

Nova Law Review

Volume 19, Issue 1

1994

Article 12

State v. Pierce - Will Florida Courts Ride the Wave of the Future and Allow Computer Animations in Criminal Trials?

Jennifer Robinson Boyle*

*

Copyright ©1994 by the authors. *Nova Law Review* is produced by The Berkeley Electronic Press (bepress). <http://nsuworks.nova.edu/nlr>

State v. Pierce: Will Florida Courts Ride the Wave of the Future and Allow Computer Animations in Criminal Trials?

TABLE OF CONTENTS

I.	INTRODUCTION	371
II.	AN OVERVIEW OF COMPUTER ANIMATION	373
	A. <i>Definitions, Terms, and the Preparation Process</i>	375
	B. <i>Uses of Computer Animation at Trial</i>	376
III.	ADMISSIBILITY STANDARDS IN FLORIDA	377
IV.	ADVANTAGES AND DISADVANTAGES OF COMPUTER ANIMATION	380
V.	AN ANALYSIS OF <i>STATE V. PIERCE</i>	384
	A. <i>The State's Arguments for Allowing the Computer Animation</i>	386
	B. <i>The Pretrial Hearings</i>	393
	C. <i>The Court's Ruling</i>	398
	D. <i>Pierce's Arguments on Appeal</i>	400
	E. <i>Appellee's Arguments</i>	403
	F. <i>Appellant's Reply</i>	405
	G. <i>Comments</i>	408
VI.	CONCLUSION	411

I. INTRODUCTION

The use of computers has revolutionized many aspects of society, including the practice of law.¹ Despite an initial hesitation by legal professionals in taking advantage of computer technology, computers have become commonplace in most law offices for word processing, research, and billing. One analyst noted that the use of computers “has set the stage for the most significant technological revolution to affect the practice of law

1. Kathleen M. O'Connor, *Computer Animations in the Courtroom: Get with the Program*, 67 FLA. B.J. 20, 20 (1993) (providing general overview of computer animations and discussing the standards for admissibility in Florida).

since the invention of the photocopy machine.”² In the past few years, computer technology has found its way into the courtroom.³ Litigators are now turning to computers to generate graphic evidence that will help them educate and persuade the judge or jury to find in their favor.⁴

The use of computer generated evidence has become commonplace in civil litigation.⁵ However, in criminal cases its use has developed more slowly. This lag has been due in part to the expense of creating computer generated evidence.⁶ The high cost of creating an animation has not kept it from being used in civil cases because it often leads to settlements, which are more cost effective than trials.⁷ Because recent advances in technology have significantly decreased the production costs of computer generated evidence, it is now being used more frequently in criminal trials.⁸ While only one reported decision deals with the use of computer animation or simulation in a criminal case,⁹ a handful of trial courts around the country have admitted such evidence.¹⁰ Recently, in *State v. Pierce*, the Seven-

2. Jeffrey Allen, *Computers and the Litigator*, 7 AM. J. TRIAL ADVOC. 493, 493 (1984) (discussing various uses of computers within the practice of law and focusing on the computer's role in litigation).

3. Lory Dennis Warton, Comment, *Litigators Byte the Apple: Utilizing Computer-Generated Evidence at Trial*, 41 BAYLOR L. REV. 731, 731 (1989) (providing an in-depth explanation of the admissibility standards for computer-generated business records and computer simulations).

4. Elaine M. Chaney, Note, *Computer Simulations: How They Can Be Used at Trial and the Arguments for Admissibility*, 19 IND. L. REV. 735, 735 (1986). The author focuses on the practical considerations of the admissibility problems an attorney may face when introducing computer simulations. *Id.* at 741-56. The author also examines potential arguments an attorney may advance when seeking to introduce such evidence. *Id.* at 756-59.

5. Vicki S. Menard, *Admission of Computer Generated Visual Evidence: Should There Be Clear Standards?*, 6 SOFTWARE L.J. 325, 325-26 (1993) (citing Rorie Sherman, *Moving Graphics: Computer Animation Enters Criminal Cases*, NAT'L L.J., Apr. 6, 1992, at 1).

6. See Rorie Sherman, *Moving Graphics: Computer Animation Enters Criminal Cases*, NAT'L L.J., Apr. 6, 1992, at 32. The author points out that the overall cost of computer animations dropped dramatically; thus, the market for animations has been growing steadily. *Id.* The author also states that admission of computer animation in criminal trials was inevitable once it became affordable. *Id.*

7. Donald C. Dilworth, *Computer Animations Reach Criminal Court*, TRIAL, Sept. 1992, at 26. The author discusses society's growing interest in videos and focuses on the use of computer animation in criminal trials. *Id.* In particular, the author examines *People v. Mitchell*, No. 12,462 (Cal. Super. Ct. Marin County Feb. 19, 1992). *Id.*

8. Sherman, *supra* note 6, at 32.

9. *People v. McHugh*, 476 N.Y.S.2d 721 (Sup. Ct. 1984).

10. See Sherman, *supra* note 6, at 32 (citing *State v. Phillips*, No. 87-365 (Ariz. Super. Ct. Gila County 1988)); Dilworth, *supra* note 7, at 26 (citing *Mitchell*, No. 12,462).

teenth Circuit Court, in Broward County, Florida, admitted in evidence a computer animation proffered by the prosecution to show how an accident, in which a truck struck three children, occurred.¹¹ Despite objections made by the defense that the computer animation was not accurate, the judge admitted the animation as demonstrative evidence.¹² The defendant was convicted of vehicular homicide and was sentenced to sixty years in prison.¹³ The defense claimed that the trial court erred in admitting the animation, and appealed to the Fourth District.¹⁴ The issue of whether a computer animation should be admitted in evidence presents an issue of first impression in this state. Consequently, the Fourth District Court of Appeal's ruling may dictate the way Florida courts respond in the future to the proffering of computer animations and simulations in criminal trials.

This comment will consider computer animations and simulations, and their possible effects on criminal trials. Part II presents an overview of computer animations and contains a brief discussion of the history and preparation process. Part III reviews the standards for admissibility in Florida. Part IV discusses the advantages and disadvantages of allowing such evidence. Part V discusses *State v. Pierce*, the main focus of this comment. The discussion includes an in-depth analysis of the case and its possible ramifications.

II. AN OVERVIEW OF COMPUTER ANIMATION

Computers were initially used in litigation to create visual data, such as charts, diagrams, and graphs.¹⁵ The next significant occurrence involving the use of computers in the courtroom was the development of computer

11. *State v. Pierce*, No. 92-19316CF10A (Fla. 17th Cir. Ct. 1992) (admitting animation as demonstrative evidence to show how a vehicular homicide occurred), *appeal docketed*, No. 93-01302 (Fla. 4th Dist. Ct. App. Apr. 4, 1993).

12. Order on Computer Animation Evidence at Trial at 6, *State v. Pierce*, No. 92-19316CF10A (Fla. 17th Cir. Ct. 1992) [hereinafter Order on Computer Animation]; Record at 2342.

13. Initial Brief of Appellant at 3, *State v. Pierce*, No. 92-19316CF10A (Fla. 17th Cir. Ct. 1992), *appeal docketed*, No. 93-01302 (Fla. 4th Dist. Ct. App. Apr. 4, 1993) [hereinafter Appellant's Brief].

14. Notice of Appeal at 1, *State v. Pierce*, No. 92-19316CF10A (Fla. 17th Cir. Ct. 1992), *appeal docketed*, No. 93-01302 (Fla. 4th Dist. Ct. App. Apr. 4, 1993); Record at 2390.

15. Marshall S. Turner & Andrew T. Houghton, *In with the Old, In with the New: Interactive Animations Are Wave of the Future*, N.Y. L.J., Feb. 16, 1993, at S-1 (discussing the evolution of the use of computers in litigation and comparing the advantages of interactive computer graphics, which are prepared in the courtroom, with those prepared in advance).

animations.¹⁶ First used in 1979 in aviation litigation,¹⁷ computer animations and simulations have since been used in a variety of civil cases, ranging from automobile accident cases to patent infringement cases.¹⁸ Among these are instances in which animations or simulations were offered to reconstruct an accident;¹⁹ to demonstrate a company's reliance on the patented technology of another;²⁰ to reconstruct how physical damage to a home occurred from a hurricane;²¹ to demonstrate in a breach of contract case how a product performed as intended;²² and to demonstrate how a product could be perfected.²³ Most recently, however, computer animations and simulations have infiltrated the area of criminal law.²⁴ According

16. *Id.*

17. Sherman, *supra* note 6, at 32. According to Alan Treibitz, a representative of one of the larger established computer animation companies, computer animation was first used in a 1979 airplane crash case. *Id.*

18. David W. Muir, *Debunking the Myths About Computer Animation*, in SECURITIES LITIGATION 1992, at 591, 596-97 (PLI Litig. & Admin. Practice Course Handbook Series No. 444, 1992). "Computer animations . . . have been used for reconstructing, or reenacting, accidents, including automotive and truck accidents, aircraft collisions, . . . and construction equipment accidents." *Id.* Computer animation is useful in patent litigation, where technical differences are difficult to distinguish, as well as in industrial accidents involving alleged faulty machinery, because the machine's operation can easily be depicted. *Id.*

19. *See, e.g.*, Starr v. Campos, 655 P.2d 794 (Ariz. 2d Ct. App. 1982); Schaeffer v. General Motors Corp., 360 N.E.2d 1062 (Mass. 1977); Richardson v. State Highway & Transp. Comm'n, 863 S.W.2d 876 (Mo. 1993); Kudlacek v. Fiat S.p.A., 509 N.W.2d 603 (Neb. 1994); Deffinbaugh v. Ohio Turnpike Comm'n, 588 N.E.2d 189 (8th Ct. App.), *dismissed*, 562 N.E.2d 894 (Ohio 1990).

20. *See generally* Michael V. Ciresi & Jan M. Conlin, *A High-Tech Case: Lessons from Honeywell v. Minolta*, TRIAL, Sept. 1992, at 22 (citing Honeywell, Inc. v. Minolta Camera Co., Civ. No. 87-4847 (D.N.J. 1987)). The author discusses the use of animation to simplify the presentation of technical information to the jury in a patent infringement case. *Id.*

21. Strock v. Southern Farm Bureau Casualty Ins. Co., No. 92-2357, 1993 U.S. App. LEXIS 17431, at *1 (4th Cir. July 12, 1993) (admitting computer animated videotape simulation proffered by the plaintiff to show how damage to his beach house occurred during Hurricane Hugo).

22. Holland v. Dick Youngberg Chevrolet-Buick, Inc., 348 N.W.2d 770 (Minn. Ct. App. 1984) (using computer simulated test to show that truck purchased from dealer was not impaired and could achieve speed of 55 miles per hour with a full load).

23. Perma Research & Dev. v. Singer Co., 542 F.2d 111 (2d Cir.) (offering computer simulation by the plaintiff to show that its anti-skid device could be made workable and fail-safe), *cert. denied*, 429 U.S. 987 (1976).

24. *See McHugh*, 476 N.Y.S.2d at 721. At trial, the defendant proffered a reenactment of an automobile accident which caused the death of four friends. *Id.* The trial court admitted the reenactment into evidence and defendant was acquitted. *Id.*; *see also* Sherman, *supra* note 6, at 32 (citing *Phillips*, No. 87-365 (using animation to prove that an entrance

to some commentators, computer animation and simulation are the “wave of the future,” and they predict that this type of evidence will be used with increasing frequency in criminal trials.²⁵

A. *Definitions, Terms, and the Preparation Process*

A computer animation is a type of motion picture created with the help of a computer.²⁶ It consists of a series of computer generated still images, which are then recorded in rapid succession onto a videotape to create the illusion of movement.²⁷ A computer simulation differs significantly from an animation. In a simulation, the computer program is used to reconstruct an event by analyzing data and producing conclusions based on information contained in the software program being used.²⁸ Hence, in a simulation, the computer actually supplies missing data by making calculations based on the laws of physics.²⁹ Once the simulation is complete, it can be transformed into an animation.³⁰ The animation is then used to illustrate the conclusions drawn by the simulation.³¹

Computer animations are prepared using a six-step process.³² The first step involves the collection of data, including police or accident reports, testimony of eyewitnesses, calculations made by experts, photographs, drawings, and all other relevant information.³³ Next, the experts meet to decide what movement will be visually portrayed in the animation.³⁴ For

wound was caused by a gun held against the victim’s head and not fired from a distance)); Dilworth, *supra* note 7, at 26 (citing *Mitchell*, No. 12,462 (proffering animation to show that the victim’s position and the timing proved the killing was deliberate and premeditated)).

25. Sherman, *supra* note 6, at 32 (quoting John M. Dedman, Director of Training at the National College of District Attorneys, and Peter Barnett, a criminologist with Forensic Science Associates).

26. James W. Dabney, *Animation Is Invading Courtrooms*, N.Y. L.J., Apr. 6, 1993, at 4 (discussing computer animation in general, its various uses, and specifically its presentation at trial).

27. O’Connor, *supra* note 1, at 22 (citing Barry Sullivan, *Computer-Generated Reenactments as Evidence in Accident Cases*, 3 HIGH TECH L.J. 193 (1989)).

28. *Id.*

29. *Id.* (citing Ian S. Jones et al., *Computer Animation—Admissibility in the Courtroom*, SAE #910366, 143, 147 (published by the Society of Automotive Engineers (“SAE”), 400 Commonwealth Drive, Warrendale, PA 15096-0001)).

30. Roger Parloff, *Now Showing in a Courtroom Near You*, AM. L., May 10, 1990, at 4 (using laser disc systems and computer animations at trial).

31. *Id.*

32. Muir, *supra* note 18, at 598.

33. *Id.*

34. *Id.*

instance, in an animation of an automobile accident, the experts must decide if both cars should be in motion, or if only one should move. In the third step, data is loaded into the computer and the actual computer models of the objects or scene are created.³⁵ The fourth step involves entering additional data regarding the position of an object with respect to time.³⁶ This step controls the portrayal of how and where an object will move throughout the animation.³⁷ During the fifth step, the computer analyzes all the input data and generates still frames of the image.³⁸ Once the computer has rendered all the still frames, the images or frames are recorded in succession onto a videotape in order to create the illusion of movement.³⁹

B. *Uses of Computer Animation at Trial*

Animations can be used three ways at trial: 1) as a tutorial to explain complex scientific concepts; 2) as an illustration (similar to a sketch pad) to show an expert's opinion of how an event occurred or to show facts presented by witnesses; or 3) as a simulation, whereby an event is recreated by the computer, and the recreation then forms the basis of an expert opinion as to how the event occurred.⁴⁰ For instance, in a medical malpractice case, an animation could be used as a tutorial to show jurors a complete view of the circulatory system of the human body. It could then take jurors on a voyage through skin and tissues to show them the circulatory system from the perspective of being inside the veins or arteries. An example of how an animation could be used as an illustration would be to recreate an automobile accident in which all relevant information regarding the accident is known. The animation would then be used by an expert to demonstrate his or her opinion of how the accident occurred, just as if he or she were drawing on a chalkboard. A simulation, on the other hand, might be used in a multi-vehicle collision where the sequence of impacts is unknown. In that situation, a computer simulation could calculate the missing data using the known data, together with the laws of physics,

35. *Id.*

36. *Id.* at 598-99.

37. Muir, *supra* note 18, at 599, 600-01.

38. *Id.* at 599.

39. *Id.*

40. O'Connor, *supra* note 1, at 22. As explained previously, an animation and a simulation are very different. In a simulation, known facts are entered into the computer which will then analyze the data and generate conclusions based on the information contained in the software program. *Id.* Thus, the computer actually supplies missing information. *Id.* A simulation can then be converted to an animation. *Id.*

and show how the initial accident and the resultant chain of accidents occurred. From this recreation, the expert would formulate his or her opinion of how the accident took place. With its many applications, computer animation may become a vital tool for all parties in the courtroom. Nevertheless, the standard for admissibility of such evidence will vary.

III. ADMISSIBILITY STANDARDS IN FLORIDA

The evidentiary standard for admissibility of a computer animation depends on whether the animation is proffered as demonstrative evidence or scientific evidence.⁴¹ Generally, when an animation is used as a tutorial or illustration, it is being offered as demonstrative evidence.⁴² Demonstrative evidence is "evidence addressed directly to the senses without intervention of testimony."⁴³ This type of evidence usually consists of objects which illustrate verbal testimony, such as maps, diagrams, photographs, models, or charts.⁴⁴

Virtually no case law in Florida discusses the standards of admissibility for computer animations.⁴⁵ Therefore, the general rules regarding demonstrative evidence enunciated in the *Florida Statutes* should be followed.⁴⁶ In Florida, all relevant evidence is admissible unless its probative value is substantially outweighed by the danger of unfair prejudice.⁴⁷ Relevant evidence is defined as "evidence tending to prove or disprove a material fact."⁴⁸ Hence, in order to have a computer animation admitted in evidence, an attorney must first prove that the animation is relevant and that it will assist the trier of fact.⁴⁹ The attorney must also prove that its probative value outweighs its prejudicial effect.⁵⁰ To prove relevance and probative value, the attorney must show that the animation is what its proponent claims: it must accurately and fairly depict the testimony

41. Menard, *supra* note 5, at 328 (citing Lory Dennis Warton, *Litigators Bite the Apple: Utilizing Computer-Generated Evidence at Trial*, 41 BAYLOR L. REV. 731, 741 (1989) (recommending adoption of the relevancy balancing standard of the Federal Rules of Evidence as admissibility standard for computer-generated evidence)).

42. O'Connor, *supra* note 1, at 22.

43. BLACK'S LAW DICTIONARY 432 (6th ed. 1990).

44. O'Connor, *supra* note 1, at 22.

45. *Id.*

46. *Id.*; see also FLA. STAT. §§ 90.402-403 (1993).

47. FLA. STAT. §§ 90.402-403 (1993).

48. *Id.* § 90.401.

49. O'Connor, *supra* note 1, at 24.

50. FLA. STAT. § 90.403 (1993).

presented.⁵¹ If the attorney can prove that the expert's testimony meets these guidelines, and that the animation is merely an illustration of the expert's testimony, there should be little trouble in admitting the animation in evidence.⁵²

On the other hand, when a simulation is proffered as scientific evidence, the standard for admissibility is much higher.⁵³ In a simulation, the computer performs calculations and supplies missing data, and is considered to be more than an illustration of an expert's testimony.⁵⁴ Consequently, a simulation is subject to the standard of admissibility for novel scientific evidence.⁵⁵ Under this standard, a simulation must meet either the *Daubert*⁵⁶ or *Frye*⁵⁷ test for admissibility, depending on the jurisdiction. Although the United States Supreme Court rejected the *Frye* test in federal cases,⁵⁸ Florida courts require conformity to the *Frye* standard in cases in which a new scientific technique is used.⁵⁹ To have a simulation admitted in evidence in Florida, an attorney must be able to prove that the scientific principle is "sufficiently established to have gained general acceptance in the field in which it belongs."⁶⁰ Therefore, an expert

51. O'Connor, *supra* note 1, at 24 (citing FLA. STAT. § 90.901 (1993)).

52. *Id.*

53. *Id.*

54. *Id.*

55. *Id.*

56. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 113 S. Ct. 2786 (1993). In *Daubert*, the Court held that many considerations bear on the inquiry of whether a method is scientifically valid. *Id.* at 2796-97. The Court listed several considerations. These include: 1) whether the theory or technique can be (or has been) tested; 2) whether the theory or technique has been subject to peer review and publication; 3) the known or potential error rate; 4) the existence and maintenance of standards controlling its operation and; 5) whether the theory or technique has attracted widespread acceptance within the relevant scientific community. *Id.*

57. *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923). In *Frye*, the court held that expert testimony can be admitted when "the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs." *Id.* at 1014.

58. *Daubert*, 113 S. Ct. at 2799.

59. *Flanagan v. State*, 625 So. 2d 827, 828 (Fla. 1993). In a case involving pedophile profile evidence, the court evaluated the admissibility of expert scientific testimony and stated that it was not admissible in Florida unless it met the test for novel scientific evidence established in *Frye*. *Id.* In note 2 of the court's opinion, the court further explained that although the United States Supreme Court recently construed Rule 702 of the Federal Rules of Evidence as superseding the *Frye* test, Florida continues to adhere to the *Frye* test for the admissibility of scientific opinions. *Id.* at 829 n.2.

60. O'Connor, *supra* note 1, at 25.

must be qualified and must testify that the computer program used to create the simulation has achieved general acceptance within the relevant scientific community.⁶¹ If the simulation utilizes theories recognized by the laws of physics, it should be admitted.⁶² This standard is based on the fact that the theories recognized by the laws of physics have long been recognized by the scientific community.⁶³

In addition to meeting the *Frye* standard, the proponent of a computer simulation must also show that the simulation is relevant and that it will assist the trier of fact.⁶⁴ In order to meet these standards, the attorney will have to: 1) qualify the computer animator as an expert; 2) establish that the computer hardware and software are accepted within the relevant scientific community; 3) show the accuracy of the data input into the computer; 4) qualify the accuracy of the animation calculations; and 5) establish the accuracy of the media on which the animation will be presented, thus verifying that minimal distortion occurred in the process of videotaping.⁶⁵ Overcoming these hurdles can prove difficult. First, the attorney must show that the computer animator has the proper credentials and experience to qualify as an expert.⁶⁶ Second, the attorney must demonstrate that the computer hardware is commercially available and that its use has gained acceptance by practitioners in the particular field.⁶⁷ Third, the attorney must show that the computer software is commercially available and that its use has gained acceptance by practitioners in the particular field.⁶⁸ Fourth, the attorney must show the source and accuracy of the data entered into the computer.⁶⁹ This fourth step is the most important because the basis of a simulation rests on the quality of the data entered, and also because most challenges to animations and simulations are based on the accuracy of the input data.⁷⁰ Fifth, the attorney must prove the accuracy of the calculations

61. *Id.* (citing Chaney, *supra* note 4, at 744).

62. *Id.* (citing Chaney, *supra* note 4, at 748).

63. Craig Murphy, *Computer Simulations and Video Re-Enactments: Fact, Fantasy and Admission Standards*, 17 OHIO N.U. L. REV. 145, 156 (1990) (discussing admission standards and authentication requirements for computer animations and simulations).

64. O'Connor, *supra* note 1, at 26.

65. *Id.* (citing Jones et al., *supra* note 29, at 149-50).

66. *Id.* (citing Jones et al., *supra* note 29, at 149).

67. *Id.*

68. *Id.*

69. O'Connor, *supra* note 1, at 26 (citing Jones et al., *supra* note 30, at 149).

70. Parloff, *supra* note 30, at 4 (quoting Howard Nations, a Houston-based plaintiff's attorney).

performed by the computer.⁷¹ To demonstrate their accuracy, the calculations should be checked against hand calculations or benchmark tests.⁷² Finally, the attorney must be able to show that the videotaping process did not create distortion.⁷³ Because the process is detailed and complex, the proponent of computer simulation will find the standards for admissibility of such evidence to be exacting.

IV. ADVANTAGES AND DISADVANTAGES OF COMPUTER ANIMATION

Our society has become a visual society;⁷⁴ most people seldom read, but watch television for hours every day.⁷⁵ Indeed, one commentator has noted that “the average American will have watched over 25,000 hours of television by the age of 18.”⁷⁶ As a result, people in today’s society rely on visual sources for the majority of their information.⁷⁷ What better way to communicate with a jury than with the use of graphics presented in a manner similar to television?

Graphics are a wonderful way to communicate complex issues to a jury.⁷⁸ The cliché, “a picture is worth a thousand words,” captures the advantages of using computer animations. Oftentimes, animations can help clarify and simplify complex or technical evidence.⁷⁹ One of the biggest advantages of using an animation is that the event can be observed from almost any angle or position.⁸⁰ An animation can show views from the front, the inside, the outside, or even from overhead.⁸¹ The animation “can

71. O'Connor, *supra* note 1, at 26 (citing Jones et al., *supra* note 30, at 149).

72. *Id.* Benchmark tests are tests where the results are known.

73. *Id.* (citing Jones et al., *supra* note 29, at 150).

74. Dilworth, *supra* note 7, at 26.

75. Bruce G. Vanyo, *Communicating with “Post-Literate” Jury: Advanced Graphic Exhibits in Patent Trials*, in PATENT LITIGATION 1992, at 409, 411 (PLI Patents, Copyrights, Trademarks, and Literary Property Course Handbook Series No. 349, 1992) (using graphic exhibits in patent litigation).

76. Dilworth, *supra* note 7, at 26 (quoting Dan Luczak, Chief Executive Officer of Forensic Technologies International).

77. Vanyo, *supra* note 75, at 411-12.

78. Muir, *supra* note 18, at 593.

79. David Weinberg, “*Seeing is Believing*” *When You Use Scientific Animation*, MICH. LAW. WKLY., Dec. 6, 1993, at 5B (providing a general overview of computer animation, its admissibility, and its advantages).

80. Dabney, *supra* note 26, at 4.

81. O'Connor, *supra* note 1, at 20 (citing Kathlynn G. Fadely, *Use of Computer-Generated Visual Evidence in Aviation Litigation: Interactive Video Comes to Court*, 55 J.

place the jury in the driver's seat of an automobile involved in a collision, in the cockpit of an airplane about to crash, or in the position of an eyewitness to a crime."⁸² Hence, jurors can be mentally transported to the scene of the actual event.⁸³ Another advantage is that visual obstructions can be eliminated, thereby allowing the jury to view the inside of a machine or a component which might otherwise be impossible to photograph with a regular camera.⁸⁴

In addition to displaying various perspectives of an event, animations can be shown in slow motion⁸⁵ or can detail a particular part of an event to help focus the jury's attention on it.⁸⁶ Furthermore, an animation can be extremely beneficial when an event is too dangerous or too expensive to reenact.⁸⁷ For example, in a collision involving multiple vehicles, an animation could be used to show how the accident occurred without going through the trouble or expense of physically reenacting it, and without endangering lives. However, the most significant advantage of using a computer animation is that jurors retain more and understand the information better when it is presented visually.⁸⁸ Indeed, one commentator has stated that "[m]otion pictures are a memorable and attention-getting event during a trial."⁸⁹ When a computer animation is used, it is likely that jurors will pay close attention to what they are viewing.⁹⁰

Like all types of evidence, a computer animation has disadvantages as well. One of the biggest disadvantages is that the animation is only as good as the data entered into the computer,⁹¹ and, as computer mavens say, "garbage in, garbage out."⁹² In short, if the data entered into the computer is not accurate, the depiction of the event in the animation will not be

AIR L. & COM. 839, 849 (1989)).

82. *Id.*

83. Sherman, *supra* note 6, at 1.

84. Dabney, *supra* note 26, at 4.

85. Weinberg, *supra* note 79, at 5B.

86. *Id.*

87. O'Connor, *supra* note 1, at 20.

88. Dilworth, *supra* note 7, at 26 (quoting Dan Luczak, Chief Executive Officer of Forensic Technologies International).

89. Dabney, *supra* note 26, at 4.

90. *Id.*

91. See generally Jerome J. Roberts, *A Practitioner's Primer on Computer-Generated Evidence*, 41 U. CHI. L. REV. 254, 255 (1973-74) (providing a basic understanding of the principles of computerization and an outline for examining the worth of computer-generated evidence).

92. Mike Jensen, *Using Computers to Generate Graphics for the Courtroom*, MASS. LAW. WKLY., Sept. 13, 1993, at S4.

accurate.⁹³ Another disadvantage is that technology can distort an issue as easily as it can clarify one.⁹⁴ Facts could be misrepresented to present a scenario other than what took place.⁹⁵ This misrepresentation is most likely to occur when the stakes in the litigation are high.⁹⁶ In addition, animations are made to be continuous, and oftentimes gaps are filled with speculation, not fact.⁹⁷ Therefore, attorneys and their experts should carefully review animations for technical accuracy.

Some additional drawbacks of computer animations are that they are still relatively expensive and therefore, as some people claim, cater to the rich.⁹⁸ Moreover, they take time to produce,⁹⁹ and once produced, are not easily altered.¹⁰⁰ One of the biggest obstacles for an opponent of an animation to overcome is that jurors tend to place more weight on what they see and less weight on what they hear or read.¹⁰¹ Often, jurors think that evidence produced by a computer is more accurate or reliable.¹⁰² Thus, an attorney opposing a computer animation must inform the jury that the information presented is only as good as the data entered into the computer to create the animation. In addition, the attorney must review the data for errors because a computer can only process the data that is entered into it.¹⁰³ If an error is made in data entry, or incorrect data is used, the animation will not accurately reflect the event. Furthermore, the computer only processes data it is instructed to process and it can only process the information in the way it has been so instructed.¹⁰⁴ Therefore, an attorney opposing admission of an animation must employ an expert to review the

93. James A. Sprowl, *Evaluating the Credibility of Computer-Generated Evidence*, 52 CHL.-KENT L. REV. 547, 553 (1975) (explaining in detail the credibility of computer-generated evidence).

94. J. Stratton Shartel, *Computer Animation Often Provides Winning Edge for Litigators*, May, 1993, available in WL, TP-ALL, 7 No. 5 PH-INLIT 1, at 1.

95. *Id.* at 2.

96. *Id.*

97. Sherman, *supra* note 6, at 33 (quoting Peter R. DeForest, a forensic scientist).

98. *Id.* at 32.

99. Turner & Houghton, *supra* note 15, at S1.

100. *Id.*

101. Vanyo, *supra* note 75, at 411.

102. Murphy, *supra* note 63, at 146 ("When people receive information from the television they take it as the truth. . . . Thus, when evidence is presented in this format, it becomes 'not only believable, but virtually unassailable.'") (citing Lynn Feinerman, *New Season for Video Law*, 16 BARRISTER 15, 16 (1989)).

103. Roberts, *supra* note 91, at 263.

104. *Id.*

data, to vouch for its accuracy and completeness, and to review the computer program for deficiencies or flaws.¹⁰⁵

The use of computer animation in criminal trials raises additional issues. Some commentators believe that even with the decreased cost of preparing an animation, the cost favors the prosecution.¹⁰⁶ These critics feel that defendants with limited resources cannot combat this type of evidence.¹⁰⁷ Indeed, Michael Kennedy, counsel for the defense in *People v. Mitchell*, has called the animation proffered in that case "a slick, sophisticated commercial promoting the prosecutors' product: murder conviction at all costs."¹⁰⁸ In *Mitchell*, an animation was proffered in a murder trial involving the shooting death of the defendant's younger brother, Artie Mitchell.¹⁰⁹ The prosecution used the animation to prove that the killing was deliberate and premeditated.¹¹⁰ The judge admitted the animation in evidence and the jury found the defendant guilty of voluntary manslaughter.¹¹¹ The defense has appealed the verdict, contending that the body movements of the figure representing Artie Mitchell, as portrayed in the animation, violate the California law prohibiting an expert witness from speculating.¹¹²

The animation used in the *Mitchell* case was created by a ballistics specialist.¹¹³ The ballistics specialist used photographs of the scene, information from the autopsy, laboratory reports, and physical data based on examination of the scene by one of the prosecution's experts to create the animation.¹¹⁴ The degree of speculation used to create the video, if any, is unknown.

Other commentators argue that allowing computer animations into criminal trials is extremely prejudicial because human gestures, essential for a jury to determine intent, motive, and malice, cannot be recreated accurately.¹¹⁵ These opponents, however, do not object to animations depicting machines, such as cars and airplanes, because machines, unlike

105. *Id.*

106. Dilworth, *supra* note 7, at 26.

107. *Id.* (citing Michael Kennedy, *Videos Pose Danger as Insidious Form of Hypnotic TV*, CAL. ST. B. BULL., Mar. 1992, at 1).

108. Dilworth, *supra* note 7, at 26 (citing *Mitchell*, No. 12,462).

109. *Id.* (citing *Mitchell*, No. 12,462).

110. Sherman, *supra* note 6, at 32.

111. *Id.*

112. Dilworth, *supra* note 7, at 26.

113. *Id.*

114. *Id.*

115. Sherman, *supra* note 6, at 32.

humans, move in predictable and measurable ways.¹¹⁶ Thus, computer animations, like all forms of evidence, have both advantages and disadvantages.

V. AN ANALYSIS OF *STATE V. PIERCE*¹¹⁷

On June 23, 1992, at approximately 9:00 p.m., a truck collided with three children in a residential neighborhood of Dania, Florida.¹¹⁸ As a result, one child died and the others were seriously injured. According to witnesses, minutes earlier the same vehicle that struck the children collided with a trash can on the same street. The vehicle fled both scenes without stopping to provide information or render aid. Eyewitnesses to both accidents stated that the truck veered off the road. Approximately seven minutes after striking the garbage can, additional witnesses observed a truck of the same description strike the group of children who were walking home.¹¹⁹ Six-year-old Nicole Walker, who later died as a result of head trauma, was being carried by one of the older children.¹²⁰

The police discovered a portion of an automobile grille at the scene. From this discovery, they were able to deduce that the vehicle involved was a 1980 Chevrolet Silverado truck.¹²¹ Paint fragments recovered from the children's clothing indicated that the truck was blue. In addition, the autopsy showed that Nicole suffered head injuries, thus indicating that the truck might have a dent on it from the impact of Nicole's head.¹²² This evidence, coupled with statements from various witnesses and anonymous tips, directed police to a truck driven by Mr. Kenneth Pierce.¹²³ After extensive investigation regarding the truck, Mr. Pierce was arrested and charged with vehicular homicide and four additional counts.¹²⁴ The other charges included leaving the scene of an accident, driving while having a

116. *Id.*

117. No. 92-19316CF10A (Fla. 17th Cir. Ct., 1992), *appeal docketed*, No. 93-01302 (Fla. 4th Dist. Ct. App., Apr. 4, 1993). While there were several issues appealed, the focus of the discussion of this case will be on whether the computer animation proffered by the State was admissible.

118. Notice of Intent to Offer Computer-Animated Diagram Evidence at 1, *State v. Pierce*, No. 92-19316CF10A (Fla. 17th Cir. Ct. 1992) [hereinafter Notice of Intent]; Record at 2218.

119. Notice of Intent at 1, *Pierce* (No. 92-19316CF10A); Record at 2218.

120. Appellant's Brief at 4, *Pierce* (No. 93-01302).

121. Notice of Intent at 2, *Pierce* (No. 92-19316CF10A); Record at 2219.

122. Appellant's Brief at 6, *Pierce* (No. 93-01302).

123. *Id.* at 7.

124. *Id.* at 2, 7-9.

suspended or revoked license, and two counts of tampering with physical evidence.¹²⁵

On November 20, 1992, the state attorney's office, in accordance with section 90.956 of the *Florida Statutes*, informed the court of its intent to use a computer animation to reenact the accident.¹²⁶ In addition, on December 4, 1992, the State filed a Notice of Intent to Offer Computer- Animated Diagram Evidence.¹²⁷ On January 8, 1993, a pretrial hearing was held whereby expert witnesses for the State testified regarding the preparation of the computer animation.¹²⁸ On February 5, 1993, another pretrial hearing was held and the defense called one of the State's expert witnesses to testify regarding the computer animation.¹²⁹ On March 31, 1993, Judge Speiser entered an order allowing the State to present the computer animation as demonstrative evidence.¹³⁰ The order analogized the computer animation to a chart or diagram and found that it was sufficiently explanatory and illustrative of relevant testimony.¹³¹

Mr. Pierce was tried by jury on March 9, 1993.¹³² During the trial, the computer animation proffered by the State was admitted in evidence and published to the jury.¹³³ The animation was used to help the jury visualize and comprehend the testimony of Detective Bruce Babcock, a traffic homicide investigator with the Broward County Sheriff's Office, and the lead investigator assigned to the case.¹³⁴ The jury returned a guilty verdict on each offense charged. Judge Speiser entered judgment in accordance with the verdict.¹³⁵ Mr. Pierce was sentenced to sixty years in prison on all counts.¹³⁶ Thirty years of the total sentence related to the vehicular homicide count.¹³⁷ The Notice of Appeal from the Judgment and Sen-

125. *Id.* at 2.

126. Notice Pursuant to Florida Statute 90.956 at 1, *State v. Pierce*, No. 92-19316CF10A (Fla. 17th Cir. Ct. 1992) [hereinafter Notice 90.956]; Record at 2216 .

127. Notice of Intent at 8, *Pierce* (No. 92-19316CF10A); Record at 2325.

128. Supplemental Record on Appeal at 3, *State v. Pierce*, No. 92-19316CF10A (Fla. 17th Cir. Ct. 1992), *appeal docketed*, No 93-01302 (Fla. 4th Dist. Ct. App. Apr. 4, 1993) [hereinafter Supplemental Record].

129. *Id.* at 176-267.

130. Order on Computer Animation at 6, *Pierce* (No. 92-19316CF10A); Record at 2342.

131. Order on Computer Animation at 4, *Pierce* (No. 92-19316CF10A); Record at 2340.

132. Appellant's Brief at 2, *Pierce* (No. 93-01302).

133. *Id.* at 10.

134. *Id.*

135. *Id.* at 2.

136. *Id.* at 3.

137. Appellant's Brief at 3, *Pierce* (No. 93-01302).

tence was filed on April 22, 1993,¹³⁸ and the case is presently pending before the Fourth District Court of Appeal of the State of Florida.¹³⁹

A. *The State's Arguments for Allowing the Computer Animation*

On December 4, 1992, the State filed a Notice of Intent to Offer Computer-Animated Diagram Evidence.¹⁴⁰ At that time, it also filed a memorandum of law to assist the court in determining the admissibility of the animation.¹⁴¹ The State argued that the animation would provide a visualization of Detective Babcock's testimony regarding the accident.¹⁴² The State proffered that the detective was a qualified accident reconstruction expert. Moreover, the State declared that the factual basis for the testimony was physical evidence found at the scene, physical evidence from the defendant's truck, physical evidence found during the autopsy of Nicole Walker, and evidence gathered from testimony of the witnesses and the victims.¹⁴³

In addition to the State's argument that the computer animation was a visualization of Detective Babcock's testimony, the State also attempted to proffer the computer animation as real evidence.¹⁴⁴ In its memorandum of law, the State cited the case of *Straight v. State*¹⁴⁵ to support its contention that a photograph may be admissible as illustrating the testimony of a witness, or as having independent value.¹⁴⁶ In *Straight*, the state introduced photographs depicting the victim's body recovered from a river twenty days after the victim was stabbed to death.¹⁴⁷ The trial judge admitted the photographs over defendant's objections that they were not

138. *Id.*

139. Notice of Appeal at 1, *Pierce* (No. 92-19316CF10A); Record at 2390.

140. Notice of Intent at 1-2, *Pierce* (No. 92-19316CF10A); Record at 2218-19.

141. Notice of Intent at 3-8, *Pierce* (No. 92-19316CF10A); Record at 2220-25. The State proffered an animation, not a simulation. Because the State offered the animation as demonstrative evidence, in order to have the animation admitted into evidence, the State had to show that the animation was relevant, that it would assist the trier of fact, and that it was not unfairly prejudicial. See FLA. STAT. §§ 90.401-403 (1993).

142. Notice of Intent at 2, 6-7, *Pierce* (No. 92-19316CF10A); Record at 2219, 2223-24.

143. Notice of Intent at 2, 6-7, *Pierce* (No. 92-19316CF10A); Record at 2219, 2223-24.

144. Notice of Intent at 7, *Pierce* (No. 92-19316CF10A); Record at 2224.

145. Notice of Intent at 3, *Pierce* (No. 92-19316CF10A); Record at 2220 (citing *Straight v. State*, 397 So. 2d 903, 907 (Fla.) (holding photographs admissible when relevant either independently or as corroborative of the testimony of witnesses)), *cert. denied*, 454 U.S. 1022 (1981)).

146. Notice of Intent at 3, *Pierce* (No. 92-19316CF10A); Record at 2220.

147. *Straight*, 397 So. 2d at 906-07.

relevant and were too gruesome because of decomposition of the body.¹⁴⁸ The Florida Supreme Court held that the photographs were relevant, either independently or as corroboration of the testimony of witnesses, and therefore were properly admitted.¹⁴⁹

In further support of its proposition that the animation could be admitted as both demonstrative and substantive evidence, the State cited *Hannewacker v. City of Jacksonville Beach*.¹⁵⁰ The State used *Hannewacker* to analogize the computer animation to photographs, so that the animation could be admitted to illustrate the testimony of a witness, or be admitted as having independent value.¹⁵¹ In *Hannewacker*, the Florida Supreme Court delineated two separate theories concerning the admissibility and use of photographs as evidence: the pictorial testimony theory and the silent witness theory.¹⁵² The court stated that under the pictorial testimony theory, a photograph is admissible as a way of expressing a witness's testimony.¹⁵³ Under the silent witness theory, the court stated that once a photograph was properly authenticated, it could have independent evidentiary value and could speak for itself.¹⁵⁴ The *Hannewacker* court stated that "because of present technology, photographs can often demonstrate, preserve, and transmit a message far better than any human witness Admissibility, however, is a question for the trial judge."¹⁵⁵

The State then presented the case of *Adams v. State*¹⁵⁶ to show that Florida courts have admitted a map, diagram, or picture in evidence, provided it is verified as a true representation of the subject of the witness's testimony.¹⁵⁷ The State also presented a series of cases to support its contention that since *Adams*, Florida courts have traditionally admitted new

148. *Id.*

149. *Id.* at 907.

150. Notice of Intent at 3-4, *Pierce* (No. 92-19316CF10A); Record at 2220-21 (citing *Hannewacker v. City of Jacksonville Beach*, 419 So. 2d 308, 310 (Fla. 1982) (stating photographs can be admitted into evidence either under pictorial testimony theory or under silent witness theory)). The State incorrectly referred to this case as *Hannewacker v. State*.

151. Notice of Intent at 3-4, *Pierce* (No. 92-19316CF10A); Record at 2220-21.

152. *Hannewacker*, 419 So. 2d at 310.

153. *Id.*

154. *Id.*

155. *Id.* at 311.

156. Notice of Intent at 4, *Pierce* (No. 92-19316CF10A); Record at 2221 (citing *Adams v. State*, 10 So. 106, 113 (Fla. 1891) (holding a map, diagram, or picture, verified as a correct representation, is admissible into evidence to assist a witness in explaining the case to the jury)).

157. Notice of Intent at 4, *Pierce* (No. 92-19316CF10A); Record at 2221.

ideas and techniques in evidence.¹⁵⁸ The most persuasive among these were *Grant v. State*¹⁵⁹ and *Baker v. State*.¹⁶⁰

In *Grant*, Daniel Grant was charged with murder for the strangulation of his former employer.¹⁶¹ During an interview with police officers, Grant confessed and allowed pictures to be taken of his reenactment of the crime.¹⁶² He was convicted by a jury and sentenced to death.¹⁶³ On appeal, the defendant sought reversal, claiming, among other things, that it was error to admit a color motion picture film and several still photographs portraying a reenactment of the murder.¹⁶⁴ The defense conceded that the motion picture and photographs were admissible if they tended to illustrate or explain the testimony of a witness.¹⁶⁵ However, the defense claimed that this evidence was merely cumulative and added nothing to the confession.¹⁶⁶ The Supreme Court of Florida stated that the admissibility of a motion picture showing a reenactment of a crime was a case of first impression.¹⁶⁷ The court held that the motion picture was admissible to supplement and explain the defendant's confession.¹⁶⁸ The court reasoned that posed photographs were previously held admissible in criminal trials, the use of motion pictures in civil controversies had been approved, and the same rules regarding the admissibility of photographs apply to the admissibility of motion pictures.¹⁶⁹ The court stated where a motion picture involves a reenactment, it is subject to objection on the basis of its accuracy.¹⁷⁰ Because the defendant had voluntarily acted out the crime at

158. Notice of Intent at 4, *Pierce* (No. 92-19316CF10A); Record at 2221 (citing *e.g.*, *Johnson v. State*, 442 So. 2d 193 (Fla. 1983), *cert. denied*, 466 U.S. 963 (1984), and *aff'd on other grounds*, 593 So. 2d 206 (Fla.), and *cert. denied*, 113 S. Ct. 119 (1992); *Baker v. State*, 241 So. 2d 683 (Fla. 1970); *Grant v. State*, 171 So. 2d 361 (Fla. 1965), *cert. denied*, 384 U.S. 1014 (1966)).

159. Notice of Intent at 4, *Pierce* (No. 92-19316CF10A); Record at 2221 (citing *Grant*, 171 So. 2d at 365 (holding a motion picture reenactment was admissible)).

160. Notice of Intent at 4, *Pierce* (No. 92-19316CF10A); Record at 2221 (citing *Baker*, 241 So. 2d at 686 (finding a motion picture reenactment admissible as demonstrative evidence)).

161. *Grant*, 171 So. 2d at 361-62.

162. *Id.* at 362.

163. *Id.* at 361.

164. *Id.* at 363.

165. *Id.*

166. *Grant*, 171 So. 2d at 363.

167. *Id.*

168. *Id.* at 363.

169. *Id.*

170. *Id.* at 364.

the scene, the danger of inaccuracy was minimized, and the court allowed the motion picture.¹⁷¹

The State also cited *Baker v. State*¹⁷² in its memorandum of law. In *Baker*, the Florida Supreme Court affirmed the murder conviction of Bernard Baker, who robbed and beat an elderly man to death with a hammer.¹⁷³ The court held that it was not reversible error to admit a filmed reenactment of the crime that was published to the jury but not given to them after they retired for deliberations.¹⁷⁴ Using this case law, the State in *Pierce* persuasively showed the admissibility of motion picture reenactments in Florida courts.¹⁷⁵

In addition, the State cited several cases which showed that Florida courts have traditionally admitted unique scientific evidence to aid the trier of fact.¹⁷⁶ Among these were *Correll v. State*¹⁷⁷ and *Andrews v. State*.¹⁷⁸ In *Correll*, the jury convicted the defendant of four counts of first degree murder.¹⁷⁹ The defendant appealed the conviction on numerous grounds, one of which was an attack on the testimony of a forensic serology expert.¹⁸⁰ At the trial, the expert opined that, based on the results of blood electrophoresis, certain blood found at the murder scene could have been that of the defendant.¹⁸¹ The expert also stated that the blood could not have been from any of the victims or other suspects.¹⁸² The defendant contended that it was error to admit the results of the blood tests because the general scientific reliability of electrophoresis had not been proven by the state.¹⁸³ The court stated that the electrophoresis process

171. *Grant*, 171 So. 2d at 364.

172. 241 So. 2d 683 (Fla. 1970).

173. *Id.* at 685-86.

174. *Id.* at 686.

175. Order on Computer Animation at 3, *Pierce* (No. 92-19316CF10A); Record at 2339.

176. Notice of Intent at 4, *Pierce* (No. 92-19316CF10A); Record at 2221 (citing *e.g.*, *Correll v. State*, 523 So. 2d 562 (Fla.), *cert. denied*, 488 U.S. 871 (1988) and *habeas corpus denied sub nom.* *Correll v. Dugger*, 588 So. 2d 422 (Fla. 1990); *Baker*, 241 So. 2d at 683; *Grant*, 171 So. 2d at 361).

177. Notice of Intent at 4, *Pierce* (No. 92-19316CF10A); Record at 2221 (citing *Correll*, 523 So. 2d at 566-67 (holding results of blood electrophoresis testing admissible)).

178. Notice of Intent at 4, *Pierce* (No. 92-19316CF10A); Record at 2221 (citing *Andrews v. State*, 533 So. 2d 841, 850-51 (Fla. 5th Dist. Ct. App. 1988) (finding DNA "genetic fingerprinting" evidence admissible)).

179. *Correll*, 523 So. 2d at 564.

180. *Id.* at 566.

181. *Id.*

182. *Id.*

183. *Id.*

was not a new method of testing blood and similar testimony had been admitted throughout the state. It concluded that it was not error to admit the expert's testimony.¹⁸⁴

In *Andrews*, the Fifth District Court of Appeal addressed the admissibility of a new scientific technique.¹⁸⁵ The defendant was convicted of aggravated battery, sexual battery, and armed burglary of a dwelling.¹⁸⁶ Samples of the victim's blood, the defendant's blood, and semen found in the victim's vagina were analyzed and compared for their DNA composition.¹⁸⁷ The trial court admitted the DNA identification evidence which linked the defendant to the crime and ultimately led to his conviction.¹⁸⁸ On appeal, the defense claimed that the trial court erred in admitting this evidence because the tests were unreliable.¹⁸⁹ The appellate court reviewed the novel procedure using the *Frye* approach and decided that the DNA evidence was based on accepted scientific principles.¹⁹⁰ In addition, it determined that the evidence would be helpful to the jury, and that its probative value outweighed its potential prejudicial effects.¹⁹¹ Accordingly, the court held that the DNA-test results were admissible.¹⁹²

In further support of its position that the animation should be admitted as demonstrative evidence in *Pierce*, the State cited *Wade v. State*.¹⁹³ In *Wade*, the court admitted a master brake cylinder in evidence that was similar to, but not the same as, the one used to commit a murder.¹⁹⁴ Restating the supreme court's holding in *Alston v. Shriver*,¹⁹⁵ the court held demonstrative evidence is admissible when it is relevant and when it is a reasonably exact replica of the object involved.¹⁹⁶ Therefore, the trial

184. *Correll*, 523 So. 2d at 566-67.

185. *Andrews*, 533 So. 2d at 843.

186. *Id.* at 842.

187. *Id.* at 843.

188. *Id.*

189. *Id.* at 849.

190. *Andrews*, 533 So. 2d at 843-51.

191. *Id.* at 849.

192. *Id.* at 850.

193. Notice of Intent at 5, *Pierce* (No. 92-19316CF10A); Record at 2222 (citing *Wade v. State*, 204 So. 2d 235, 239 (Fla. 2d Dist. Ct. App. 1967) (admitting master brake cylinder even though it was not the identical one used in the perpetration of the crime)).

194. *Wade*, 204 So. 2d at 238-39.

195. 105 So. 2d 785, 791 (Fla. 1958) (holding demonstrative evidence admissible when it is relevant and when it is a reasonably accurate replica of the object used during the commission of the crime).

196. *Wade*, 204 So. 2d at 239 (citing *Alston*, 105 So. 2d at 791).

court did not err in admitting the brake cylinder as demonstrative evidence.¹⁹⁷

To lend additional support, the State cited the more recent case of *Brown v. State*,¹⁹⁸ in which the First District Court of Appeal admitted a styrofoam head and knife as demonstrative evidence.¹⁹⁹ In *Brown*, the styrofoam head and knife were used during the victim's testimony and also by the prosecutor during closing argument to demonstrate how the defendant stabbed the victim three times in the head.²⁰⁰ The jury acquitted the defendant of the attempted murder charge and convicted him of aggravated battery.²⁰¹ The court concluded that the knife and the styrofoam head were admissible as demonstrative evidence because both were sufficiently accurate replicas and were relevant to the issues in the case.²⁰² Thus, the court affirmed the conviction, finding no reversible error by the trial court.²⁰³

To strengthen its contention that the computer animation be admitted against Pierce, the State brought the case of *Davis v. State* to the court's attention.²⁰⁴ In that case, the State used a videotape during a medical examiner's testimony to depict the victim's wounds, to explain how the wounds were inflicted, and to show that two different knives were used.²⁰⁵ The tape was also used to refute the defendant's claim of self-defense.²⁰⁶ The Florida Supreme Court determined that the videotape was relevant and thus was admissible.²⁰⁷ Based on the aforementioned case law, the State in *Pierce* presented a persuasive argument, predicated on prior Florida case

197. *Id.*

198. Notice of Intent at 5, *Pierce* (No. 92-19316CF10A); Record at 2222 (citing *Brown v. State*, 550 So. 2d 527, 528-29 (Fla. 1st Dist. Ct. App. 1989) (allowing use of a styrofoam head and knife used by the victim and the prosecutor during closing argument to demonstrate how the defendant stabbed the victim in the head)), *review denied*, 560 So. 2d 232 (Fla. 1990).

199. *Brown*, 550 So. 2d at 528.

200. *Id.*

201. *Id.* at 529.

202. *Id.* at 528-29.

203. *Id.* at 529.

204. Notice of Intent at 5, *Pierce* (No. 92-19316CF10A); Record at 2222 (citing *Davis v. State*, 586 So. 2d 1038, 1041 (Fla. 1991) (allowing a videotape showing the murder victim's wounds and the crime scene to show how two different types of knives were used and to disprove the defendant's claim of self defense), *vacated*, 112 S. Ct. 3021 (1992)), *and cert. denied*, 114 S. Ct. 1205 (1994).

205. *Davis*, 586 So. 2d at 1041.

206. *Id.*

207. *Id.*

law, to show that the courts have allowed new ideas and techniques in evidence in order to aid the trier of fact in the decision making process. Nevertheless, the State persisted in its attempt to convince the court that the animation was an indispensable piece of evidence—one that the court should admit.

In order to further persuade the court to admit the animation in evidence, the State cited cases from other jurisdictions that have admitted such evidence.²⁰⁸ In *Starr v. Campos*,²⁰⁹ an Arizona case, the plaintiff's son was killed when his car collided with a truck which had crossed into his path.²¹⁰ The trial court admitted a computer simulation proffered by the defendant, which showed how the accident occurred.²¹¹ It entered judgment in favor of the truck driver and plaintiffs appealed, contending that it was error to admit the computerized analysis of the accident.²¹² Although the court of appeals reversed the case on other grounds, it determined that, should the procedure achieve general acceptance among scientists in the relevant fields, the simulation would be admitted.²¹³

The State in *Pierce* also presented the highly persuasive case of *People v. McHugh*.²¹⁴ In *McHugh*, a New York court approved the use of a computer reenactment of a fatal car crash proffered by the defendant.²¹⁵ The court stated that “[w]hile this appears to be the first time such a graphic computer presentation has been offered at a criminal trial, every new development is eligible for a first day in court.”²¹⁶ The court determined that the one and one-half minute graphic presentation was admissible because it was more akin to a chart or diagram than to a scientific device.²¹⁷ The *McHugh* court went on to say that:

208. Notice of Intent at 5-6, *Pierce* (No. 92-19316CF10A); Record at 2222-23.

209. 655 P.2d 794 (Ariz. 2d Ct. App. 1982). The court stated computer simulation could be admitted “if it is derived from principles and procedures that have achieved general acceptance in the scientific field to which they belong.” *Id.* at 797.

210. *Id.* at 795.

211. *Id.* at 796-97.

212. *Id.* at 795-96.

213. *Starr*, 655 P.2d at 797.

214. Notice of Intent at 6, *Pierce* (No. 92-19316CF10A); Record at 2223 (citing *McHugh*, 476 N.Y.S.2d at 722 (holding computer animation proffered by the defense admissible in criminal trial for vehicular homicide)). Although the record stated the case as *People v. New York*, the correct name of the case is *People v. McHugh*.

215. *McHugh*, 476 N.Y.S.2d at 722.

216. *Id.* at 722.

217. *Id.*

A computer is not a gimmick and the court should not be shy about its use, when proper. Computers are simply mechanical tools—receiving information and acting on instructions at lightning speed. When the results are useful, they should be accepted, when confusing, they should be rejected. 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.²¹⁸

Thus, based on Florida case law and case law from other jurisdictions, the State in *Pierce* argued that the animation should be admitted as evidence.²¹⁹ Even though the State proffered the animation as a visualization of Detective Babcock's verbal testimony,²²⁰ it contended that the computer animation should also be admitted as real evidence, as was the motion picture in *Grant*.²²¹ In addition, the State explained that the animation was clearly relevant to the issues in the case²²² and argued that its use should not be barred simply because a computer animation had not been offered in previous Florida criminal cases.²²³

B. *The Pretrial Hearings*

At an extensive pretrial hearing, the State presented several witnesses who testified regarding the collection and the input of data used to prepare the animation, as well as the computer program used to create the animation.²²⁴ Among the witnesses who testified on January 8, 1993, was Deputy Deborah Bjorndalen-Hull.²²⁵ The court declared Deputy Bjorndalen-Hull an expert in accident reconstruction.²²⁶ She testified that she created a geographic diagram of the homicide scene on a computer using the AutoCAD (computer-aided design) program.²²⁷ The deputy testified that the AutoCAD program is accepted in the engineering and scientific fields

218. *Id.* at 722-23.

219. Notice of Intent at 5-6, *Pierce* (No. 92-19316CF10A); Record at 2222-23.

220. Notice of Intent at 7, *Pierce* (No. 92-19316CF10A); Record at 2224.

221. Notice of Intent at 7, *Pierce* (No. 92-19316CF10A); Record at 2224; *see also Grant*, 171 So. 2d at 364-65.

222. Notice of Intent at 7, *Pierce* (No. 92-19316CF10A); Record at 7.

223. Notice of Intent at 7, *Pierce* (No. 92-19316CF10A); Record at 2224.

224. *See generally* Supplemental Record, *Pierce* (No. 93-01302).

225. *Id.* at 16.

226. *Id.* at 19.

227. *Id.* at 21-26.

as one of the leading computer-aided design programs in the world.²²⁸ She took all measurements used to create the diagram according to methods accepted by accident reconstructionists in the field.²²⁹ The only information she used that was not of her own personal knowledge was the position of the victims and the location of physical evidence collected by Detective Babcock.²³⁰ When her measurements were transferred to the firm that prepared the animation, they were transferred from computer to computer.²³¹ Since no data was entered into the computer by humans, there was no possibility of data entry error.²³² Moreover, in her opinion, the animation presented an accurate representation of the geographic area and was a fair and accurate depiction of the scene.²³³

Detective Babcock, the lead investigator in the case, also testified.²³⁴ He, too, was declared an expert in accident reconstruction.²³⁵ He testified that he responded to the scene of the accident, and while there, he collected evidence and interviewed witnesses.²³⁶ In addition, Detective Babcock collected information about the victims and the vehicle involved in the accident.²³⁷ He submitted all the information gathered to the animation firm.²³⁸ Detective Babcock stated that he supervised and oversaw every aspect of the production of the animation.²³⁹ He further testified that the animation fairly and accurately reflected his opinions as to how the accident occurred,²⁴⁰ and that it was a visualization that would aid in explaining his opinion to the jury.²⁴¹ During the hearing, Detective Babcock was questioned regarding the color of the vehicle.²⁴² He admitted that the color of the vehicle depicted in the animation was not completely identical to that of Mr. Pierce's truck.²⁴³ He elaborated further, stating that while

228. *Id.* at 26.

229. Supplemental Record at 23-24, *Pierce* (No. 93-01302).

230. *Id.* at 36-38.

231. *Id.* at 27.

232. *Id.* at 27-28.

233. *Id.* at 25-26, 30-31.

234. Supplemental Record at 63, *Pierce* (No. 93-01302).

235. *Id.* at 67.

236. *Id.* at 68-71.

237. *Id.* at 78-80.

238. *Id.* at 79.

239. Supplemental Record at 81, *Pierce* (No. 93-01302).

240. *Id.* at 82, 135-36.

241. *Id.* at 82-84, 135-36.

242. *Id.* at 103, 110-12, 119-21, 140-41.

243. *Id.* at 103.

it was not identical, the color of the truck depicted in the animation was accurate.²⁴⁴ In addition, Detective Babcock stated that the animation did not contain every minute detail because its purpose was to show how the accident occurred.²⁴⁵ Detective Babcock was also questioned about how the speed of the vehicle was calculated.²⁴⁶ He testified that in creating the animation, the posted speed limit of thirty miles per hour was used.²⁴⁷ In addition, he stated that this was consistent with witness testimony and might be a bit conservative.²⁴⁸ Detective Babcock also responded to numerous questions regarding the size of the puddle depicted in the animation and whether it extended into the street.²⁴⁹ He stated that he had interviewed numerous witnesses and had used their testimony to calculate the dimensions of the puddle depicted in the animation.²⁵⁰ As to the position of the bodies,²⁵¹ Detective Babcock stated that after the accident, the children were lying face down in the puddle and witnesses had moved them to prevent them from drowning.²⁵² He used the testimony of numerous witnesses to calculate the position of the children at the time of the impact.²⁵³

The State also presented testimony from John Suchocki, the president of the firm used to prepare the animation.²⁵⁴ Mr. Suchocki was declared an expert in forensic animation.²⁵⁵ He testified regarding the computer hardware and software used by his company in preparing the animation,²⁵⁶ and stated that the software used was one of the most accurate available.²⁵⁷ He also testified as to the input of the geographic diagram created by Deputy Hull²⁵⁸ and to the source of all other data used to create the animation.²⁵⁹ He stated that the data and information used to prepare the

244. Supplemental Record at 103-06, *Pierce* (No. 93-01302).

245. *Id.* at 103-04.

246. *Id.* at 86-87, 106-07.

247. *Id.* at 87, 106-07.

248. *Id.* at 87, 107.

249. Supplemental Record at 116-18, *Pierce* (No. 93-01302).

250. *Id.* at 116-17.

251. *Id.* at 98-100, 123-24, 134-35.

252. *Id.* at 185.

253. *Id.* at 123-24, 136-37.

254. Supplemental Record at 148, *Pierce* (No. 93-01302).

255. *Id.* at 149.

256. *Id.* at 152-54.

257. *Id.* at 153.

258. *Id.* at 156-59.

259. Supplemental Record at 159-63, *Pierce* (No. 93-01302).

animation was the type of information that was relied upon by experts in the field of forensic animation.²⁶⁰ Mr. Suchocki testified that the animation was a fair and accurate representation and that the animation was extremely accurate.²⁶¹

At the pretrial hearing on February 5, 1993, the defense did not present expert testimony, but instead chose to question Detective Babcock, one of the State's experts.²⁶² During the questioning, the defense examined Detective Babcock on the issue of whether the size of the puddle depicted in the animation was accurate and whether the puddle extended into the street.²⁶³ Detective Babcock restated that the dimensions of the puddle shown in the animation were based on testimony taken from witnesses.²⁶⁴ Asked how the vehicle left the roadway and struck the children,²⁶⁵ as well as how the point of impact was calculated,²⁶⁶ he testified that he had interviewed numerous witnesses regarding these issues. In his opinion, the animation fairly and accurately depicted the manner in which the vehicle struck the children as well as the position of the bodies at the time of the impact.²⁶⁷ Moreover, Detective Babcock testified that several of the eyewitnesses who viewed the animation felt it was a fair and accurate depiction of what happened that night.²⁶⁸ Detective Babcock was also questioned regarding the lighting²⁶⁹ and weather conditions at the time of the accident.²⁷⁰ He stated that there was disagreement among the witnesses as to the lighting conditions at the time of the accident.²⁷¹ Although the accident occurred at approximately 9:00 p.m. in mid-June, just as it began to get dark, the animation portrayed lighted conditions so that the jury would be able to see it.²⁷²

At the conclusion of testimony, the State presented its arguments for admitting the animation in evidence. Counsel argued that the animation

260. *Id.* at 163.

261. *Id.* at 165.

262. *Id.* at 165.

263. *Id.* at 206, 209-15, 223-25.

264. Supplemental Record at 206, 223-24, *Pierce* (No. 93-01302).

265. *Id.* at 212-14, 216, 225.

266. *Id.* at 185, 212-17, 225.

267. *Id.* at 216-17.

268. *Id.*

269. Supplemental Record at 192-93, 219, *Pierce* (No. 93-01302).

270. *Id.* at 183-84, 200.

271. *Id.* at 218-19.

272. *Id.* at 244.

should be admitted both as demonstrative evidence and real evidence.²⁷³ The State's primary arguments for admitting the animation as demonstrative evidence were that it visually portrayed the opinion of an expert (Detective Babcock)²⁷⁴ and that it would aid the trier of fact in understanding the expert's testimony.²⁷⁵ In arguing that the animation should be admitted as real evidence, the State analogized the animation to a series of compiled photographs.²⁷⁶ The State argued that a photograph can be admitted as real evidence if an expert testifies that it fairly and accurately depicts something of relevance.²⁷⁷ Moreover, the State argued that the tape should be admitted as real evidence because it was a non-verbal mode of expressing Detective Babcock's opinion.²⁷⁸ In anticipation of an objection, the State stressed that the discrepancies regarding the accuracy of the animation, such as the lighting and weather conditions, are directed to the weight of the evidence, not the admissibility.²⁷⁹ The State asked that the court admit the animation and allow the jury to determine its credibility.²⁸⁰ In addition, based on section 90.956 of the *Florida Statutes*,²⁸¹ the State argued that because the case involved voluminous writings, recordings, and photographs, the case could be presented in the form of a chart, summary, or calculation.²⁸² In support of this contention, the State explained that it had provided notice of this method to the defense²⁸³ and had made available to them all information used to create the animation.²⁸⁴

The defense argued that the animation was inaccurate, misleading, and therefore should not be admitted in evidence.²⁸⁵ The defense cited the

273. *Id.* 227-29.

274. Supplemental Record at 227-29, 238, *Pierce* (No. 93-01302).

275. *Id.* at 229.

276. *Id.* at 230, 232-33.

277. *Id.* at 229.

278. *Id.* at 240.

279. Supplemental Record at 227-28, 236, 243-44, *Pierce* (No. 93-01302).

280. *Id.* at 227-28, 243-44.

281. FLA. STAT. § 90.956 (1993). "When it is not convenient to examine in court the contents of voluminous writings, recordings, or photographs, a party may present them in the form of a chart, summary, or calculation by calling a qualified witness." *Id.* A party who intends to do this must give timely notice in writing of his intention and must make the summary and its supporting data available to the court and to the other parties. *Id.*

282. Supplemental Record at 230-31, *Pierce* (No. 93-01302).

283. *Id.* at 231.

284. *Id.* at 231-32.

285. *Id.* at 247-48, 254-55.

case of *Manning v. Lake Superior*²⁸⁶ to support its contention that reconstruction attempts must be excluded from evidence based on relevance, unless they are sufficiently similar to the accident. Counsel for the defense stated that if the facts are not similar, the relevance, not the weight of the evidence is affected;²⁸⁷ if the evidence is not relevant, it should not be admitted.²⁸⁸ The defense stated that the animation proffered by the prosecution was inaccurate in the depiction of the puddle size and shape,²⁸⁹ the location of the bodies,²⁹⁰ the lighting conditions,²⁹¹ the weather conditions,²⁹² and the color of the truck.²⁹³ The defense attacked the animation as being so misleading that it did not accurately portray what occurred and argued that it should be excluded.²⁹⁴

C. The Court's Ruling

On February 9, 1993, Judge Speiser issued a verbal opinion regarding the admissibility of the computer animation.²⁹⁵ The court issued an Order on the Use of Computer Animation Evidence at Trial on March 31, 1993, which was filed on April 12, 1993.²⁹⁶ In the order, Judge Speiser stated that since there were no reported decisions involving the use of computer animation in the State of Florida, the court must consider decisions from other states that have addressed this issue. He cited the case of *People v. McHugh*,²⁹⁷ and stated that this was the only reported opinion involving the use of computer animation in a criminal case. Judge Speiser noted that in *McHugh*, the court allowed the computer animation as substantive

286. *Id.* at 245 (citing *Manning v. Lake Superior & Ishpeming R.R.*, 144 N.W.2d 831, 833 (Mich. 3d Ct. App. 1966) (holding that film showing reenactment of railroad accident was inadmissible because it depicted conditions substantially different than those present at the time of the accident)).

287. Supplemental Record at 245-46, *Pierce* (No. 93-01302).

288. *Id.*

289. *Id.* at 246-48.

290. *Id.* at 247.

291. *Id.* at 248-50.

292. Supplemental Record at 248-50, *Pierce* (No. 93-01302).

293. *Id.* at 251-54.

294. *Id.* at 254. The defense could have argued that the animation was flawed because eyewitness testimony is flawed, and the animation was based on eyewitness testimony.

295. *Id.* at 268-84.

296. Order on Computer Animation at 1, *Pierce* (No. 92-19316CF10A); Record at 2337.

297. *McHugh*, 476 N.Y.S.2d at 721.

evidence.²⁹⁸ Next, the judge referred to several articles discussing unpublished trial decisions. Among those discussed were *People v. Mitchell*,²⁹⁹ *Arizona v. Phillips*,³⁰⁰ and *State v. Spath*.³⁰¹ In addition, Judge Speiser referred to several Florida cases involving similarly unique evidentiary issues:³⁰² *Baker v. State*,³⁰³ *Johnson v. State*,³⁰⁴ and *Brown v. State*.³⁰⁵

Judge Speiser further stated that the computer animation was simply a new method of expressing the conclusions and opinions of an expert.³⁰⁶ He analogized the relevancy of such evidence to that of a chart or a diagram and stated that it should not be rejected because of its novelty. He announced that the original source data upon which the animation was based was reasonably trustworthy and reliable. Judge Speiser also stated that the accuracy of additional data used by the experts to prepare the animation had been verified by their testimony. The court found the animation sufficiently explanatory and illustrative of relevant testimony, and the subject matter of the tape relevant to the case. Hence, Judge Speiser concluded that the animation could be used by the State as demonstrative evidence, but not as substantive evidence. The court found the animation was not scientific or experimental in nature and therefore distinguished it from DNA test results or blood spattering analysis.³⁰⁷ Thus, the animation was not subject to the test outlined in *Frye v. United States*.³⁰⁸ Judge Speiser addressed the defense's argument that the tape was prejudicial by reminding counsel that all evidence introduced at a trial is prejudicial. He found that the computer animation was not so confusing or biased as to be deemed misleading.³⁰⁹

Despite strenuous objection by the defense,³¹⁰ the computer animation was introduced as evidence and was shown to the jury.³¹¹ The jury

298. Order on Computer Animation at 2, *Pierce* (No. 92-19316CF10A); Record at 2338 (citing *McHugh*, 476 N.Y.S.2d at 721).

299. No. 12,462.

300. No. 87-365.

301. No. SGJ263908 (N.J. Bergen County Super. Ct. 1990).

302. Order on Computer Animation at 3, *Pierce* (No. 92-19316CF10A); Record at 2339.

303. *Baker*, 241 So. 2d at 683.

304. 442 So. 2d 193 (Fla. 1983).

305. *Brown*, 550 So. 2d at 527.

306. Order on Computer Animation at 3, *Pierce* (No. 92-19316CF10A); Record at 2339.

307. Order on Computer Animation at 6, *Pierce* (No. 92-19316CF10A); Record at 2342.

308. *Frye*, 293 F. at 1013.

309. Order on Computer Animation at 6, *Pierce* (No. 92-19316CF10A); Record at 2342.

310. Appellant's Brief at 10, *Pierce* (No. 93-01302).

311. *Id.*

returned its verdicts, finding Mr. Pierce guilty of each offense charged.³¹² Mr. Pierce was adjudged guilty in accordance with the verdicts and was sentenced to a total of sixty years in prison.³¹³ His sentence for the vehicular homicide count was thirty years.³¹⁴ The defense filed its Notice of Appeal from the Judgment and Sentence on April 22, 1993.³¹⁵

D. *Pierce's Arguments on Appeal*

On appeal, Mr. Pierce contends that the computer animation was improperly admitted because the State never established that the procedure utilized to create the animation was accepted in the scientific community.³¹⁶ In addition, he contends that the animation was misleading because the facts underlying the depiction were not consistent with the witnesses' testimony.³¹⁷ Consequently, the animation represented the State's theory of what occurred, not what actually did occur.³¹⁸ Furthermore, Mr. Pierce argues that the animation was inadmissible hearsay because it illustrated statements made by witnesses who did not testify at trial.³¹⁹

Mr. Pierce first argues that the trial court erred in admitting the animation because the State failed to establish that the procedures used to prepare the animation were accepted in the scientific community.³²⁰ He contends that the State presented no testimony as to the scientific reliability of the computer program or of its general acceptance in the scientific community.³²¹ Moreover, he asserts that such evidence is required in Florida in order to conform with the test outlined in *Frye*³²² and the admission of the animation in evidence was therefore improper.³²³

In his second argument, Mr. Pierce asserts that the information used to prepare the animation was not consistent with the testimony of the witnesses.³²⁴ In particular, he asserts that the size of the puddle, the color

312. *Id.* at 2.

313. *Id.* at 2-3.

314. *Id.*

315. Appellant's Brief at 3, *Pierce* (No. 93-01302).

316. *Id.* at 12, 15, 16.

317. *Id.* at 12, 16-23.

318. *Id.* at 12, 19.

319. *Id.*

320. Appellant's Brief at 12, 19, *Pierce* (No. 93-01302).

321. *Id.* at 15.

322. *Id.* at 15-16 (citing *Frye*, 293 F. at 1013); *Flanagan*, 625 So. 2d at 828.

323. Appellant's Brief at 12, 16, *Pierce* (No. 93-01302).

324. *Id.* at 12, 16-23.

of the truck, and the lighting and weather conditions portrayed in the animation were inconsistent with the testimony of witnesses.³²⁵ Mr. Pierce argues, based on *Brown v. State*,³²⁶ that demonstrative exhibits can only be admitted in evidence when they are accurate and reasonable reproductions.³²⁷ He contends that the inaccurate depiction of the size of the puddle and of the lighting and weather conditions precluded the jury from considering his defenses that the vehicle involved was not his, or alternatively, that the vehicle was not operated in a reckless manner.³²⁸ Mr. Pierce thus contends it was error to admit the animation given the above discrepancies.³²⁹

Regarding the puddle, Mr. Pierce asserts that the shape of the puddle and its dimensions were not accurately depicted in the animation.³³⁰ The basis of this argument is that the puddle depicted in the animation did not coincide with the photographs taken the night of the accident, nor with diagrams drawn by the police shortly after the accident occurred.³³¹ Mr. Pierce states that both the photographs and the diagrams showed that the puddle extended at least partially into the street.³³² In support of this contention, he relies on the testimony of one witness who viewed the animation and stated the puddle was slightly bigger than that depicted,³³³ and the fact that Detective Babcock did not interview the witnesses regarding the size of the puddle until approximately six months after the accident.³³⁴ Mr. Pierce's secondary defense is that the puddle extended into the street, and the accident was the unavoidable result of a sudden loss of control upon entering the puddle.³³⁵

Mr. Pierce also argues that the color of the truck shown in the animation was not consistent with the testimony of the witnesses.³³⁶ He states that all witnesses testified that the truck was green or dark, but the truck shown in the animation was blue.³³⁷ Therefore, he believes that the image

325. *Id.* at 17-23.

326. *Id.* at 17 (citing *Brown*, 550 So. 2d at 527).

327. *Id.*

328. Appellant's Brief at 18-23, *Pierce* (No. 93-01302).

329. *Id.* at 12, 16-23.

330. *Id.* at 17-19, 22-23.

331. *Id.*

332. *Id.*

333. Appellant's Brief at 18, *Pierce* (No. 93-01302)

334. *Id.* at 18, 22.

335. *Id.* at 22.

336. *Id.* at 18-19.

337. *Id.* at 18.

of the truck used in the animation was drawn to conform to the truck the police took into custody.³³⁸ He contends that his primary defense, that he was not the driver and that his was not the truck involved in the accident, was debunked by the graphic depiction of his exact vehicle in the animation.³³⁹

Next, Mr. Pierce argues that the lighting and weather conditions were not accurately reflected in the animation.³⁴⁰ He contends that both were enhanced so that the jury could see the animation more clearly, and thus the animation was not consistent with witness testimony.³⁴¹ In addition, he asserts that the lighting and weather conditions on the night of the accident were dark and rainy.³⁴² He argues that under such inclement conditions, the children would have been invisible to all until a vehicle was right upon them,³⁴³ a fact that would have been relevant in determining whether the truck was operated recklessly.³⁴⁴ Therefore, Mr. Pierce contends that the jury was shown a portrayal of the accident from a better perspective than he had, and his defense against the element of recklessness was not given due consideration.³⁴⁵

Mr. Pierce's third argument is grounded upon the hearsay rule. He contends that the animation was created using the testimony of seven witnesses.³⁴⁶ However, only two of those individuals testified at trial.³⁴⁷ Hence, he contends that allowing the jury to see the illustration of what other witnesses described to the police amounted to hearsay.³⁴⁸ Moreover, he claims that this denied him the opportunity to cross-examine these witnesses, a fundamental Sixth Amendment right.³⁴⁹ Mr. Pierce argues that the animation should have been excluded on this ground.³⁵⁰

338. Appellant's Brief at 18-19, *Pierce* (No. 93-01302).

339. *Id.* at 21-22.

340. *Id.* at 19.

341. *Id.*

342. *Id.* at 22.

343. Appellant's Brief at 22, *Pierce* (No. 93-01302).

344. *Id.* at 22.

345. *Id.* at 22-23.

346. *Id.* at 24.

347. *Id.*

348. Appellant's Brief at 24, *Pierce* (No. 93-01302).

349. *Id.* at 24.

350. *Id.* at 12, 24.

E. Appellee's Arguments

In response to Appellant's Initial Brief, Appellee filed its Answer Brief on July 27, 1994.³⁵¹ Appellee first argues that the trial court did not abuse its discretion by admitting the animation because the State established that the procedures used to create the animation were accepted in the scientific community.³⁵² Appellee states that Mr. Pierce did not preserve his argument that the procedure utilized to create the animation was not accepted in the scientific community.³⁵³ Appellee bases its argument on the fact that Mr. Pierce never objected to the animation on this ground.³⁵⁴ However, Appellee also argues that because the tape was used to illustrate an expert's opinion of how the incident occurred, *Frye* was not applicable.³⁵⁵ To support its contention, Appellee cites *McHugh*³⁵⁶ to show that another court previously determined that an animation is more like a chart or diagram, rather than a scientific device.³⁵⁷ In addition, Appellee cites various other Florida cases in support of its position.³⁵⁸ Nevertheless, Appellee contends that the State did meet the *Frye* test because all of the experts testified that the methods utilized were of the type reasonably relied upon by experts in the field and were reliable.³⁵⁹ Therefore, even if there was error, it was harmless error.³⁶⁰

Appellee's second argument in response is that the information in the animation was consistent with the testimony of the witnesses and the physical evidence.³⁶¹ Appellee contends that the animation was used to illustrate Detective Babcock's opinion of how the accident occurred and that

351. Answer Brief of Appellee at 50, *State v. Pierce*, No. 92-19316CF10A (Fla. 17th Cir. Ct. 1992), *appeal docketed*, No. 93-01302 (Fla. 4th Dist. Ct. App. Apr. 4, 1993) [hereinafter Appellee's Brief].

352. *Id.* at 27.

353. *Id.*

354. *Id.*

355. *Id.* at 27.

356. *McHugh*, 476 N.Y.S.2d at 722-23.

357. Appellee's Brief at 27-28, *Pierce* (No. 93-01302).

358. *Id.* In his Brief, Appellee cites *Bundy v. State*, 455 So. 2d 330 (Fla. 1984), *cert. denied*, 476 U.S. 1109 (1986), *Baker*, 241 So. 2d at 683, and *Grant*, 171 So. 2d at 361, to suggest that *Frye* is inapplicable to the *Pierce* case and that the motion picture reenactment should be admissible since it explains the testimony of a witness. Appellee's Brief at 27-28, *Pierce* (No. 93-01302).

359. *Id.*

360. *Id.*

361. *Id.* at 29.

Mr. Pierce was allowed full cross-examination of Detective Babcock. Mr. Pierce had ample opportunity to challenge the accuracy of Detective Babcock's opinion.³⁶² Appellee argues that the puddle portrayed in the animation was accurate because several of the witnesses who were present at the scene viewed the animation and attested to the accuracy of the size and shape of the puddle depicted.³⁶³ Appellee further argues that the photographs depicting the puddle, which were taken after the accident, did not accurately depict the size and shape of the puddle because there was a hard rain shortly after the accident.³⁶⁴ Moreover, Appellee argues that Mr. Pierce provided no evidence to support his argument that the puddle depicted in the animation was different from the sketch prepared by the police.³⁶⁵ This sketch was prepared by a road patrol officer and not by an accident reconstructionist.³⁶⁶ Furthermore, Appellee notes that the size and shape of the puddle changed because of additional rain and the fact that people present at the scene were walking through it.³⁶⁷

Appellee's next argument is that the color of the truck portrayed in the animation was accurate.³⁶⁸ Appellee contends that the artificial yellow light at the scene made the blue truck appear green.³⁶⁹ In addition, the six layer paint fragments recovered from the clothing of one of the injured children matched the paint chips taken from Mr. Pierce's truck.³⁷⁰ Appellee argues that the damage to Mr. Pierce's truck was fresh, that the dent in the truck's hood was consistent with Nicole's head injury, and that the plastic fragments found at the scene matched the factory installed turn signal lens still intact on the left side of the truck.³⁷¹ Appellee also notes that a piece of the front grille found at the scene was from the same make and model as Mr. Pierce's truck, and Mr. Pierce had the grille of his truck replaced after the accident.³⁷² Thus, Appellee contends there is no doubt that Mr. Pierce's truck was the truck involved in the accident.³⁷³

362. Appellee's Brief at 29, *Pierce* (No. 93-01302).

363. *Id.*

364. *Id.* at 29.

365. *Id.* at 30.

366. *Id.* at 31.

367. Appellee's Brief at 31, *Pierce* (No. 93-01302).

368. *Id.*

369. *Id.*

370. *Id.*

371. *Id.* at 31-32.

372. Appellee's Brief at 32, *Pierce* (No. 93-01302).

373. *Id.*

Appellee also notes that the State informed the jury that the video did not attempt to reconstruct the lighting conditions at the time of the accident.³⁷⁴ It would be impossible to produce accurate lighting unless a photographer had been present at the time of the accident.³⁷⁵ Appellee contends that if the court accepted Mr. Pierce's argument that the animation was inadmissible because the lighting was not accurately portrayed, photographs of an incident that occurred at night would never be admissible.³⁷⁶ Hence, Appellee argues, based on *United States v. Clayton*,³⁷⁷ that the deficiencies in lighting should go to the weight of the evidence, not the admissibility.³⁷⁸

Next, Appellee addresses Mr. Pierce's argument that the video was misleading because it contained an overhead view, providing the jury with a better perspective than Mr. Pierce had at the time of the collision.³⁷⁹ Appellee contends that Mr. Pierce did not preserve this claim because he made no objection regarding the different perspectives.³⁸⁰ In addition, Appellee notes that the State used aerial photographs at trial to describe the scene and the path of the truck without objection from Mr. Pierce.³⁸¹ Furthermore, the animation was not misleading because it offered three different perspectives of the accident, none of which were misleading.³⁸²

Appellee rebuts Mr. Pierce's secondary defense, that the accident was caused by a sudden loss of control upon entering the puddle, by pointing out that Mr. Pierce did not provide evidence to support his defense.³⁸³ The testimony presented showed the truck left the road completely before entering the puddle and hitting the children³⁸⁴ and thus, Appellee contends that the animation accurately portrayed the events.³⁸⁵

374. *Id.*

375. *Id.*

376. *Id.* at 32-33.

377. 643 F.2d 1071, 1074 (5th Cir. 1981) (stating that deficiencies in measurements and lighting in photographs depicting a model wearing the defendant's clothes went to weight, not admissibility).

378. Appellee's Brief at 33, *Pierce* (No. 93-01302).

379. *Id.*

380. *Id.* at 33-34.

381. *Id.* at 33.

382. The State offered one view from overhead, one from Pierce's perspective, and one from the children's perspective. *Id.* at 33-34.

383. Appellee's Brief at 34, *Pierce* (No. 93-01302).

384. *Id.*

385. *Id.*

Appellee also notes that the animation did not include things that could have prejudiced the jury because it did not contain sound, did not show any blood, and used mannequins to portray the children.³⁸⁶ Likewise, the animation depicted Mr. Pierce's vehicle traveling at the posted speed limit, even though testimony from witnesses showed that he was traveling up to twice the speed limit.³⁸⁷ Moreover, a gap or blank space was intentionally included in the animation because of a lack of testimony to show what Mr. Pierce was doing at that time.³⁸⁸ Hence, Appellee contends that the animation was supported by testimony and physical evidence, and was thus not misleading.³⁸⁹

Appellee points out that the trial court has wide discretion concerning the admissibility of evidence, and that deficiencies go to the weight of the evidence, not to the admissibility.³⁹⁰ Therefore, Appellee contends that even if there was error, it was harmless.³⁹¹

Appellee's final argument concerning admissibility is that the animation is not hearsay.³⁹² The animation was offered as demonstrative evidence to illustrate Detective Babcock's opinion of how the accident occurred.³⁹³ Because the animation was not offered to prove the truth of the matter asserted, it was not hearsay.³⁹⁴

Among the cases cited by Appellee in support of its position was *Bender v. State*.³⁹⁵ Appellee notes the *Bender* court's finding that if an expert bases his opinion on facts or data that are of the type experts in the field would reasonably rely upon, then the facts or data do not have to be admitted as evidence.³⁹⁶ Because the expert testimony was based in part on records, data, and opinions of others, and was the type of evidence reasonably relied upon by experts in the field, Appellee contends that the hearsay rule poses no obstacle to the animation.³⁹⁷

386. *Id.*

387. *Id.*

388. Appellee's Brief at 34, *Pierce* (No. 93-01302).

389. *Id.* at 35.

390. *Id.*

391. *Id.*

392. *Id.* at 36.

393. Appellee's Brief at 36, *Pierce* (No. 93-01302).

394. *Id.* at 36.

395. 472 So. 2d 1370 (Fla. 3d Dist. Ct. App. 1985).

396. Appellee's Brief at 36, *Pierce* (No. 93-01302).

397. *Id.*

F. *Appellant's Reply*

In response to Appellee's Answer Brief, Mr. Pierce filed his Reply Brief on September 26, 1994.³⁹⁸ Mr. Pierce reiterated his argument that the State failed to establish that the procedures used to prepare the animation were accepted in the scientific community.³⁹⁹ In addition, he argues that the animation was not an accurate reflection of what actually occurred; he states that it conformed to the State's theory of the case.⁴⁰⁰ Mr. Pierce argues that depicting the truck as blue was inaccurate because none of the witnesses testified that it was blue.⁴⁰¹ He contends that Appellee's Answer Brief cites only to testimony that supports its arguments and discounts testimony that contradicts them.⁴⁰² He further argues that the multiple perspectives used in the animation, especially the view of what the children saw, were misleading.⁴⁰³ Mr. Pierce contends that none of the children saw the grille of the truck as shown in the video. Thus, he contends that the perspective depicting what the children saw was false.⁴⁰⁴

Mr. Pierce rebuts Appellee's argument that there was no evidence presented to support his defense of loss of control of the vehicle. He claims evidence presented by the State showed the truck was traveling down the middle of the road, or on the wrong side of the road just prior to the accident.⁴⁰⁵ This evidence, he contends, was consistent with his secondary defense that he hit the puddle and lost control of the vehicle as he was returning to the right side of the road.⁴⁰⁶

Mr. Pierce also rebuts Appellee's argument that the animation was not hearsay.⁴⁰⁷ He argues that if witness testimony is the type of evidence reasonably relied upon by experts, then a police officer qualified as an expert could testify regarding any reports given to him, even witness

398. Reply Brief of Appellant at 18, *State v. Pierce*, No. 92-19316CF10A (Fla. 17th Cir. Ct. 1992), *appeal docketed*, No. 93-01302 (Fla. 4th Dist. Ct. App. Apr. 4, 1993) [hereinafter Reply Brief].

399. *Id.* at 3.

400. *Id.* at 4.

401. *Id.* at 3.

402. *Id.*

403. Reply Brief at 4, *Pierce* (No. 93-01302).

404. *Id.* at 4.

405. *Id.* at 5.

406. *Id.*

407. *Id.* at 6.

statements that claim the defendant was guilty.⁴⁰⁸ Mr. Pierce distinguished the cases cited by Appellee to show the animation was not hearsay, by stating that the underlying data used in those cases was of a scientific or a record keeping nature, and was the kind of evidence reasonably relied upon by experts in the field.⁴⁰⁹ He states that because the animation was based on statements of non-testifying witnesses, the jury should have determined the credibility of the witnesses, not the police.⁴¹⁰ Mr. Pierce concludes that it was error to admit the animation because it was inadmissible hearsay.⁴¹¹

G. Comments

Mr. Pierce is correct in stating that in order to have evidence admitted as *substantive* evidence in Florida, there must be testimony as to the general acceptance in the scientific community.⁴¹² However, in accordance with Judge Speiser's order, the computer animation in this case was admitted solely as *demonstrative* evidence.⁴¹³ The animation was used to visualize Detective Babcock's testimony and aid the trier of fact in understanding his opinion of how the accident occurred. Indeed, Mr. Pierce's second argument in his Initial Brief refers to the fact that the animation served as an illustration of Detective Babcock's testimony. Mr. Pierce's argument is thus weak. The animation was used solely as demonstrative evidence. There was no need to present testimony as to the scientific reliability of the computer program or its general acceptance within the scientific community. It follows that Mr. Pierce's first argument should fail because it lacks merit. Assuming *arguendo* that the animation had been used as substantive evidence, the testimony offered by the State's three expert witnesses, Deputy Bjordalen-Hull, Detective Babcock, and John Suchocki, would have met the requirements for admission of substantive evidence in Florida, as outlined in *Frye*.⁴¹⁴ To meet the general acceptance criteria, the State would have had to show that the computer program utilized to create the animation had achieved general acceptance within the relevant scientific community.⁴¹⁵ Mr. Suchocki, the computer animator, was declared by the court to be an

408. Reply Brief at 6, *Pierce* (No. 93-01302).

409. *Id.* at 7-8.

410. *Id.* at 8.

411. *Id.* at 6.

412. *Frye*, 293 F. at 1014.

413. Order on Computer Animation at 6, *Pierce* (No. 92-19316CF10A); Record at 2342.

414. *Frye*, 293 F. at 1014.

415. *See id.*

expert in forensic animation. His testimony included an authentication of the computer hardware and software. In addition, Mr. Suchocki testified as to the accuracy and reliability of the computer program utilized to create the animation. Moreover, all three of the State's experts verified the accuracy of the input data. Thus, Mr. Suchocki's testimony, in conjunction with that of Detective Babcock and Deputy Bjordalen-Hull, would have overcome the hurdles set out in *Frye*.⁴¹⁶

Mr. Pierce's second argument, that the animation did not accurately portray various aspects of the scene, also lacks merit. While this argument may be his most persuasive, it does not support the contention that it was error for the trial court to admit the animation. First, it must be recognized that the animation was offered as demonstrative evidence to illustrate the opinion of Detective Babcock, an expert in accident reconstruction. Indeed, Detective Babcock testified that the animation fairly and accurately represented his opinion of how the accident occurred. Second, three separate experts testified as to how the input data was collected and entered into the computer. The data was entered from computer to computer, with no human contact, and the chance for human error in data entry was therefore eliminated. In addition, it must be acknowledged that Mr. Suchocki, the State's expert in forensic animation, testified as to the accuracy of the computer program used to create the animation. Therefore, it could be deduced that the animation accurately depicted the testimony presented and fairly represented the scene in question. Demonstrative evidence is admissible if it is relevant and will assist the trier of fact.⁴¹⁷ In order for a court to exclude relevant evidence, its prejudicial effects must outweigh its probative value.⁴¹⁸ Variations in testimony or questions of accuracy go to the weight of the evidence, not its admissibility. Thus, because the animation was relevant and would assist the trier of fact in understanding Detective Babcock's testimony, Judge Speiser correctly admitted it as demonstrative evidence and allowed the jury to decide its credibility.

Although Mr. Pierce contended that the color of the truck was not consistent with witness testimony, the State's evidence contradicted his contention. The State presented scientific evidence, via a paint expert, to prove that the paint fragments recovered from the injured child's clothing were composed of six distinct layers. The expert proved that the six layers of paint matched the paint on the defendant's truck. Even though many of

416. *Id.*

417. FLA. STAT. § 90.401 (1993).

418. *Id.* § 90.403.

the witnesses were only able to testify that the color of the vehicle that hit the children was dark, the expert testimony of the paint expert shows that Mr. Pierce's truck was involved in the accident. As Appellee argued, the yellow light at the scene would make a blue vehicle appear green. It follows that it was not error to depict the truck as blue in the animation. Furthermore, the color of the truck depicted in the animation is almost irrelevant. The purpose of the animation was to illustrate Detective Babcock's opinion of how the accident occurred, not to display every minute detail of the scene.

Mr. Pierce's argument that the lighting and weather conditions were not presented accurately requires consideration of the reason for showing the jury the animation in the first place. The animation was used to illustrate the expert opinion of Detective Babcock. Hence, if the animation had been made dark, its purpose would have been defeated; the jury would not have been able to see it. Although the animation may have presented the jury with a slightly better perspective than Mr. Pierce had the night of the accident, Judge Speiser did not view the animation as being prejudicial. He allowed the jury to hear testimony from the defense regarding the discrepancies in lighting and weather conditions. Consequently, Judge Speiser correctly admitted the animation and let the jury decide its credibility.

In response to Mr. Pierce's argument that the puddle was not accurately depicted in the animation, it must be recognized that the depiction of the size and shape of the puddle in the animation was based upon testimony from witnesses who were present at the scene of the accident before rescue personnel arrived. Even though this information was not collected until approximately six months after the accident, there is no indication that it was not accurate. Indeed, several witnesses who were present at the scene of the accident viewed the animation and testified that it was a fair and accurate representation of the scene and of what occurred. Mr. Pierce's argument is based in part on the testimony of one witness who viewed the video and stated that the puddle was larger than that shown. This kind of variation in testimony would go to the weight of the evidence, rather than its admissibility. Therefore the animation was properly admitted.

Mr. Pierce's argument is also based on the fact that the size and shape of the puddle shown in the animation conflicts with the puddle as depicted in a rough sketch made by a police officer who was present at the scene of the accident. However, on the night of the accident, there were numerous rescue and police vehicles present. Between the time of the accident and the time the police officer made the sketch, the size and shape of the puddle could have been altered if any vehicles drove through it, or if people walked through it. In addition, on the night of the accident, it rained off and on.

Therefore, depending on the time the sketch was made, the size and shape of the puddle could have been altered for a variety of reasons.

Mr. Pierce's third argument, that the animation was created using the testimony of witnesses that did not testify at trial and thus constituted hearsay, can be negated by looking at Florida's definition of hearsay. According to section 90.801(1)(c) of the *Florida Statutes*, hearsay is "[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."⁴¹⁹ Demonstrative evidence does not qualify as hearsay because it is not offered to prove the truth of the matter asserted. Its function is to illustrate expert testimony. It follows that because the computer animation was used solely as demonstrative evidence (to illustrate the testimony of Detective Babcock), it is not subject to the hearsay rule.

If the animation had been admitted as substantive evidence, Appellant's argument might have some merit. However, based on section 90.704 of the *Florida Statutes*, when an expert bases his opinion on facts or data which are of a type reasonably relied upon by experts in the field to support such an opinion, the facts or data need not be admitted in evidence.⁴²⁰ Because all three of the State's expert witnesses testified that the data they used to create the animation was the type that would be reasonably relied upon by experts in the field, the hearsay problem probably would have been avoided.

VI. CONCLUSION

We live in a visual society, where graphics are rapidly becoming the modern way to communicate. This is evidenced by the growth of both television and video, and can be seen in everyday life in such things as pictorial informational signs in public places. The use of computers is another growing trend. Computer technology has revolutionized many professions, from banking to the medical field. Every day new advances in the computer industry are made. Computer technology is clearly the "wave of the future." Even though some are hesitant and fearful of accepting the computer and its capabilities, the trend is growing so rapidly that those who are unfamiliar with its capabilities and uses will be unprepared to cope with the future. The judicial system is experiencing this growth first-hand. Courts all over the country are being forced to determine whether evidence generated by a computer is admissible. Although the movement of

419. FLA. STAT. § 90.801(1)(c) (1993).

420. *Id.* § 90.704.

computer technology into the courtroom has primarily been in civil litigation, it has now infiltrated the criminal courtroom.

Florida courts have not previously decided the issue of whether computer animations are admissible in criminal cases. Authority from other jurisdictions is not overwhelming, but does support the admission of such evidence. For example in *McHugh*,⁴²¹ a criminal case, a New York court admitted a computer animation of a car accident proffered by the defense, analogizing it to a chart or diagram.⁴²² The *McHugh* court established criteria for the admission of the animation as demonstrative evidence.⁴²³ The criteria stated that the animation had to be relevant to the case, had to fairly and accurately reflect the testimony, and had to assist the trier of fact in understanding the issues.⁴²⁴ In essence, this is the same criteria required by the *Florida Statutes* for the admission of all demonstrative evidence. Indeed, it appears to be the criteria that Judge Speiser applied in deciding to allow the animation in *Pierce* as demonstrative evidence.

If the Fourth District Court of Appeal agrees with this criteria, it most likely will decide that it was not reversible error for the trial court to allow the animation as evidence. Affirming *Pierce* on this ground will provide Florida jurors with a more meaningful tool with which to decide cases. In addition, attorneys will enjoy the benefit of having the jurors remember and understand more of the information presented.

Deleterious results may occur nevertheless. First and foremost, the evidence being presented could be erroneous, misleading, or unreliable. Second, indigent defendants or those defendants with limited resources may not be able to fight against such evidence. Thus, a balance must be struck between the positive and potentially negative effects of admitting such evidence. This balance can be achieved through imposing and enforcing strict standards regarding the foundation that must be laid for the admission of such evidence.

This issue is squarely before the Fourth District Court of Appeal at this time. The court's ruling will create a precedent that may control how such evidence will be treated in the future. Until the Supreme Court of Florida or the Florida Legislature speaks on this issue, the Fourth District's ruling will be the leading authority. By affirming *Pierce*, Florida may pave the way for computer animations to become the legal tool of the next decade.

421. *McHugh*, 476 N.Y.S.2d at 721.

422. *Id.* at 722.

423. *Id.* at 723.

424. *Id.*

Florida courts and computer technology can then march hand in hand toward the future.

Jennifer Robinson Boyle