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*561 THE SNOOP DOGGY DOGG TRIAL: A LOOK AT HOW COMPUTER ANIMATION WILL IMPACT LITIGATION IN THE NEXT CENTURY

Carlo D'Angelo [FNa1]

THE RECENT USE of computer animation in trials has spurred some interesting debate. [FN1] Computer animation provides attorneys with a powerful evidentiary tool that has profoundly impacted the litigation of both civil [FN2] and criminal trials. [FN3] The use of computer technology in trials has also proven to be an effective means of presenting complex evidence to jurors. [FN4] This is especially true "[i]n an age where the average attention span is reduced to a sound bite." [FN5] Computer animation has also markedly influenced the way lawyers approach litigation, [FN6] and courts are presently facing new evidentiary issues regarding the admissibility of this powerful illustrative tool. [FN7]

***562** This Article examines numerous ways in which computer animation will affect litigation in the next century. Although this is a fairly novel area of trial practice, there are a handful of judges and scholars who have addressed both the admissibility of computer animation and its impact upon litigation. Part I gives an overview of the use of computer animation in the courtroom. Part II provides a recent illustration of how computer animation can be used in the courtroom to dramatically affect the outcome of a case. Part III then discusses the evidentiary issues that arise when lawyers seek to admit computer animation evidence at trial. Part IV analyzes how computer animation evidence can impact jurors' perceptions of a case. Part V discusses some of the possible constitutional problems that might arise when the government uses computer animation evidence during the trial of a criminal defendant. Finally, Part VI reviews procedural safeguards that can help prevent abuse of animation evidence.

I. An Overview of Computer Animation

As early as the 1970s, legal practitioners and scholars anticipated the application of computer technology to trial litigation. [FN8] Such technology evolved slowly, however, due to the limited capabilities and impracticality of early computers. [FN9] Simple graphic animation could only be generated by multi-million dollar computer systems that, because of their enormous size, would barely fit into most courtrooms. [FN10] With the advent of smaller, more efficient hardware, came increased potential for courtroom presentation. [FN11] It was not until the 1980s, however--when "general purpose" animation software began to hit the marketplace--that computers started to surface in courtrooms. [FN12] Since then, lawyers gradually have begun to incorporate computer animation into both civil and criminal trials. [FN13] Although presently fewer than one percent of lawyers

use computer animation in trials, the *563 continued drop in production costs likely will result in increased use in the next century. [FN14]

The production of computer animation is a costly and involved process. Computer animation is currently available in two forms: two-dimensional ("2-D") and three-dimensional ("3-D"). [FN15] In order to make 2-D images come to life, a cartoon artist must first draw each scene of action onto thin clear sheets of plastic, known as "cels." [FN16] Next, the cels must be photographed in rapid succession. [FN17] The artist must also manually create the illusion of three dimensions. [FN18] 2-D animation is best suited for simple moving charts and graphs. [FN19]

3-D animation, on the other hand, is often the more useful tool for the courtroom. [FN20] Animators using 3-D can re-create an incident from any viewpoint, and can change color, lighting, and contrast. [FN21] This flexibility allows counsel to present a more vivid and effective presentation. Animators re-create an event by entering three-dimensional mathematical representations into a computer. [FN22] The basic steps used to prepare 3-D computer animation for use in litigation are as follows:

> 1) The forensic animator, attorney and expert witness must determine the requirements of the animation . . . . 2) The animator and the expert gather the data on which to base the animation. 3) The animator processes data, if necessary, for incorporation into the animation. 4) The animator creates all the additional parts of the scene, including objects, surfaces, people, lights and cameras, and any scripts or control programs to direct animation. 5) The animator prepares one or more preliminary proof version(s) of the animation. 6) The animator, expert, attorney and any other necessary witnesses review the proof version(s) and grant approval or suggest changes. 7) The animator incorporates any necessary changes and secures final approval from the expert, attorney and any other necessary witnesses. 8) The animator prepares the final, finished version(s) of the animation and delivers it on the desired media. 9) The expert, attorney and any other witnesses review the final animation sequences in preparation for court. [FN23]

*564 Collecting data is one of the most important steps in producing computer animation exhibits. [FN24] All pertinent data such as "drawings, sketches and prints, police or accident reports, depositions of eyewitnesses, calculations and analyses by experts, [and] photographs," must be thoroughly collected in order to create the most effective, and accurate, courtroom presentation possible. [FN25] Once all pertinent data has been collected, it is helpful to sketch out a storyboard or concept of what the animation should depict. [FN26] After creating the storyboard, the animator must enter the information into the computer and create a working model. [FN27] The final working model can then be transferred to the desired media format--typically videotape. [FN28] The finished product is then ready for courtroom presentation.

II. Snoop Doggy Dogg on Trial: An Illustration of Computer Animation in the Courtroom

The recent criminal trial of Calvin Broadus, the "gangsta rapper" otherwise known as Snoop Doggy Dogg ("Snoop"), illustrates how controversial it can be to use computer animation in the courtroom. The highly publicized trial began on November 27, 1995 in a Los Angeles criminal courtroom. [FN29] Prosecutors claimed that on August 25, 1993, Snoop and his former bodyguard, McKinley Lee ("Lee"), had a dispute outside the rapper's Los Angeles apartment with a rival gang member, Philip Woldemariam ("Woldemariam"), which ended in bloodshed. [FN30] The prosecution alleged that after the heated exchange, Snoop and Lee "followed, taunted and gunned down" Woldemariam at a nearby park. [FN31] Deputy District Attorney Ed Nison told jurors during his opening remarks that Lee, who was seated in the passenger's seat of Snoop's Jeep, motioned for the victim to

approach and then reached for his gun and shot Woldemariam in the back twice as he attempted to flee. [FN32]

Conversely, the defense argued that the shooting was an act of self defense by Snoop's bodyguard. [FN33] Defense attorney Donald Re told jurors ***565** that "Lee shot Woldemariam because he pulled a handgun from his waistband and possibly shot it at the vehicle." [FN34] According to the defense, Los Angeles police officers "closed their eyes to the truth" by failing to further investigate the statements of two of the victim's friends who initially claimed that there was no weapon, but then later "admitted that they had taken a weapon from Woldemariam as he lay dying in a carport." [FN35]

The critical question left for the jury to answer at trial was whether the victim was shot in the back or in the side. If the prosecution could establish that the victim was shot in the lower left back as he attempted to run away from the Jeep, then the entry wounds would be consistent with murder. [FN36] If, however, the defense could establish that the shots entered Woldemariam's left side "in the split-second after he reached for his gun and then turned," the entry wounds would be consistent with the theory of self-defense. [FN37] Essential to the defense's case was a re-creation of the crime scene that supported the defense's theory of the shooting.

A. Use of Computer-Animated Video

Backed by virtually unlimited funding from Snoop's record label, the defense was able to utilize the most sophisticated computer technology available in presenting its case. [FN38] Complex evidence, which normally would require numerous expert witnesses and hours of testimony, was easily presented to the jury in the form of a brief 3-D computer animated video. [FN39] The defense commissioned computer animators to produce a video-reconstruction of the shooting that was consistent with both eye witness statements and the evidence collected from the crime scene. [FN40]

The first portion of the video depicted a series of overhead cross-sections of the victim's body which illustrated the exact angle of both shots. [FN41] The video's smooth motion and 3-D graphics allowed the jury to see, from all possible angles, the exact entry and exit points of both wounds sustained ***566** by the victim. [FN42] Additionally, through the use of slow motion and real-time images, the defense was able to show how the angle and force of the first shot made the victim's body turn slightly, causing the second shot to enter his back. [FN43] The video also re-created the scene of the shooting and illustrated: (1) the height of the Jeep's passenger window; (2) the victim's height in relation to the Jeep; and (3) the exact distance and angle of the shots as they traveled from the Jeep toward the victim. [FN44] The defense's re-creation effectively showed jurors that the victim must have been standing near the Jeep at the time of the shooting because of the height, angle, and distance of the shots. [FN45] The video supported this additional self-defense theory by illustrating that the further the victim's body moved away from the Jeep, the less likely it appeared that the shots could have come from the Jeep's passenger window. [FN46]

B. Use of Non-Animated Computer Software

In addition to computer animation, the defense utilized a sophisticated computer software program, Gravity/Verdict, [FN47] to store hundreds of pages of depositions, police reports, and exhibits. [FN48] The program allowed the defense to download hundreds of pages of pre-trial depositions and exhibits into laptop computers--making them easily accessible at trial. [FN49] The defense was able to incorporate this high-tech evidentiary tool into its case because the courtroom used in the Snoop trial was one of a handful in the nation that is

equipped with real-time [FN50] court reporting. [FN51] This allowed the defense team to instantaneously show the jury, via large screen television, all of the depositions, exhibits, and live testimony presented during the trial. [FN52] The defense was also able to immediately access witnesses' prior inconsistent statements and display those statements for impeachment purposes during cross-examination at trial. [FN53]

***567** C. Result

By combining masterful trial work with sophisticated computer technology, the Snoop defense team effectively presented its case to the jury. As a result, the jury acquitted both defendants on the charges of first- and second-degree murder, and it deadlocked on the lesser offense of voluntary manslaughter. [FN54]

III. Evidentiary Issues and Admissibility of Computer Animation

A. Evidentiary Rules Implicated

1. Foundation: Rule 901

As with any demonstrative evidence, attorneys must lay a proper foundation before a judge will admit computer animation evidence. The primary method of introducing such exhibits is through the authentication and identification requirements of Federal Rule of Evidence ("Rule") 901. [FN55] The general provision of Rule 901(a) states: "The requirement of authentication or identification as a condition precedent to admissibility is satisfied by evidence sufficient to support a finding that the matter in question is what its proponent claims." [FN56] The primary purpose of authentication or identification is to create an evidentiary bridge between the exhibit being offered and the specific facts of the case. [FN57] This bridge is successfully created by laying the proper foundation. [FN58] In laying the proper foundation, the proponent is not required to present conclusive evidence of the exhibit's authenticity. [FN59] The offering party is merely required to offer sufficient proof to ***568** allow the issue of authenticity to reach the jury. [FN60] Before the jury can decide this issue, however, the judge must determine the admissibility of the evidence. [FN61]

The authentication of computer-generated animation is addressed by Rule 901(b)(9). [FN62] Under Rule 901(b)(9), the offering party is required to present a description of the "process or system used to produce a result" as well as establish that it "produces an accurate result." [FN63] Initially, the offering party may authenticate the exhibit by showing the reliability and accuracy of the computer and software. [FN64] Secondly, the offering party must qualify the reliability of the inputted data used to create the animation. [FN65] This is the most important--and potentially the most troubling--stage of authentication because the offering party must provide proof that each piece of data was input correctly and accurately. [FN66] Finally, the offering party must establish the reliability and accuracy of the end-product. [FN67] When dealing with sophisticated output such as computer animation, it is often necessary for a qualified expert to testify as to its reliability and accuracy. [FN68] In addition, because of the complexity often associated with computer-generated exhibits, courts may require prompt pretrial disclosure in order to assure that opposing counsel has enough time to evaluate and rebut the exhibit's authenticity. [FN69]

***569** 2. Relevancy: Rule 402

In addition to establishing the authenticity of computer animation, the offering party must also establish its relevancy. [FN70] This is critically important since, if the judge finds the evidence irrelevant, she will not admit the evidence--even as a demonstrative aid. [FN71] In order to be deemed relevant, the offering party must establish that the exhibit "has a tendency to make the existence of a fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." [FN72] The actual burden, however, is not to establish that the offered evidence will prove a fact at issue, but merely that the evidence has some probative value. [FN73] This burden can be met by simply offering some "relation between an item of evidence and a matter properly provable in the case." [FN74] A lawyer might meet this standard by providing some link between the computer animated exhibit and the manner in which it will assist the jury evaluate one or more of the issues at trial.

3. Prejudice: Rule 403

Even if the proffered evidence is deemed relevant, it might nevertheless be excluded on grounds of prejudice. [FN75] This exclusion of otherwise relevant evidence is premised upon the notion that "certain relevant evidence should not be admitted to the trier of fact where the admission would result in an adverse effect upon the effectiveness or integrity of the fact finding process." [FN76] The test applied by trial courts to determine the admissibility of prejudicial evidence hinges upon "whether the adverse effect substantially outweighs the probative value of the evidence." [FN77] The authority to admit or deny such evidence rests wholly with the trial judge, and the judge's decision may only be overturned by appellate courts upon a showing of abuse of discretion. [FN78]

A court may also exclude a computer animated exhibit if the opposing party establishes that the evidence, if admitted, might result in an "improper"***570** or "unusually irrational" basis for a jury decision. [FN79] A court might also exclude the evidence if it is likely to confuse the issues or mislead the jury. [FN80] Thus, the trial judge has the discretion to exclude a relevant piece of evidence if it "would require the trier of fact to engage in intricate, extraordinary or impossible mental gymnastics in order to comprehend the import of the evidence or to assess its weight." [FN81] Finally, a judge may exclude evidence if it appears that the jury will "ascribe excessive, unwarranted weight" to it. [FN82]

A highly persuasive computer animated exhibit certainly could confuse or mislead a jury. After all, the powerful demonstrative images portrayed in a computer animated piece might influence jurors to believe that those images are an actual account of the event and not merely one party's interpretation of the facts. A trial judge's cautionary instructions may not be sufficient to offset jurors' tendency to believe what they see, even when it is contradicted by the real evidence offered at trial.

However, before a judge will exclude such evidence, the opposing party must prove that the danger of confusion will substantially outweigh the exhibit's probative value. [FN83] Consequently, a computer animated exhibit that is both authentic and relevant is unlikely to be excluded on a mere assertion of possible confusion. [FN84]

4. Hearsay: Rule 801

In addition to the above requirements for admission, a computer animation exhibit must also pass the requirements of the hearsay rule, Rule 801. [FN85] Typically, the opposing party will make a hearsay objection on the grounds that "the declarant, probably some type of computer expert, has entered data into the computer and, through the computer, has created an assertion about the truth of a matter at issue." [FN86] The testimony is objectionable as hearsay because the computer animation is an out-of-court statement ***571** by a declarant offered into evidence for the truth of the matter asserted. [FN87] In order to overcome this objection, the offering party must demonstrate that the proffered evidence is admissible under one of the many hearsay exceptions listed in Rule 803. [FN88] Because computer animation does not fall under any of the specific exceptions to the hearsay rule, the proponent must argue admissibility under the catchall exceptions of Rule 807 (formerly Rules 803(24) and 804(b)(5)). [FN89]

Under this exception, the offering party must satisfy five requirements before the hearsay evidence may be admitted. The primary requirement is that the declarant's statements possess "circumstantial guarantees of trustworthiness" that are "equivalent" to one of the enumerated hearsay exceptions. [FN90] In assessing the trustworthiness of a computer animated exhibit, the trial court will likely look favorably upon the fact that the declarant is available to testify and is subject to cross-examination. [FN91] Second, the court must determine whether the statements are being "offered as evidence of a material fact." [FN92] The offering party can satisfy this requirement simply by re-establishing the exhibit's relevancy to some material issue of the trial. [FN93] Third, the trial judge must determine that the evidence is "more probative on the point for which it is offered than any other evidence which the proponent can procure through reasonable efforts." [FN94] The party offering a computer animated exhibit could satisfy this requirement by showing that the only other means of presenting the evidence would require hours of testimony and ultimately would not be as effective as the animation exhibit. Fourth, the offering party must show that admission of the hearsay evidence does not run contrary to the "general purposes of these rules and the interests of justice." [FN95] This is, in essence, a fairness argument that the offering party must make to the court. [FN96] Finally, the proponent of the exhibit must give adequate notice to opposing counsel "sufficiently in advance of the trial or hearing to provide the adverse party with a fair opportunity to prepare." [FN97] This last element is typically not an issue if the proponent notifies opposing counsel at the pretrial conference and provides him with "'the ***572** particulars'" of the exhibit, "'including the name and address of the declarant.'" [FN98] Failure to provide opposing counsel with timely notice of intent to rely upon a computer animation can result in the computer exhibit being excluded from evidence by way of a pretrial motion in limine. [FN99]

B. Application of Evidentiary Rules

As Part III.A demonstrates, the admissibility of computer animation raises several evidentiary issues for courts to address. While use of computer animation in trials is still relatively rare, a handful of cases have addressed this new phenomenon and the evidentiary issues it raises.

1. Foundation: Bray v. Bi-State Development Corp. [FN100]

In Bray, a Missouri plaintiff claimed to have slipped and fallen in a local parking garage because of poor lighting. [FN101] During the pretrial proceedings, the defendant moved to have admitted into evidence a computer-generated chart which illustrated, through color light intensity levels, the section of the garage where the plaintiff was allegedly injured. [FN102] The trial court admitted the exhibit into evidence. [FN103] After the trial, the plaintiff appealed the trial court's ruling on the ground that the defendant failed to lay the proper founda-

tion. [FN104]

On appeal, the Missouri Court of Appeals observed that foundational issues were typically left to the discretion of the trial judge. [FN105] The court noted, however, that Missouri case law had not established the foundational requirements for admitting computer animation evidence. [FN106] In an effort to clarify the evidentiary requirements for admitting computer animation exhibits, the court surveyed relevant cases from other jurisdictions that addressed the issue. [FN107]

***573** The Bray court relied partly on the guidelines announced in Commercial Union Insurance Co. v. Boston Edison Co. [FN108] In Commercial Union, the Massachusetts Supreme Court held that before a computer animation exhibit may be admitted into evidence, counsel must establish the proper foundation by showing that: "(1) the computer is functioning properly; (2) the input and underlying equations are sufficiently complete and accurate (and disclosed to the opposing party, so that they may challenge them); and (3) the program is generally accepted by the appropriate community of scientists." [FN109]

The Bray court noted that the first guideline would be presumptively established unless opposing counsel offered a specific challenge to the functional capabilities of the computer. [FN110] With regard to the second guideline, the court reasoned that the accuracy of the input data and equations used could be established if the software used is relied upon by the relevant scientific community. [FN111] Finally, the Bray court observed that in order to satisfy the third guideline, the computer program must pass muster under the standard established in Frye v. United States. [FN112] Frye held that scientific or experimental evidence may be admitted only after its proponent establishes that the technique is generally accepted in the relevant scientific community. [FN113]

The most common format for generating computer animation is the Auto-CAD program. [FN114] The Auto-CAD program could be introduced under the Frye standard simply by providing expert testimony that such a program has been employed in other cases and that it is generally accepted in the relevant scientific community. [FN115]

The Bray court also relied on Deffinbaugh v. Ohio Turnpike Commission. [FN116] In Deffinbaugh, the Ohio Court of Appeals held that a sufficient foundation was established if the expert witness provided: (1) the name of the computer program utilized; (2) testimony that the program provided an accurate depiction; and (3) a reliable estimate which was based upon known facts. [FN117] Bray cited Deffinbaugh's standard, as well as other authority ***574** , [FN118] for its conclusion that a consensus is developing that gives trial courts "sufficient parameters to exercise [their] discretion in this area without the need for a precise formula." [FN119] Based largely on this reasoning, Bray affirmed the trial court's decision to admit the computer-generated evidence. [FN120]

2. Computer Animation as Demonstrative Evidence: Pierce v. State [FN121]

In Pierce, a Florida defendant was charged with vehicular homicide and leaving the scene of an accident. [FN122] On the evening of June 23, 1992, the defendant's pickup truck struck three children who were walking home. [FN123] All three children sustained serious injuries from the accident and one child later died from those injuries. [FN124] Due to the cooperation of several eyewitnesses, the police eventually tracked down the defendant's vehicle and arrested him. [FN125] Before trial, the State filed a notice of intent to offer a computer generated animation at trial. [FN126] At a pre-trial hearing, the State introduced the testimony of three witnesses who were experts in accident reconstruction. [FN127]

The first expert to testify at the hearing, Detective Bjorndale-Hull, laid the proper evidentiary foundation for both the computer equipment used and the data entered. [FN128] The State's second expert witness, Detective Babcock, testified that the proposed computer animation "fairly and accurately reflected his opinion of how the accident occurred." [FN129] Finally, the State introduced the testimony of Jack Suchocki, a computer animation expert, who testified about the process involved in producing computer animation. [FN130] He also testified that the "evidence utilized was of a type reasonably relied upon by experts in the field of forensic animation." [FN131]

***575** The State then offered the computer animation into evidence as a demonstrative exhibit to aid in its experts' testimony. [FN132] The trial judge admitted the evidence and noted that both the source data and the exhibit were "'reasonably trustworthy and reliable.'" [FN133] The trial judge also ruled that the exhibit was "'merely a device or means to express an expert's opinion,'" and thus not subject to the Frye test for experimental and scientific evidence. [FN134] The judge therefore admitted the animation for the "purpose of aiding the jurors in understanding the complex issues and illustrating the opinions of the expert witness," but not as substantive evidence. [FN135] The jury convicted the defendant, and he appealed on the ground that "the trial court abused its discretion in permitting the computer generated accident reconstruction animation to be shown to [the] jury as a demonstrative exhibit." [FN136]

The Florida District Court of Appeal affirmed the trial court's decision to admit the evidence. [FN137] The court reasoned that because the computer animation was offered merely as a demonstrative exhibit to aid in expert testimony--and not as substantive evidence--it did not unduly influence the jury's perception of the facts. [FN138] The court also observed that the opposing party had the opportunity to attack the credibility and accuracy of the exhibit through cross examination. [FN139] This, according to the court, was sufficient to alert the jury to the fact that any inaccuracies in the exhibit's generation would render the animation itself inaccurate. [FN140] The appellate court concluded that it was not an abuse of discretion for the trial judge to admit the computer animation into evidence because it met all the requirements necessary to admit demonstrative exhibits. [FN141]

***576** 3. The "Useful or Confusing" Standard: People v. McHugh [FN142]

In McHugh, a New York defendant attempted to introduce a computer animated re-enactment of his accident at his trial for vehicular manslaughter. [FN143] The defendant sought to introduce the exhibit to establish that he was "neither drunk nor speeding" at the time of the fatal accident and that his vehicle left the roadway due to poor weather conditions. [FN144] The prosecution moved for a pre-trial conference to evaluate the admissibility of such evidence. [FN145]

The defendant intended to call a witness at trial who was an expert in accident reconstruction and who had prepared a report outlining the production of the computer animated exhibit. [FN146] The Superior Court of Bronx County reviewed both the expert's report and the computer animated video and ruled that there would be no need for a pre-trial hearing on the issue. [FN147] The court noted that the computer animation was admissible so long as the defendant laid the proper foundation and qualified the expert's testimony. [FN148] In short, the court explained that when computer animation is useful courts should admit it, and when it is confusing courts should not admit it. [FN149]

IV. Computer Animation and Its Impact on Juror Perception

A. Judicially Created Standards

There is no clear standard to determine when computer animation evidence rises to the level of "confusing" the jury. While studies support the notion that jurors learn more by seeing evidence than by simply hearing it, [FN150] there is also a risk that, when dealing with computer animation, they may disregard what they hear and believe only what they see. The first priority of any good trial attorney is to communicate effectively his case to ***577** the trier of fact. Accordingly, the modern litigator should always look for exciting and dramatic ways to illustrate his point to the jury. [FN151] A good trial lawyer often must supplement his courtroom presence and oratory skills with the aid of flashy demonstrative exhibits in order to keep the jury's attention and communicate his point. [FN152] Accordingly, the temptation is strong to use computer animation as a means of reaching these goals. With the use of this tool, however, comes the danger that the jury may subconsciously view the computer exhibit--which is offered solely for demonstrative purposes--as the most conclusive and authoritative version of the facts presented at trial. [FN153]

Additionally, computer animation's increasing role in television and film media creates an almost "built-in credibility" in the minds of jurors who view it at trial. [FN154] The potential for prejudice lies in the fact that the animator has the power to manipulate the input data and create a simulation that distorts the actual events, thus misleading the jury. As the following section illustrates, the courts that have addressed the potential prejudice of computer animation evidence have endorsed a variety of standards for ruling on admissibility, resulting in an inconsistent body of case law.

1. The "Sufficiently Close" Test: Gladhill v. General Motors Corp. [FN155]

In an effort to limit the prejudicial effects discussed above, the Fourth Circuit, in Gladhill v. General Motors, established a requirement that, in order to be admissible, videotaped demonstration evidence must be "sufficiently close" to the event in question "to make the probative value of the demonstration outweigh its prejudicial effect." [FN156]

In Hinkle v. City of Clarksburg, [FN157] the Fourth Circuit revisited the question of how similar re-creation evidence must be to the event it purports to re-create. [FN158] In Hinkle, unlike in Gladhill, the videotape evidence had been computer animated. [FN159] Since the Fourth Circuit had not specifically applied the "sufficiently close" test to computer-animated videotapes, ***578** the Hinkle court addressed the distinction between a "real-life recreation and one generated through computer animation." [FN160] The court explained in dicta that it saw no practical distinction between a real-life re-creation and one generated through computer animation, suggesting that the Gladhill test is applicable to computer generated evidence as well as to traditional videotape evidence. [FN161]

The Hinkle court lacked occasion to actually apply the Gladhill test because it found that the jury "fully understood this animation was designed merely to illustrate Appellees' version of the shooting." [FN162] However, the court's dicta suggests that the Fourth Circuit would apply Gladhill's "sufficiently close" test to computer animation evidence as well as to videotape.

2. The "Nearly Identical" Test: Sommervold v. Grevlos [FN163]

In Sommervold, the plaintiff and the defendant collided with each other while riding their bicycles down a

dark road. [FN164] In the ensuing negligence action, the defendant attempted to introduce a computer animated video that illustrated a reenactment of the accident from the perspectives of both the plaintiff and the defendant. [FN165] The trial judge excluded the evidence on the ground that it was more prejudicial than probative. [FN166] On appeal, the Supreme Court of South Dakota addressed the foundational requirements to admit a demonstrative exhibit. [FN167] The supreme court held that demonstrative evidence that purports to re-create an event must be "nearly identical" to the event in order to protect against undue prejudice. [FN168] The court reasoned that a computer generated re-creation is a powerful visual device that stands out in the jury's mind and is likely to outweigh even the spoken testimony of eye witnesses. [FN169]

3. A Higher Standard: Racz v. R.T. Merryman Trucking, Inc. [FN170]

In Racz, a federal district court explored possible prejudicial effects that computer animated evidence may have on a jury. [FN171] The plaintiff in Racz filed a motion to preclude the defendant's introduction of a computer ***579** animated accident reconstruction on the ground that it created a danger of undue prejudice. [FN172] Citing the adage, "seeing is believing," the court expressed its concern that "the jury may give undue weight to an animated reconstruction of [an] accident." [FN173] This risk of undue prejudice is increased ten-fold if the accident reconstructionist disregards any portion of an eye witness's testimony in his preparation of the computer exhibit. [FN174] The court cautioned that presenting manipulated data to the jury might make it all but impossible for the opposing party to counter the evidence through cross-examination. [FN175] This risk that computerized images might overshadow the oral testimony of eye witnesses makes it a potentially prejudicial tool. [FN176] Based on this reasoning, the Racz court held that computer animated exhibits should be admitted into evidence only if they are based upon an accurate and reliable collection of data and do not unduly prejudice the jury's impression of the facts in question. [FN177]

B. Litigation Concerns

One possible means of avoiding undue prejudice objections is to play the "devil's advocate" when preparing to use computer animated exhibits. [FN178] Counsel can overcome most admissibility problems by thoroughly reviewing the exhibits and anticipating potential foundational and relevancy objections. [FN179]

In addition to issues of admissibility, counsel should also be concerned with the credibility of the exhibit. By ensuring that the exhibit is as accurate as possible, the moving party can avoid falling into credibility gaps that might undermine the overall believability of his case. [FN180] If counsel goes to the trouble and expense of presenting a computer animated exhibit to the jury, he must ensure that the exhibit is accurate. [FN181]

Displaying the exhibit in a mock trial setting may help the attorney measure the strengths and weaknesses of the exhibit, thus ferreting out inaccuracies that might prove both embarrassing and damaging at trial. A mock trial can also help the attorney solidify how he discusses and presents the exhibit to the real jury. If, for example, counsel refers to the exhibit as a ***580** "cartoon," he risks offending prospective jurors' intelligence and undermining the exhibit's validity. [FN182] And, if counsel is opposing a large insurance company or corporation, he may want to avoid using a computer model that is so polished that it undermines the David versus Goliath image he might be trying to convey to the jury.

The use of computer animation also has a tendency to create an uneven playing field because it "may give the side with the most money a decisive--and thus unfair--advantage with juries." [FN183] The concern is that

the advancements in computer animation may be "'pricing people out of the system"' and denying justice to those who cannot afford to combat this high-tech tool. [FN184] It is true that an opposing party may cross-examine witnesses about the computer animation at trial. It is not at all clear, however, that a cross-examination will overcome the images etched in the jurors' minds.

V. The Possible Injustice of Using Computer Animation at Trial

A. The Constitutional Standard in Criminal Trials

The most dangerous abuse of computer animation is likely to occur in criminal trials, where liberty, and sometimes life, hang in the balance. The Sixth Amendment provides:

> In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the Assistance of Counsel for his defense. [FN185]

In Johnson v. Zerbst, [FN186] the United States Supreme Court acknowledged that in order to preserve justice for the indigent defendant, the constitutional safeguards of the Sixth Amendment must be observed. [FN187] Accordingly, the Court held that the government has a duty to provide indigent defendants with "able" representation if they cannot afford such. [FN188] In ***581** Betts v. Brady, [FN189] however, the Supreme Court held that the Sixth Amendment's guarantee of counsel is not one of the rights mandated by the Fourteenth Amendment. [FN190] This issue of whether indigent defendants were entitled to counsel in state criminal trials remained within the state's discretion until the Court's landmark opinion in Gideon v. Wainwright. [FN191] In Gideon, the Court recognized that the right to assistance of counsel is one of the essential rights which must be uniformly imposed upon the states via the Fourteenth Amendment. [FN192] Fundamental to this right is the requirement that counsel provide "effective assistance." [FN193] Tied closely to this requirement of "effective assistance" is the requirement that the indigent defendant have access to court appointed experts to aid in his defense. [FN194]

One question that the Supreme Court has not answered, however, is whether an indigent defendant in a criminal trial is entitled to computer animation as part of his defense. Although it is unlikely that courts would view computer animation as essential to the presentation of an effective defense, [FN195] there exists an inherent unfairness when the state is permitted to use such powerful evidence against a defendant who cannot afford to do the same.

B. Computer Animation in a Criminal Trial: People v. Hood [FN196]

In Hood, the defendant, James Hood, was accused of murdering a former employee, Bruce Beauchamp. [FN197] Hood had previously paid Beauchamp to murder Hood's wife, [FN198] and prosecutors contended that Hood murdered Beauchamp in order to cover up any evidence of the contract killing. [FN199] Hood's defense attorney argued that his client shot at Beauchamp in self-defense after an angry confrontation. [FN200]

***582** The prosecution sought to introduce a computer animated re-creation of the incident to support its the-

ory that Hood murdered Beauchamp. [FN201] At a pre-trial hearing, Judge Don A. Turner ruled that he would allow the prosecution to introduce the computer animated exhibit at trial. [FN202] In response, defense attorney Phillip Bourdette produced a computer animated exhibit to illustrate his client's self-defense theory. [FN203] According to Bourdette, "[he] had to do it once the judge indicated he was going to let [the prosecution] use it." [FN204] Hood's attorney was reluctant to use such evidence, but felt compelled to do so in order to combat the powerful images that the prosecution intended to show the jury. [FN205] Fortunately, Hood could afford the expense of both a private attorney and a computer animation expert. [FN206] But what if the facts were different? What if instead of being a wealthy real estate developer, Hood was an indigent defendant being represented by court appointed counsel? Would the court rule that under the Sixth Amendment he was entitled to a court-appointed computer animation expert or a computer animated exhibit?

According to the Supreme Court's holding in Ake v. Oklahoma, [FN207] "when a State brings its judicial power to bear on an indigent defendant in a criminal proceeding, it must take steps to assure that the defendant has a fair opportunity to present his defense." [FN208] Conversely, the Court has held that states are not required to provide indigent defendants with access to the same expert resources that a wealthy defendant could afford. [FN209] Such reasoning would certainly favor the denial of an indigent defendant's request for a court-appointed computer animation expert, especially considering the high costs of producing these exhibits.

Does this rationale comport with the constitutional requirements of the Equal Protection Clause? Can court-appointed counsel overcome the powerful effects of computer images and ensure his client a fair trial merely by cross-examining the state's expert witness? The answer to both questions is no. Without being afforded the opportunity to rebut the State's exhibit through either a court-appointed expert or a computer animated exhibit that reflects the defendant's theories, there is little that a public defender can do ***583** to level the playing field. This is especially true in light of the Supreme Court's reluctance to recognize such costly experts as being essential to a fair trial. In Ake, the Court held that the State was obligated to provide indigent defendants with "access to the raw materials integral to the building of an effective defense." [FN210] What remains unanswered is whether computer animation is or will be considered an "integral raw material."

The Court, in Ake, also held that indigent defendants are entitled to appointed experts to assist in preparing an insanity defense. [FN211] However, the Supreme Court declined to recognize that indigent defendants have a general right to expert assistance. [FN212] Instead, the Court set forth factors for courts to consider when determining whether such state-funded assistance is required: (1) whether the private interest [FN213] will be affected by the State providing the defendant with the expert assistance; (2) what governmental interest will be affected if the State provides the assistance; and (3) balancing the value of the assistance to the defendant's case against the risk of not providing the assistance. [FN214] It is not clear from the Court's opinion whether declining to provide an indigent defendant access to computer animation would create such a risk to the defendant's case.

The Court has long held that the Fourteenth Amendment does not require the state to create an absolutely level playing field between the defendant and the state, nor between an indigent defendant and wealthier defendants. [FN215] Moreover, a defendant must do more than assert that the requested assistance will be beneficial to his case before a court will find a deprivation of due process. [FN216] Given the high costs associated with computer animation, it is unlikely that courts will determine that due process requires that it be readily available to indigent defendants.

C. Civil Trials

Similar inequities may arise in civil suits. Litigants who bring contingency-based suits against insurance companies or large corporations may be unable to compete with the high-priced computer animated exhibits that ***584** their opponents are capable of utilizing. Unlike indigent defendants, however, there is no Sixth Amendment protection available to civil litigants who find themselves in these circumstances. Instead, these individuals must hope that a large enough firm will accept their case and agree to fund the production of a computer animated exhibit. If no firm is willing to undertake the substantial expense associated with a computer animated exhibit, the litigant is left with only one means of combating his opponent's computer animated evidence. The civil litigant, like the indigent defendant, will have to rely on evidentiary objections and the cross-examination skills of his attorney to combat these extremely persuasive exhibits.

VI. Procedural Safeguards Against Abuse of Computer Animation

While it is difficult to speculate with any degree of certainty how readily courts will embrace computer animated exhibits, it might be helpful to examine how courts have reacted to other technological advancements in courtroom presentation. Illustrative exhibits have long been a part of trial practice, and some demonstrative devices have become so common in courts that we take them for granted. The use of video tape players at trial is an example. The projection of images to a jury through a television monitor was surely a ground-breaking advancement in trial technique. Much like computer animation, video evidence had to confront issues of admissibility and relevance. After all, a videotaped re-creation of an accident scene has the same potential for prejudice and undue influence as does a computer animated reconstruction.

The same test that courts have fashioned for dealing with the admission of computer animated exhibits was used in the admission of video exhibits. In Kehm v. Procter & Gamble Manufacturing Co., [FN217] the Eighth Circuit held that in order to lay the proper foundation for admission of a demonstrative exhibit, counsel must make a showing of "substantial similarity" between the purported reenactment and the facts at issue. [FN218] In order to be admissible at trial, counsel must establish that the video accurately portrays the facts at issue. [FN219] Only the most minimal variance may be permitted. [FN220]

***585** Critics of video evidence raised many of the same concerns that are now being raised by opponents of computer animated evidence. [FN221] As here, the primary concern was that the powerful visual images conveyed to jurors by videotaped demonstrative exhibits were so "susceptible to distortion" that their reliability was questionable. [FN222] In order to avoid such possible prejudice, the admissibility of such exhibits has been strictly limited by the "substantial similarity" test. [FN223] An additional safeguard against abuse is to prevent video exhibits (much like computer animations) from being used as a replacement for live expert testimony. [FN224] The proponent of a demonstrative exhibit must remember that its primary purpose is to illustrate a witness's testimony. It should never be permitted as a substitute for such testimony.

Conclusion

Although the use of computer animation is still a relatively novel area of trial practice, it promises to have a substantial impact upon the way lawyers approach trial work in the next century. The powerful images produced by computer animation are sure to affect the way jurors perceive and understand evidence. Moreover, the decline in production costs will likely result in increased use of computer animation in modern courtrooms. What

remains unclear, however, is how courts will decide the numerous evidentiary and due process issues these exhibits raise. Given its highly persuasive tendencies, computer animation is likely to become the single most powerful evidentiary tool utilized by trial lawyers in the next century. As with the use of any powerful instrumentality, the courts must adapt and create procedures to protect against its abuse.

[FNa1]. Assistant Public Defender, Broward County Public Defender's Office. J.D., St. Thomas University School of Law, 1997; B.A., Florida Atlantic University, 1994.

[FN1]. See, e.g., Mark Hansen, A Failure of Analysis? Critics Blast Firm's Re-Creation of Menendez Shootings, ABA J., Oct. 1996, at 18 (reviewing the controversy surrounding the use of computer animation in the Menendez case). See generally Michael G. Karnavas & Alexander Jason, Courtroom Computer Animation and Simulation: Selling Your Case with High-Tech Persuasion, The Champion, Jan.-Feb. 1996, at 5 (discussing the potential effectiveness of computer animation at trial); David Weinberg, Animation in the Court: Scientific Evidence or Mickey Mouse?, Judges' J., Spring 1995, at 11 (explaining the process and problems of admitting computer animation evidence at trial).

[FN2]. See S. Michael Kozubek, The Visual Courtroom: A Picture Is Worth More than a Thousand Words, Law. PC, Feb. 1994, at 1, 2 (1994) (discussing the use of computer animation in multimillion-dollar product liability cases).

[FN3]. See Edward J. Bardelli, The Use of Computer Simulations in Criminal Prosecutions, 40 Wayne L. Rev. 1357, 1357 (1994).

[FN4]. See Fred H. Cate & Newton N. Minow, Communicating with Juries, 68 Ind. L.J. 1101, 1112 (1993) (illustrating how "innovative communications technologies [such as computers] may enhance the understanding of juries").

[FN5]. Karnavas & Jason, supra note 1, at 5.

[FN6]. See Mario Borelli, The Computer as Advocate: An Approach to Computer-Generated Displays in the Courtroom, 71 Ind. L.J. 439, 439 (1996) (discussing the growing role of computer animation in trials).

[FN7]. See generally I. Neel Chatterjee, Admitting Computer Animations: More Caution and New Approach Are Needed, 62 Def. Couns. J. 36 (1995) (arguing computer animation evidence should be admitted under the same standards governing computer simulated evidence); Vicki S. Menard, Admission of Computer Generated Visual Evidence: Should There Be Clear Standards?, 6 Software L.J. 325 (1993) (discussing standards for admitting computer generated evidence).

[FN8]. See Chatterjee, supra note 7, at 36.

[FN9]. See David W. Muir, Debunking the Myths About Computer Animation, in Securities Litigation 1992, at 591, 594 (PLI Litig. & Admin. Practice Course Handbook Series No. H-444, 1992), available in WESTLAW, PLI-LIT.

[FN10]. See Andrew Reese, Forensic Animation Helps Bring Cases to Life in Court, Law. PC, Aug. 15, 1995, at 1, 2.

[FN11]. See id.

[FN12]. See id. at 3.

[FN13]. See Rorie Sherman, Moving Graphics: Computer Animation Enters Criminal Cases, Nat'l L.J., Apr. 6, 1992, at 1, 32.

[FN14]. See Anne Marriott, Alexandria Firm Courts Lawyers By Providing Animation Computers, Wash. Times, Nov. 25, 1996, at D12.

[FN15]. See Reese, supra note 10, at 4.

[FN16]. See id.

[FN17]. See id.

[FN18]. See id.

[FN19]. See id.

[FN20]. See id.

[FN21]. See id.

[FN22]. See id.

[FN23]. Id. at 5.

[FN24]. See David Muir, Computer Animation: Debunking the Myths, Mass. Law. Wkly., Mar. 23, 1992, at S1, available in WESTLAW, MLW.

[FN25]. Id.

[FN26]. See id.

[FN27]. See id.

[FN28]. See id.

[FN29]. See Tina Daunt, Rapper's Self-Defense Claim Is Untrue, Prosecutors Say, L.A. Times, Nov. 28, 1995, at A27.

[FN30]. See id.

[FN31]. Id.

[FN32]. See id.

[FN33]. See Tina Daunt, Lawyer in Rapper's Trial Says Slaying Was Self-Defense, L.A. Times, Nov. 29, 1995, at B3.

[FN34]. Id.

[FN35]. Id.

[FN36]. See Tina Daunt, Wound Site Is Key Issue in Rapper Trial, L.A. Times, Dec. 22, 1995, at B1.

[FN37]. Id.

[FN38]. See Interview with Alvin E. Entin, Partner, Entin, Schwartz & Margules, P.A., in Ft. Lauderdale, Fla. (Oct. 7, 1996) [hereinafter Entin Interview] (discussing the technology that was available to the defense team).

[FN39]. See id.

[FN40]. See Letter from Glenn S. Shubb, Esq., Law Offices of David E. Kenner, to Carlo D'Angelo (Oct. 4, 1996) (discussing the various sources the defense team utilized in creating the computer animated video) (on file with the University of San Francisco Law Review).

[FN41]. See Videotape: People vs. Calvin Broadus (a.k.a. Snoop Doggy Dogg), Bullet Wound Analysis (Anite Group 1996) (on file with author).

[FN42]. See id.

[FN43]. See id.

[FN44]. See id.

[FN45]. See id.

[FN46]. See id.

[FN47]. Gravity/Verdict Version 1.20 was designed by Gravity, Inc. to assist attorneys in the organization and presentation of courtroom evidence.

[FN48]. See Entin Interview, supra note 38 (discussing the various computer innovations utilized by the defense team).

[FN49]. See id.

[FN50]. In "real-time" court reporting, a witness's testimony at trial can be instantly projected on screen to the jury.

[FN51]. See Entin Interview, supra note 38.

[FN52]. See id.

[FN53]. See id. The inconsistent statement could be located simply by entering into the computer a simple search command containing key words or phrases used by the witness. See id. Once the exact page and line of the deposition were located, it could instantly be highlighted and displayed on the in-court monitor. See id.

[FN54]. See Gary Borg, Rapper's Jury Deadlocks on Manslaughter, Chi. Trib., Feb. 22, 1996, at 6, available in

1996 WL 2645981; Allison Samuels & Jeff Giles, The Dogg Has His Day, Newsweek, Mar. 4, 1996, at 54, 54.

[FN55]. Fed. R. Evid. 901.

[FN56]. Fed. R. Evid. 901(a).

[FN57]. See Glen Weissenberger, Federal Evidence § 901.1 (2d ed. 1995).

[FN58]. See Christopher B. Mueller & Laird C. Kirkpatrick, Evidence § 9.1 (1995). The traditional steps to authenticate and introduce an exhibit are the following:

(1) having the exhibit marked for identification by the court reporter or other designated court officer; (2) authenticating the exhibit by the testimony of a witness unless it is self-authenticating; (3) offering the exhibit in evidence; (4) permitting adverse counsel to examine it; (5) allowing adverse counsel an opportunity to object; (6) submitting the exhibit to the court for examination if the court wants; (7) obtaining a ruling by the court; and (8) asking permission to have the exhibit, if admitted, presented to the jury by reading it (if it is a writing) or having it displayed or passed among them.

Id.

[FN59]. See Weissenberger, supra note 57, § 901.2.

[FN60]. See id.

[FN61]. See id. The initial determination of admissibility hinges upon the judge's determination under Rule 104(b) that an adequate foundation has been laid for admitting the exhibit. See Mueller & Kirkpatrick, supra note 58, § 9.2. This determination by the judge, however, is only limited to a finding of "whether there is evidence sufficient to support a jury finding of authenticity." Id. If this threshold requirement is satisfied, then the exhibit is typically admitted--unless there exist other grounds for exclusion. See id. Once an exhibit is admitted into evidence by the moving party, however, the opposing party may offer "counter proof" which challenges its authenticity. See id. It is important to bear in mind that once an exhibit is admitted under Rule 901, the ultimate decision of whether to accept it as authentic rests entirely within the jury's discretion. See id.

[FN62]. See Fed. R. Evid. 901(b)(9).

[FN63]. Id. The requirements of Rule 901(b)(9) can generally be met by offering evidence that:

(1) the computer equipment is accepted in the field as standard and competent and was in good working order, (2) qualified computer operators were employed, (3) proper procedures were followed in connection with the input and output of information, (4) a reliable software program was utilized, (5) the equipment was programmed and operated correctly, and (6) the exhibit is properly identified as the output in question.

Mueller & Kirkpatrick, supra note 58, § 9.17.

[FN64]. See Muir, supra note 24, at S1.

[FN65]. See id.

[FN66]. See id.

[FN67]. See id.

[FN68]. See id.

[FN69]. See Weissenberger, supra note 57, § 901.40.

[FN70]. See Fed. R. Evid. 402.

[FN71]. See id.

[FN72]. Mueller & Kirkpatrick, supra note 58, § 4.1.

[FN73]. See id.

[FN74]. Id.

[FN75]. See Fed. R. Evid. 403. "Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence." Id.

[FN76]. Weissenberger, supra note 57, § 403.1.

[FN77]. Id. § 403.2.

[FN78]. See id.

[FN79]. Id. § 403.3. "Consequently, if the evidence arouses the jury's emotional sympathies, evokes a sense of horror, or appeals to an instinct to punish, the evidence may be unfairly prejudicial." Id.

[FN80]. See id. § 403.4.

[FN81]. Id.

[FN82]. Id.

[FN83]. See id.

[FN84]. See id.

[FN85]. Fed. R. Evid. 801. Rule 801(c) defines hearsay as "a statement, other than one made by the declarant while testifying at the trial or hearing, offered in evidence to prove the truth of the matter asserted." Id.

[FN86]. Carole E. Powell, Note, Computer Generated Visual Evidence: Does Daubert Make a Difference?, 12 Ga. St. U. L. Rev. 577, 586 (1995).

[FN87]. See id.

[FN88]. Fed. R. Evid. 803.

[FN89]. Fed. R. Evid. 807 (formerly Fed. R. Evid. 803(24), 804(b)(5)).

[FN90]. Id.

[FN91]. See Weissenberger, supra note 57, § 804.33.

[FN92]. Fed. R. Evid. 807.

[FN93]. See Weissenberger, supra note 57, § 804.33.

[FN94]. Fed. R. Evid. 807.

[FN95]. Id.

[FN96]. See Weissenberger, supra note 57, § 804.33.

[FN97]. Fed. R. Evid. 807; see also Richardson v. State Highway & Transp. Comm'n, 863 S.W.2d 876, 882 (Mo. 1993) (illustrating the need for pretrial disclosure of exhibits as a means of providing opposing counsel with an adequate opportunity to examine the exhibit and raise any necessary objections).

[FN98]. Weissenberger, supra note 57, § 804.33 (quoting former Fed. R. Evid. 803(24)).

[FN99]. See Van Houten-Maynard v. ANR Pipeline Co., No. 89-C0377, 1995 WL 317056, at *12 (N.D. Ill. 1995) (holding that because computer animation can be highly influential upon the jury, it may have an "undue detrimental effect" if not disclosed to opposing counsel in a timely manner).

[FN100]. 949 S.W.2d 93 (Mo. Ct. App. 1997).

[FN101]. See id. at 95.

[FN102]. See id.

[FN103]. See id.

[FN104]. See id. at 96.

[FN105]. See id. at 97.

[FN106]. See id.

[FN107]. See id.

[FN108]. 591 N.E.2d 165 (Mass. 1992).

[FN109]. Id. at 168.

[FN110]. See Bray, 949 S.W.2d at 97.

[FN111]. See id. at 98.

[FN112]. See id.; see also Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923).

[FN113]. See Frye, 293 F. at 1014.

[FN114]. See State v. Clark, 655 N.E.2d 795, 801 (Ohio 1995).

[FN115]. See Bray, 949 S.W.2d at 98; see also Clark, 655 N.E.2d at 812-13 (establishing that the use of Auto-

CAD software in numerous criminal trials as a tool for crime scene reconstruction makes it a generally accepted scientific method).

[FN116]. 588 N.E.2d 189 (Ohio Ct. App. 1990).

[FN117]. See id. at 194.

[FN118]. See, e.g., Fed. R. Evid. 901(b)(9); People v. McHugh, 476 N.Y.S.2d 721, 723 (Sup. Ct. 1984).

[FN119]. 949 S.W.2d at 99.

[FN120]. See id. at 100.

[FN121]. No. 93-1302, 1997 WL 227452 (Fla. Dist. Ct. App. 1997).

[FN122]. See id. at *1.

[FN123]. See id.

[FN124]. See id.

[FN125]. See Pierce v. State, 671 So. 2d 186, 187 (Fla. Dist. Ct. App. 1996).

[FN126]. See Pierce, No. 93-1302, 1997 WL 227452, at *1.

[FN127]. See id.

[FN128]. See id. at *4-*5.

[FN129]. Id. at *1.

[FN130]. See id.

[FN131]. Id.

[FN132]. See id. at *2.

[FN133]. Id. (quoting Fla. Stat. Ann. § 90.105 (West 1991)).

[FN134]. Id. (quoting Fla. Stat. Ann. § 90.105 (West 1991)).

[FN135]. Id.

[FN136]. Id. at *3.

[FN137]. See id. at *6.

[FN138]. See id. at *4.

[FN139]. See id.

[FN140]. See id.

[FN141]. See id. at *5.

"[I]n order to admit a demonstrative exhibit, illustrating an expert's opinion such as computer generated animation, the proponent must establish the foundation requirements necessary to introduce the expert opinion. Specifically: (1) the opinion evidence must be helpful to the trier of fact; (2) the witness must be qualified as an expert; (3) the opinion evidence must be applied to evidence offered at trial; and (4) pursuant to [Fla. Stat. Ann. § 90.403 (West 1991)], the evidence, although technically relevant, must not present a substantial danger of unfair prejudice that outweighs its probative value."

Id. at *3 (quoting Kruse v. State, 483 So. 2d 1383, 1384 (Fla. Dist. Ct. App. 1986)).

[FN142]. 476 N.Y.S.2d 721 (Sup. Ct. 1984).

[FN143]. See id. at 722.

[FN144]. See id.

[FN145]. See id.

[FN146]. See id.

[FN147]. See id.

[FN148]. See id.

[FN149]. See id. at 723. "What is important is that the presentation be relevant to a possible defense, that it fairly and accurately reflect the oral testimony offered and that it be an aid to the jury's understanding of the issue." Id.

[FN150]. See David W. White-Lief, Effective Demonstrative Evidence: It's Your Most Persuasive Tool, Mass. Law. Wkly., Jan. 17, 1994, at B37, available in WESTLAW, MLW (noting that "[e]ighty-five percent of all learning is visual, compared to 10 percent for hearing, and 5 percent for the other senses combined"). "One study reported that jurors who received combined visual and oral presentations retained 650 percent more information compared to jurors who received only oral presentations." Id.

[FN151]. See generally E. Scott Savage, Demonstrative Evidence: Seeing May Not Be Believing but It Beats Not Seeing at All, Utah B.J., Nov. 1995, at 17 (advocating the use of demonstrative evidence as a tool to help the jury understand the facts).

[FN152]. See Thomas Brown, Visual Evidence: Animations Add a New Dimension, Nat'l L.J., May 27, 1991, at 19, 19.

[FN153]. See generally Mark I. Pinsky, Jury Out on High-Tech Courtroom, L.A. Times, Dec. 17, 1993, at A1 (presenting the dangers of using computer animation in the courtroom).

[FN154]. Reese, supra note 10, at 2.

[FN155]. 743 F.2d 1049 (4th Cir. 1984).

[FN156]. Id. at 1052.

[FN157]. 81 F.3d 416, 425 (4th Cir. 1996).

[FN158]. See id. at 424-25.

[FN159]. See id. at 424.

[FN160]. Id. at 425.

[FN161]. See id.

[FN162]. Id.

[FN163]. 518 N.W.2d 733 (S.D. 1994).

[FN164]. See id. at 735.

[FN165]. See id. at 737.

[FN166]. See id. at 738.

[FN167]. See id. at 737.

[FN168]. Id.

[FN169]. See id. at 738.

[FN170]. No. 92-3404, 1994 WL 124857 (E.D. Pa. 1994).

[FN171]. See id. at *5.

[FN172]. See id.

[FN173]. Id.

[FN174]. See id.

[FN175]. See id.

[FN176]. See id.

[FN177]. See id.

[FN178]. See Susan E. Davis, Animated Trials, Cal. Law., Jan. 1997, at 53, 61.

[FN179]. See id.

[FN180]. See id.

[FN181]. See id.

[FN182]. See id.

[FN183]. Pinsky, supra note 153, at A32 (paraphrasing the comments of the Honorable Eli Chernow, Los Angeles County Superior Court).

[FN184]. Id. (quoting the Honorable Eli Chernow, Los Angeles County Superior Court).

[FN185]. U.S. Const. amend. VI.

[FN186]. 304 U.S. 458 (1938).

[FN187]. See id. at 462.

[FN188]. See id. at 463.

[FN189]. 316 U.S. 455 (1942).

[FN190]. See id. at 473.

[FN191]. 372 U.S. 335 (1963).

[FN192]. See id. at 342.

[FN193]. See Powell v. Alabama, 287 U.S. 45, 71 (1932).

[FN194]. See Ake v. Oklahoma, 470 U.S. 68, 83 (1985); see also 18 U.S.C. § 3006A(e) (1994) (providing that indigent defendants shall receive the assistance of experts necessary for an adequate defense).

[FN195]. See Ex parte Grayson, 479 So. 2d 76, 82 (Ala. 1985) (holding that "there is nothing contained in the Ake decision to suggest that the United States Supreme Court was addressing anything other than psychiatrists and the insanity defense").

[FN196]. 62 Cal. Rptr. 2d 137 (Ct. App. 1997).

[FN197]. See Mark I. Pinsky, Newport Beach Developer To Be Retried in Slaying of Ex-Employee, L.A. Times, Apr. 3, 1993, at B5.

[FN198]. See id.

[FN199]. See id.

[FN200]. See id.

[FN201]. See Hood, 62 Cal. Rptr. 2d at 139.

[FN202]. See id.

[FN203]. See Pinsky, supra note 153, at A1.

[FN204]. Id.

[FN205]. See id. "The problem with these things is that the jury subconsciously takes these tapes and transposes

them into what the facts may be. Unless the defense has their own videotape, based on their versions of what happened, the trial is going to be totally unfair." Id.

[FN206]. See id.

[FN207]. 470 U.S. 68 (1985).

[FN208]. Id. at 76.

[FN209]. See Ross v. Moffitt, 417 U.S. 600, 612 (1974).

[FN210]. Ake, 470 U.S. at 77.

[FN211]. See id. at 68.

[FN212]. See id. at 78 (concluding that the state is not obligated to provide indigent defendants with all the assistance that wealthier defendants could afford).

[FN213]. The "private interest" in a criminal trial is the defendant's interest in the accuracy of a criminal prosecution. See id. at 78. Because criminal prosecutions place the defendant's life or liberty at risk, this interest is "almost always uniquely compelling." Id.

[FN214]. See id. at 77.

[FN215]. See Ross, 417 U.S. at 612 (citing San Antonio Indep. Sch. Dist. v. Rodriguez, 411 U.S. 1, 24 (1973); Griffin v. Illinois, 351 U.S. 12, 23 (1956)).

[FN216]. See Caldwell v. Mississippi, 472 U.S. 320, 324 n.1 (1985).

[FN217]. 724 F.2d 613 (8th Cir. 1983).

[FN218]. See id. at 624.

[FN219]. See Kenneth S. Broun et al., McCormick on Evidence § 214, at 394 (John William Strong ed., 4th ed. 1992).

[FN220]. See id.

[FN221]. See Karen Martin Campbell, Roll Tape--Admissibility of Videotape Evidence in the Courtroom, 26 U. Mem. L. Rev. 1445, 1464 (1996); Edward V. Filardi & Dimitrios T. Drivas, The Presentation of Demonstrative and Visual Evidence at Trial, in Patent Litigation 1990, at 245, 254 (PLI Patents, Copyrights, Trademarks, and Literary Property Course Handbook Series No. 299, 1990), available in WESTLAW, PLI-PAT.

[FN222]. Filardi & Drivas, supra note 221, at 254.

[FN223]. See Campbell, supra note 221, at 1467.

[FN224]. See Filardi & Drivas, supra note 221, at 254.
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