of downloadable PDF files. Now, especially for 2009, you can read *The Jury Expert* entirely on-line. You can still download and forward and print--everything you could do before. But now, you can read articles on-line in addition to downloading AND you can easily comment on what you're reading.

When we revamped this publication to be entirely on the web, our hope was to have your comments on articles published along-side the articles so that a dialogue could develop between litigators, consultants, academics, and other subscribers that would inform, challenge and stimulate us all. But first, we had to see if you liked where the [American Society of Trial Consultants](#) was going with this publication. (And you like us, you really like us!)

The Jury Expert is truly unique in legal publications--both in content and in our now interactive website. We owe a tremendous debt of gratitude to our web designer/developer, [Marc Lazo](#) who took our original ideas and made them into a reality on the web. Now, much like *TJE* articles strive to turn research and theory into practice, Marc and his associates have refined and expanded the website for *The Jury Expert* from our non-technical dreams to a reality meant to work for you with an intuitive ease. We also want to thank ASTC's [David Fish](#) for designing the sample ads you see throughout the print version and on the web. We'll start advertising in *The Jury Expert* this year to help ASTC defray costs of the publication.

So. Look around. Speak up! Comment. Interact. Tell us what you like and don't like. Even though it goes without saying--keep your comments professional and courteous even when/if you disagree. Happy 2009. Read on. Write in. And keep requesting article topics (we're hitting another requested topic this issue).

-- [Rita R. Handrich, PhD](#)



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