Digital Actors and Copyright - From the Polar Express to Simone

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Digital technology is revolutionizing our ability to manipulate, change and recreate images. We can create new images digitally and we can scan existing film and photographs and record them in digital form. Sound can also be digitized. Once digitally captured material exists, whatever its source, it can be changed in ways not achievable in an analog world. This makes it possible to create digitally created human actors or synthespians.\(^1\)

It may not be possible to create digital actors in all their full humanity. It is difficult to model the structure and function of facial muscles to allow for convincing dramatic performances, especially when the camera focuses in on an actor’s face,\(^2\) or to look into the

\(^1\) The synthespian, an artificially-created ‘human’ actor, is the Hollywood Screen Actors’ Guild’s nightmare. . . . The word—and, yes, it’s an awful one—was coined by LA-based digital effects expert Jeff Kleiser when he created the industry’s first virtual actor (or ‘vactor’) for his 1988 short film Nestor Sextone for President.


\(^2\) Ed Catmull, a computer graphics pioneer and a founder of Pixar has said:

The human face is a unique problem . . . . We are genetically programmed to recognize human faces. We’re so good that most people aren’t even aware of it while they think about it. It turns out, for instance, that if we make a perfectly symmetrical face, we see it as being wrong.

eyes of a digital character and see its soul.\textsuperscript{3} We look at other people all the time, and are familiar with the way they move and behave. We know how their hair, skin and eyes look and move and reflect the light. In a recent study, researchers showed real and digital faces to volunteers to see if they could tell the difference; the volunteers were not fooled.\textsuperscript{4}

Digital actors, however, are useful creatures today, and will become more so with the passage of time and the continued development of technology. Films can be populated with legions of digital extras.\textsuperscript{5} Filmmakers can use a few extras, changing eye color, hair tint, skin tone, and clothing, and create what appears to be a vast crowd with apparently infinite variations.\textsuperscript{6} Digital actors can perform stunts that would be dangerous or impossible for a live actor,\textsuperscript{7} perhaps eliminating the need for stuntmen and women.\textsuperscript{8} Digital technology can take viewers "to places no real actor, or camera setup, could go." Digital children will not be limited by child labor laws.\textsuperscript{9} Wrinkles can be smoothed from or added to a face,\textsuperscript{10} allowing the same actor to

\begin{itemize}
  \item \textsuperscript{3} Scott Ross, President of Digital Domain states:
    
    One of the things that I'm mostly concerned about in terms of virtual actors is that there's been millions of years of experience in our genetic code. And I'm concerned that when you create a close-up of a virtual actor and look into its eyes, that it will take real skill to be able to give that virtual actor soul. And I've not yet seen that.

  
  
  \item \textsuperscript{6} \textit{Here's Looking}, supra note 5.
  
  \item \textsuperscript{7} For example, a girl leaping from a skyscraper in \textit{The Fifth Element}, a character eaten by a tyrannosaurus in \textit{Jurassic Park}. Tyler, supra note 2.
  
  \item \textsuperscript{8} Robert Zemeckis, the director of \textit{The Polar Express}, has been quoted saying "One of the things that's always concerned me and made me a nervous wreck was injuring people .... Stunt people are going to be the first casualties .... Those guys may be out of work but I'm putting to work three digital-rendering artists." Steve Rea, \textit{Moviemakers Go from 'Cut!' to 'Cut and Paste'}, PHILA. INQUIRER, Nov. 7, 2004, at 3, \textit{available at} 2004 WLNR 6716925; see also Giardina, supra note 5.
  
  \item \textsuperscript{9} Huang, supra note 4.
  
  
  \item \textsuperscript{11} Giardina, supra note 5.
\end{itemize}
play a character from youth through old age. Brad Pitt at 60 could perform as Brad Pitt at 20. Anthony Hopkins could play Richard Nixon, looking exactly like Nixon. Dead actors could be returned to life to play new roles in new projects with new co-stars. Marilyn Monroe and Russell Crowe could co-star in a new film. It has been suggested that John Wayne be re-animated. "There is believed to be a great deal of interest in modernizing the western genre while using hardy perennials like Wayne to lend gravitas."

Digitally created characters may become sufficiently realistic to share the screen with live performers.

What is the legal status of these electronic actors—these digital human actors? Unlike traditional cartoon characters, like Mickey Mouse, they are derived in some fashion from human beings. But they are created, in large part, by those employing digital technology. Who owns legal rights to these hybrid creations?

Performers and their heirs may be entitled to protection against the creation or re-use of a digital actor embodying elements of the performer’s identity. The most likely doctrine to provide this protection is the right of publicity, a matter of state law. Although the right of publicity varies widely from state to state, it generally protects against the appropriation of the commercial value of a person’s identity.

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12. See id.
14. Id.
15. See Here’s Looking, supra note 5.
16. Id. Zemeckis says “[The] point where we’ll be able to have a virtual, photo-real character standing next to a photographed [human] character in the same shot, and not be able to tell the difference—that’s going to be the next big breakthrough.” Rea, supra note 8.

§ 46. Appropriation of the Commercial Value of a Person’s Identity: The Right of Publicity

One who appropriates the commercial value of a person’s identity by using without consent the person’s name, likeness, or other indicia of identity for purposes of trade is subject to liability for the relief appropriate under the rules stated in §§ 48 and 49.

§ 47. Use For Purposes Of Trade

The name, likeness, and other indicia of a person’s identity are used “for purposes of trade” under the rule stated in § 46 if they are used in advertising the user’s goods or services, or are placed on merchandise marketed by the user, or are used in connection with services rendered by the user. However, use “for purposes of trade” does not ordinarily include the use of a person’s identity in news reporting, commentary, entertainment, works of fiction or nonfiction, or in advertising that is incidental to such uses.
control the commercial value of his name and likeness and, in some states, other indicia of identity. Much has been written about digital actors and the right of publicity.\textsuperscript{18} The focus of this article, the effect of copyright on their creation and protection, has received less attention.\textsuperscript{19} Unlike the right of publicity, copyright will ordinarily belong to those employing digital technology to create a digital actor, and to those who created any preexisting copyrighted works used in her creation.

Part I of this article will look at digital actors in terms of three paradigms derived from recent films, providing an understanding of some ways in which digital characters can be created and used. The first is the \textit{The Polar Express},\textsuperscript{20} which used a technique called motion or performance capture for all its characters. The second includes two films, \textit{Spider-Man 2},\textsuperscript{21} which created digital doubles for Tobey Maguire and Alfred Molina, and \textit{Lemony Snicket's a Series of Unfortunate Events},\textsuperscript{22} which created a digital double for the baby, Sunny. The third is the film \textit{Simone},\textsuperscript{23} in which a fictional director creates (fictionally) a digital actress. Part II will focus on copyright issues that may arise in the course of creating a digital actor. Part III will look at the way in which copyright can be used to protect a digital actor once she has been created.

\textit{Id.}


I. THREE PARADIGMS

A. The Polar Express—Performance Capture

All the characters in the motion picture Polar Express were created using what has been termed motion capture or performance capture. In motion capture, an actor is fitted with a body suit covered with reflector dots so that a computer can record the details of his movement as he performs the role. Polar Express used an integrated version of motion capture, attaching reflector dots to the performers’ body, face and scalp, allowing digital cameras to capture nuances of the performers’ facial movement. As actors perform on a blank stage, their body and facial movements are precisely recorded and entered into a computer. The captured performance, or generated motion, can then be applied to a computer modeled character, giving the digital character lifelike, subtle movements. In Polar Express, 72 cameras were used to provide coverage for four actors and their facial and body markers—152 facial markers and 48 body markers per actor. Using this technology, anyone can play any role. Indeed, in Polar Express, Tom Hanks played the conductor, the lead boy, the boy’s father, a hobo, and Santa. Only the conductor was recognizably Hanks, but the designers found it useful to mimic some aspects of the actor in other characters. For example, the boy was given eyebrows like Hanks’ because he uses his eyebrows in acting. Using performance capture, the director can have a camera anywhere, rather than positioning it in key places, filming the action, and then moving the camera.

24. This technique allowed actor Andy Serkis to “play” Gollum in The Lord of the Rings films, although his performance was replaced by the digital Gollum in post-production. Shannon, supra note 10.
25. Shannon, supra note 10; Rea, supra note 8.
27. Rea, supra note 8.
30. Id.
31. Rea, supra note 8. Michael Scroggins, director of the computer-animation labs at the California Institute of the Arts comments:
The problem with the technique, at present, is that the characters do not appear truly human. One review said the characters looked laminated or embalmed. If the eyes are the windows to the soul, "the computer animator can[not yet] open that window." Another said that the technique "leaches [Hanks'] trademark charm and everyday humanity off the screen," and that the characters appear remote and zombie-like, with dead eyes and deadened features. A third commented that the computer-generated characters had been criticized for looking "vacant," or "creepy." Nevertheless, performance capture has substantial uses today and may well be improved. The captured animation and the computer modeled characters are capable of being used in new films and other new contexts, together or separately.

B. Spider-Man 2 and Lemony Snicket's a Series of Unfortunate Events—The Digital Clone

Efforts are being made to create digital actors—computer-generated creations that look, move and speak like the actors on whom they are modeled. With living actors, a laser scan can be used to capture an actor's features and body proportions for use in a digital model. Preexisting materials, such as photographs, film footage, recordings of a performer's voice, and the like, can be used to construct a digital model of an actor, living or dead. When Brandon Lee died during the filming of The Crow, digitally modified outtakes

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Normally, when you're shooting a live-action film, you have to place a camera in key positions, film the action, and then move the camera to another position. With The Polar Express, Zemeckis had the ability to put the camera anywhere that he wanted, because everything was done with three-dimensional capture of the actors' performances.

Id.; see also Shannon, supra note 10 (The technique allowed "swooping, soaring camera moves that would have been impossible in reality, with three-dimensional characters roaming freely within epic-scale settings built entirely in the computer.").


34. Rasmi Simhan, ‘Polar Express’ Translates OK to 3-D, SACRAMENTO BEE, Dec. 10, 2004, at 28. The review added that the performance capture method "failed to pick up the tiny but critical shifts in facial muscles that make up even the simplest expressions." Id.

35. I have derived the term "digital clone" from Professor Beard's article. Clones, supra note 18.
from an earlier scene were used to finish the film. Virtual versions of Oliver Reed and John Candy were used to finish scenes in The Gladiator and Wagons East after their deaths.

For Spider-Man 2, the film’s creators wanted realistic digital versions of actors Tobey Maguire and Albert Molina, that could “zoom through the air, around skyscrapers, over trains, and underwater, emoting all the while” and looking indistinguishable from the living actors. The two stars each spent a day in the laboratory. They sat on a “light stage” while four still cameras photographed their heads and faces as they made a variety of expressions, lit from numerous angles. Laser scans and plaster casts were made of their faces and heads, in order to create digital three-dimensional models of their likenesses. These models were manipulated frame by frame, using photographs and footage of the actors, and software was used to calculate lighting changes.

The creators of the film Lemony Snicket’s a Series of Unfortunate Events needed the toddler character, Sunny Baudelaire—played by 18 month old twins—to do things like hang from a table by her teeth and catch a wooden spindle in her mouth. So they created a computer-generated image (“CGI”) double. They could not do this by using a laser scan to create an image of either toddler, since that would have required her to stand perfectly still, without breathing, for thirty-eight seconds. Furthermore, the digital Sunny would be seen in close-up, and it was important “not to draw attention to the fact that the screen-filling image of the toddler smiling at the audience, with the spindle clenched in her teeth” was a digital recreation. Therefore, Industrial Light and Magic took hundreds of still photos

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36. From Stop Motion to Pixelation: The Emergence of the Synthespian, at http://members.lycos.co.uk/monstarred/BMOVIEZ/synthespian.htm? (last visited Apr. 10, 2005).
37. Id.
38. Huang, supra note 4.
39. Id.
40. Id.
41. Id.
42. Id.
44. Id.
45. Id.
and videos of the twins to capture every conceivable facial feature. Images of Sunny would be required to bite things, so the twins were videotaped stuffing toys and other objects in their mouths. These all served as references in creating a computer model of Sunny that adhered to the baby's facial geometry—"the precise size and shape of the eyeballs, the length of her eyelashes, the thickness of her cheek, and her baby-fine hair that curls just so at the nape of the neck." A complex version of motion capture was also used to create the digital Sunny's movement.

It took Industrial Light and Magic six months to complete a scene where Sunny's big brother hurls a wooden spindle at her, and she jumps up and catches it in her teeth, turning forward and smiling, spindle in mouth. As the simulated Sunny's head turned, her eyelids and eyes were slightly adjusted, one twenty-fourth of a second at a time, "so it looked as if the baby was staring into the camera. The eyes—usually a dead giveaway that strips a simulation of its reality—seem to sparkle with life."

It takes a great deal of work, time and creativity to create a single frame embodying a high quality digital character. John Gaeta, the award winning visual effects supervisors on the Matrix movies, has said that it is technically possible to create digital doubles of movie stars, "but only with an enormous amount of finesse and effort. We're just scratching the surface of how to simulate all the nuance and detail of the human face as it emotes and speaks." The technique may not yet, or ever, be ready for sensitive digital performers. But it is clearly useful in many other contexts, including action films and science fiction.

C. Simone—The Composite Actress

In the film Simone, Al Pacino plays a desperate director whose star storms off his set and quits his film. He saves his career by using
software to create a computer-generated actress to complete his film.\textsuperscript{53} She is named Simone from the software that gave her birth—Simulation One.\textsuperscript{54} According to the director’s wife, she has “the voice of the young Jane Fonda, the body of Sophia Loren, and the face of Audrey Hepburn combined with an angel, and the grace of Grace Kelly.”\textsuperscript{55} The role of Simone was actually played by real life actress Rachel Roberts.\textsuperscript{56} In the movie, Simone is computer generated but passed off as real.\textsuperscript{57} In reality, the reverse was true. A real life actress was used to portray a computer-generated one.\textsuperscript{58}

It is not possible to create a real Simone at present. But it may become possible to create a digital actress that cannot be distinguished from the real one. It may not be possible to replicate a passionate human performance, but it may well be possible to create new performers out of bits and pieces of existing ones.

II. COPYRIGHT AND THE CREATION OF A DIGITAL ACTOR

Digital actors\textsuperscript{59} are created by combining elements of human beings and elements created by human beings. Only the latter are protected by copyright. Copyright, which protects original works of authorship fixed in a tangible medium,\textsuperscript{60} will not protect a person’s voice and image. However, if preexisting materials such as photographs, film footage, and voice recordings are used to create a digital actor, and this material is protected by copyright, the potential for copyright infringement exists. The copyright does not belong to the performer; it belongs to the author of these protected materials. Ordinarily, the author is the one who creates the original elements in the copyrighted work—the photographs, film footage or other underlying material.\textsuperscript{61} In some circumstances, particularly when film

\textsuperscript{53} Ray Kurzweil, Reflections on SimOne, at http://www.kurzweilai.net/articles/art0514.html (last visited Apr. 7, 2005).
\textsuperscript{55} Kurzweil, supra note 54. Kurzweil finds that she has none of those qualities. Id.
\textsuperscript{56} Id.
\textsuperscript{57} Id.
\textsuperscript{58} Greydanus, supra note 54.
\textsuperscript{59} Id.
\textsuperscript{60} For the purposes of this article, “digital actor” refers only to digitally created human actors.
\textsuperscript{61} Id. § 201(a).
footage is involved, the film company may be considered the author under the work made for hire doctrine.62

A. Infringement

Protected materials are likely to be used in the creation of a digital clone or a composite actor, such as Simone. It is, therefore, necessary to consider when those materials are infringed. Courts do not use a standard test in deciding whether infringement has taken place and may use the same words and phrases to mean different things.63 However, the differences in the way courts set up their tests for infringement may be more "linguistic . . . than substantive."64 The basic requirements for showing infringement are (1) ownership of the copyright by the plaintiff, (2) copying by the defendant and (3) actionable copying.65 The plaintiff must show that the defendant has copied protected expression from the plaintiff's work, and that there are substantial similarities between the defendant's work and protected elements of the plaintiff's.66 When preexisting materials, such as photographs, films, and sound recordings, are used in creating digital actors, copying exists, in the sense that the actors are derived in some fashion from the earlier works. But is there actionable copying—has anything protected been embodied within the digitally created actor?

In an 1884 case involving a portrait of Oscar Wilde,67 the Supreme Court said that the copyright in a photograph protects original artistic choices such as the selection and pose of the subject, arranging the draperies and other accessories, disposing of light and shade, and evoking the desired expression. Later cases have found other elements protected, including the choice of subject matter, angle of photograph, lighting, the kind of camera, film and lens, and the

62. Id. § 201(b). If a work is made for hire, the employer or other person for whom the work is prepared is considered the author. A work is made for hire if it is "(1) a work prepared by an employee within the scope of his or her employment" or "(2) a work specially ordered or commissioned for use . . . as part of a motion picture or other audiovisual work . . . if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire." Id. § 101.
64. Id. § 14.2.
66. Id. § 13.03[B][2].
time and place where the picture is taken. The copyright in a raw videotape will protect such elements as the selection of camera, lenses, angle, the choice of height and perspective from which the tape is made, and how long the taping is continued. But if protected material is not taken, there is no infringement.

Creators of a digital clone may not need to make use of any particular costume, pose, editing, or other protected element from a film or photograph. They will seek to replicate as closely as possible the elements of a human being, rather than those created by a human being. The arrangement of facial features and expressions, and the movement of face and body muscles are not themselves copyrightable. The digital performer residing in a computer need not embody elements from underlying works that are protected under copyright. Although the movement of the body and face of the actor may be created by studying or using copyrighted film, it is unlikely that the end results will take protected expression from the film. Rather, it will embody elements of the human actor. A composite actor, such as Simone, is even less likely to embody protected expression.

In performance capture, there will seldom be a need to capture a voice. The digital characters can be voiced independently. But digital clones must sound like, as well as look like, the original, and composite actors may contain elements of a variety of voices. This is unlikely to be a problem in films like Spider-Man 2 or Lemony Snicket, as the voice will be provided by the actor being cloned. But if actors are re-created to perform in new films, or composite actors are created, the issue of voice can become an important one. Filmmakers can attempt to recreate the voice by using existing materials, such as sound recordings or motion picture sound tracks, or by using a sound-alike.

The copyright in a sound recording is infringed only if there is recapture of the actual sounds fixed in the recording, so the use of a sound-alike would not infringe a sound recording copyright.

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69. L.A. News Serv. v. Tullo, 973 F.2d 791 (9th Cir. 1992).

70. Williams v. Crichton, 84 F.3d 581, 588–89 (2d Cir. 1996); Kouf v. Walt Disney Pictures & Television, 16 F.3d 1042, 1044 n.2 (9th Cir. 1994); Walker v. Time Life Films, Inc., 784 F.2d 44, 48 (2d Cir. 1986), cert. denied, 476 U.S. 1159 (1986).

71. Casting Call, supra note 18, at 117–19; Clones, supra note 18, at 1193–95.

However, the sound track of a motion picture is not a sound recording, and the use of a sound-alike could theoretically be infringing. However, it would be a great—and unwise—stretch to find that imitating a voice from one or more sound tracks is a taking of protected expression.

Recapture of the actual sounds is another matter. If the sounds are taken from a motion picture sound track, the central question is likely to be how much—and how much that is recognizable—has been taken. If, however, the sounds are taken from a sound recording, it is possible that even a small, unrecognizable taking would be considered infringing. In Bridgeport Music, Inc. v. Dimension Films, the defendant copied a two-second sample from the plaintiff's sound recording, lowered the pitch, and looped and extended it to 16 beats. The court held that any digital sampling would be infringing, however small or unrecognizable. Although the case involved the sampling of a musical sound recording, there is nothing in the case that indicates a different rule for the taking of speech.

The Bridgeport holding is troubling, both in terms of statutory interpretation and policy. The decision was based in large part on the court's reading of section 114(b) of the Copyright Act, which states: "[t]he exclusive right of the owner of the copyright in a sound recording . . . is limited to the right to prepare a derivative work in which the actual sounds fixed in the sound recording are rearranged, remixed, or otherwise altered in sequence or quality." This, said the court, means that "a sound recording owner has the exclusive right to 'sample' his own recording." Section 114, however, provides a limitation on a copyright owner's exclusive rights, not a grant of additional rights. Nothing in that section provides a reason to avoid the normal inquiry into whether there has been a substantial taking of

73. 17 U.S.C. § 101 ("‘Sound recordings’ are works that result from the fixation of a series of musical, spoken or other sounds, but not including the sounds accompanying a motion picture or other audiovisual work . . . ").
74. 383 F.3d 390 (6th Cir. 2004), reh'g granted, 401 F.3d 647 (2004).
75. Id. at 394.
76. Id. at 398–99.
77. Id. at 396 ("[O]ur opinion is limited to an instance of digital sampling of a sound recording protected by a valid copyright."). Sound recordings can embody not only musical works, but also spoken words, such as a reading of poetry or a play.
78. 17 U.S.C. § 114(b) (2000); see also Bridgeport Music, Inc., 383 F.3d at 398 n.8.
protected expression. The court also said that minimal takings from a sound recording should be treated differently from minimal takings from a musical composition, because sampling even a small part of a sound recording takes something of value, and because the taking is a physical rather than an intellectual one. But the taking is no more physical than printing a book, a music score, or a work of art. All involve some form of copying. Nor is it clear that there is some particular artistic value in a small portion of a sound recording, compared to a small portion of some other work.

B. Intermediate Infringement and Fair Use

Even if the digitally created actor is not herself infringing, the process of creating her might involve the use of copyrighted material. A database like the one (fictionally) used in Simone, or one used to create a digital version of a real performer, is likely to use copyrighted material. Existing photographs and film footage may be used to create a digital clone. If copies of an existing work are made in the process of creating the digital performer, the exclusive reproduction right may be infringed, even if the final product does not embody any protected material. Intermediate copying is still copying.

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80. The court does quote law review articles supporting its point of view. See Jeffrey R. Houle, Digital Audio Sampling, Copyright Law and the American Music Industry: Piracy or Just a Bad “Rap”? , 37 LOY. L. REV. 879, 896 (1992); Susan J. Lathan, Newton v. Diamond: Measuring the Legitimacy of Unauthorized Compositional Sampling—A Clue Illuminated and Obscured, 26 HASTINGS COMM. & ENT. L.J. 119, 125 (2003). This interpretation seems counter to the legislative history of section 114. The House report states that infringement of a sound recording takes place “whenever all or any substantial portion of the actual sounds that go to make up a copyrighted sound recording are reproduced in phonorecords by repressing, transcribing, recapturing off the air, or any other method ....” H.R. REP. NO. 94-1476, at 106 (1976).


82. See 2 NIMMER, supra note 65, § 8.02[C].

Reproduction without Public Distribution.

One who makes infringing copies or phonorecords of a work infringes the copyright owner’s reproduction right under Section 106(1), even if he does not also infringe the Section 106(3) distribution right .... Therefore, subject to the privilege of fair use, and subject to certain other exemptions, copyright infringement occurs whenever an unauthorized copy or phonorecord is made, even if it is used solely for the private purposes of the reproducer, or even if the other uses are licensed.

Id.

83. Alcatel USA, Inc. v. DGI Techs., Inc., 166 F.3d 772, 787 n.54 (5th Cir. 1999); Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510 (9th Cir. 1993), amended by No. 92-15655, 1993 U.S. App. LEXIS 78 (9th Cir. Jan. 6, 1993); Walker v. Univ. Books, Inc., 602 F.2d 859 (9th Cir. 1979); Tiffany Design Inc. v. Reno-Tahoe Specialty, Inc., 55 F. Supp. 2d 1113 (D. Nev. 1999);
For example, in *Walt Disney Productions v. Filmation Associates*, Disney alleged that Filmation had used copyrighted materials from its film *Pinocchio* in creating a script, a story board, models and designs for use in creating *The New Adventures of Pinocchio*, a film that had not yet been completed and readied for distribution. Filmation argued that, in the absence of a finished film, nothing exists that could infringe any of Disney’s copyrights. The court disagreed, stating that the articles created by Filmation were copies and that copyright “prohibits the creation of copies, even if the creator considers these copies mere interim steps toward some final goal.” In *Tiffany Designs v. Reno-Tahoe Specialty*, the plaintiff’s copyrighted work was an artistic depiction of the Las Vegas Strip and its surrounding environs, created by enhancing photographs of the strip using the computer program Photoshop. The defendant scanned much of the image into its computer, and then manipulated and changed it. The court found that the creation of this intermediate copy was infringing, even if the resulting work was not.

Although intermediate copying is still copying, it could be considered fair use. In *Sega Enterprises v. Accolade*, Accolade


85. Id. at 874.
86. Id. at 875.
87. Id. at 876.
89. Id. at 1115–16.
90. Id. at 1116.
91. There was an additional issue in the case, based on the fact that the plaintiff’s work was scanned into the random access memory of the defendant’s computer, where it resided temporarily as a precursor to manipulation of parts of that image. Id. at 1121. Citing MAI Systems Corp. v. Peak Computer Inc., 991 F. 2d 511, 518 (9th Cir. 1993), the court held that the input of copyrighted material, even briefly, into RAM, amounts to actionable copying. *Tiffany Design, Inc.*, 55 F. Supp. 2d at 1121. The court also noted, however, that decisions basing liability on the creation of digitized intermediate copies, in order to manipulate or modify them, could potentially chill artistic expression. Id. at n.5. “[M]ultimedia art . . . could be infringing if any image briefly shown while morphing into another image, or transforming in response to the viewer’s choices, is a copy of a copyrighted work.” Id. (quoting Jeanne English Sullivan, *Copyright For Visual Art in the Digital Age, A Modern Adventure in Wonderland*, 14 CARDOZO ARTS & ENT. L. J. 563, 586 (1996)).
... the fair use of a copyrighted work,... for purposes such as criticism, comment, news reporting, teaching..., scholarship or research, is not an
copied Sega's entire videogame program into human readable form. The court found that this copying, in order to gain access to the program's unprotected aspects, and as an intermediate step in discovering how to create an uninfringing game that could be played on the plaintiff's game console, was fair use. Copying protected material as an intermediate step in creating a digital actor might also be considered fair use. However, in Tiffany Designs, the court held that the defendant's scanning of the plaintiff's depiction of the Las Vegas strip into a computer, as an intermediate step in creating its own competing product, was not fair use. The court did not consider the intermediate nature of the copying of significance to the analysis.

The fair use doctrine has rightly been termed "so flexible as virtually to defy definition," and must be considered on a case by case basis, making general statements and predictions nearly impossible. This is particularly true when we are considering a new sort of creation. Nevertheless, the four factors set out in section 107 provide guidance in determining whether fair use will exist when digital actors are created.

The first factor is the purpose and character of the use. In Sega, the court found that this factor favored the defendant. Although the

infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include—

(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;

(2) the nature of the copyrighted work;

(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and

(4) the effect of the use upon the potential market for or value of the copyrighted work.

Id.

93. 977 F.2d 1510 (9th Cir. 1993).

94. Id. at 1514.

95. Sega developed and sold Genesis console and video game cartridges that are used in the console. Accolade wanted to sell independently created, uninfringing video game cartridges for use in Sega's game console. Accolade's games could not be played on the Genesis console unless its games were compatible. In order to accomplish this, it reverse engineered Sega's video game programs to discover what was required to make its game compatible with Sega's console. In the process, Accolade transformed the machine-readable object code contained in Sega's game cartridges into human readable source code, using a process called disassembly or decompilation. Id. at 1514.

96. Id. at 1520.


copying served an eventual commercial use, which is less likely to be fair than a noncommercial use, the copying "was . . . intermediate . . . only and thus any commercial 'exploitation' was indirect or derivative."99 The challenged use served a public interest, an increase in the number of independently designed video game programs.100 In Tiffany Designs, however, the court found intermediate copying to be exploitative.101 But in making that decision the court also said, "Defendant has conceded that its use of the copyrighted material in its finished product was for commercial purposes."102 Although the court said that it was not deciding whether the finished product was infringing, the case is filled with references to the inclusion of the plaintiff's copyrighted material in that product. The result might be different in a case where a digital actor was clearly not infringing in and of itself. Any commercial exploitation could be considered indirect and derivative, and likely to increase the number of independently created digital actors.

In Campbell v. Acuff-Rose Music, Inc., the Supreme Court said that a central issue to be determined under the first fair use factor is whether the new work is "transformative"—whether the new work merely supersedes the objects of the original creation "or . . . adds something new, with a further purpose or different character, altering the first with new expression meaning or message."103 Unfortunately, courts have been far from consistent in interpreting "transformative." One case found that the creation of a trivia quiz book that tested its readers' recollection of scenes and events from the Seinfeld television series was not transformative.104 But another said that copying an entire photograph was transformative because its original use was for a modeling portfolio and the defendant used it in a news article.105 The creation of a digital actor might well be considered to be transformative. The intermediate copying itself might not be, but the ultimate creation would be something new, with a further purpose or different character from the copyrighted works that are used in creating it.

The second factor, the nature of the copyrighted work, favored the defendant in Sega. The Sega court noted that "[w]orks of fiction

99. Sega Enters. Ltd., 977 F.2d at 1522.
100. Id. at 1523.
102. Id.
104. Castle Rock Entm't, Inc. v. Carol Pub'l'g Group, Inc., 150 F.3d 132 (2d Cir. 1998).
receive greater protection than works that have strong factual elements, such as historical or biographical works.” Creative works receive more protection than informational or functional works. In Sega, the work at issue was a functional one, a computer program. The works used in the creation of a digital actor will tend to be creative, making it likely that this factor will not favor the defendant.

In considering the third factor, the amount and substantiality of the portion used, the Sega court said that the entire work had been copied, but this was of little weight where the ultimate, rather than intermediate, use was very small. The amount and significance of the material used in creating a digital actor is likely to vary from case to case, but if the ultimate, rather than intermediate use is small, it can be argued that it is of little weight.

The final factor is the effect on the potential market for the copyrighted work. In Sega, the court found that this factor favored the defendant, as the copying was to make independent creative expression possible, not simply to exploit another’s creative efforts. Even if Sega lost sales to Accolade, this would be based on competition from uninfringing works. “[A]n attempt to monopolize the market by making it impossible for others to compete runs counter to the statutory purpose of promoting creative expression and cannot constitute a strong equitable basis for resisting the invocation of the fair use doctrine.” The same argument might be made on behalf of the creation of digital actors. On the other hand, Campbell made it clear that it is necessary to consider the effect, not only on the original market, but also on the market for derivative works. Digital actors could be considered a derivative market. But the cases focusing on

106. Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1524 (9th Cir. 1993).
108. Sega Enters., Ltd., 977 F.2d at 1514.
109. Id. at 1526–27. This factor was found to favor the plaintiff, but only slightly.
110. But see Tiffany Design Inc. v. Reno-Tahoe Specialty, Inc., 55 F. Supp. 2d 1113, 1123 (D. Nev. 1999). The court did not consider the intermediate nature of the use, saying that the defendant scanned the plaintiff’s entire work, and that this factor favored the plaintiff.
111. Sega Enters. Ltd., 977 F.2d at 1523.
112. Id. at 1523–24.
113. But see Tiffany Design Inc., 55 F. Supp. 2d at 1123. The undistributed scanned image would not itself affect the plaintiff’s market, but incorporation of its components into the defendant’s finished products might have great effect.
the issue of potential or derivative markets\textsuperscript{115} have involved competition from a work that would itself be infringing, in the absence of fair use, not intermediate copying. \textit{Tiffany Design} said that the undistributed scanned image would not itself affect the plaintiff’s market, but “incorporation of its components into Defendant’s finished products might have great effect upon commercial demand for Plaintiff’s depictions of the Las Vegas Strip.”\textsuperscript{116} This leaves open the question of what the result would be if the plaintiff’s components were not incorporated into the defendant’s finished product.

It is not possible to predict with any certainty how fair use will be applied in a new situation, such as the creation of digital actors. However, the transient copying of reference materials, in order to manipulate them and create a digital actor that is not itself infringing, is more likely to be considered fair use than creating a permanent program and database such as the one used (fictionally) in \textit{Simone}. A \textit{Simone} style program/database is capable of competing in a potential market with similar products created or authorized by the owners of the copyrights in the underlying works. Commercial use is direct. Temporary copying of copyrighted materials in order to create a digital actor, however, involves indirect and derivative commercial exploitation and serves the public purpose of increasing the number of digital actors that are not themselves infringing. The owners of copyright in works that are used in the process of creating digital actors should not ordinarily be permitted to control the creation and use of digital actors that do not themselves embody the copyright owner’s creative expression, and do not, therefore, exploit the copyright owner’s creative efforts.\textsuperscript{117}

\begin{itemize}
\item \textsuperscript{115} See, e.g., Mattel, Inc. v. Walking Mountain Prods., 353 F.3d 792 (9th Cir. 2003); Ty, Inc. v. Publ’ns. Int’l Ltd., 292 F.3d 512 (7th Cir. 2002), \textit{cert. denied}, 537 U.S. 1110 (2003); Castle Rock Entm’t, Inc. v. Carol Publ’g Group, Inc., 150 F.3d 132 (2d Cir. 1998); Princeton Univ. Press v. Mich. Document Servs., Inc., 99 F.3d 1381 (6th Cir. 1996) (en banc) \textit{cert. denied}, 520 U.S. 1156 (1997); Am. Geophysical Union v. Texaco, Inc., 60 F.3d 913 (2d Cir. 1994). In the \textit{Ty} case, Judge Posner said:

\begin{quote}
copying that is complementary to the copyrighted work (in the sense that nails are complements of hammers) is fair use, but copying that is a substitute for the copyrighted work (in the sense that nails are substitutes for pegs or screws), or for derivative works from the copyrighted work . . . is not fair use.
\end{quote}

\textit{Ty, Inc.}, 292 F.3d at 517.

\item \textsuperscript{116} \textit{Tiffany Design Inc.}, 55 F. Supp. 2d at 1124.

\item \textsuperscript{117} To the extent that \textit{Tiffany Designs} would require a different result, I disagree with the decision. In that case, however, although the court did not determine that the defendant’s final product was infringing, it did state, in discussing fair use, that copyrighted material was used in
This control might also be avoided by creating what would amount to a judicially imposed compulsory license. The remedy granted to the owner of the copyrighted material used in creating a digital actor could be limited to monetary payments, with no injunction being granted. The copyright owner would be paid, but would not be able to control or prevent the creation of digital actors. The Supreme Court has indicated some support for the idea that the goals of copyright law are not always best served by granting injunctive relief.\textsuperscript{118} However, the creation of such an "ersatz species of compulsory license" would be an exceptional step\textsuperscript{119} and would be difficult to structure and administer.

III. COPYRIGHT AND THE PROTECTION OF THE DIGITAL ACTOR

Once a digital actor has been created, how can she be protected against use by others? Someone may want to use a digital actor appearing in one film in another film—or on soap, belt buckles, mugs, clothing, action figures, cartoons, or video games. In considering protection for digital actors, the closest analogy in existing cases is the protection given to fictional characters, particularly those appearing in audiovisual works such as films. A human character in a film is created partly by the filmmaker, partly by the actor, and partly by the physical characteristics possessed by the actor. Similarly, digital actors are created by combining elements of human beings and elements created by human beings.

Digital actors appearing in films, like fictional characters, are elements of a copyrightable work. They are capable of moving from one story to another, changing, growing, and undergoing new experiences. A fairly complex body of law has developed around the question of when a fictional character is protected by copyright, apart from the work or works in which it has appeared—when a character alone, separate from any particular plot, is protected against copying by another.\textsuperscript{120} Unfortunately, the cases provide standards that are conflicting, confusing and difficult to apply.

Visually depicted characters and characters appearing in literary works, such as books, have been treated differently. Cartoon

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the defendant's finished product. \textit{id.} at 1123–24. The court did not consider whether that material was protected expression.


119. 4 \textsc{Nimmer}, supra note 65, at § 14.06[B].

characters, like Mickey Mouse, are readily found to be protected under copyright. Because they are visual, they have physical as well as conceptual qualities. The pictorial nature of a visual character provides something specific to look at, a dominant impression against which the similarity of another character can be judged. Literary characters, created by word pictures, are seen not with the eyes but with the mind. The character in your mind is unlikely to be identical to the one in mine. Two basic tests have been applied to literary characters. The first, which has become known as the development test, asks whether a character is sufficiently distinctive or well-developed to command protection. The second, created by the Ninth Circuit in the Sam Spade case, asks whether the character constitutes the story being told or is simply a chessman in the game of telling the story. At least in theory, the story being told test is tougher than the development test. For example, Sherlock Holmes might be considered sufficiently developed for protection under Nichols v. Universal Pictures, but not to constitute the story being told, as he has appeared in a variety of different stories. If rigorously applied, only a character appearing in a “story devoid of plot” would be protected.

Courts are still wrestling with protection for characters in audiovisual works, where the character lies somewhere on the spectrum between the cartoon and the literary. In two cases in the Ninth Circuit, home of the Sam Spade case, courts sought to come up with an applicable standard to apply in deciding whether Rocky and James Bond were protected characters. Both courts found the task filled with uncertainty.

In the Rocky case, the court said that the “story being told” test seemed inapplicable to the visually depicted characters in the first three Rocky Films, but out of “an abundance of caution” he would determine their protection under that test as well as the “development” test. Turning first to the “development” test, the

124. Id.
125. Id.
126. Id. at 755 n.11.
127. Id. at 1166.
court said that the Rocky characters were one of the most highly delineated groups of characters in modern American films. The interrelationships and development of the characters Rocky, his wife Adrian, his brother-in-law Paulie, and the boxer Apollo Creed were central to the three previous Rocky films. Rocky Balboa "is such a highly delineated character that his name is the title of all four of the Rocky movies and his character has become identified with specific character traits ranging from his speaking mannerisms to his physical characteristics." In considering the "story being told" test, the court said the Rocky characters were so highly developed and central to the three earlier Rocky movies that they constituted the story being told. The films concentrated on the development and relationships of the characters, rather than on intricate plots.

In the James Bond case, the plaintiffs claimed that the copyright in the character, as expressed and delineated in their sixteen James Bond films, was infringed by the appearance of a Bond-like character in the defendants' Honda commercial. The court said that "[t]he law in the Ninth Circuit is unclear as to when visually-depicted characters such as James Bond can be afforded copyright protection." The defendants claimed that James Bond was not the "story being told, [having] changed enormously from film to film, from actor to actor, and from year to year." The court did not separate what it called the "character delineation" and "story being told" tests. Instead it stated that James Bond is protectable under either test. "Like Rocky, Sherlock Holmes, Tarzan, and Superman, James Bond has certain character traits that have developed over time through the sixteen films in which he appears." The fact that many actors can play Bond shows that he is a unique character whose qualities remain constant even as his actors change. The court concluded by saying that audiences "do not watch Tarzan, Superman,

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128. Id.
129. Id.
130. Id.
131. Id. at 1167. However, the Ninth Circuit had rejected the idea that a group of characters can be protected if together they constitute the whole story. Walt Disney Prods., 581 F. 2d at 755 n.11.
133. Id. at 1291.
134. Id. at 1295.
135. Id. at 1296 (quotations omitted).
136. Id.
137. Id.
Sherlock Holmes, or James Bond for the story, they watch these films to see their heroes at work.\footnote{138}

These district courts in the Ninth Circuit exercised a great deal of ingenuity in avoiding the rigors of the “story being told” test. Under that test, both Rocky and James Bond would likely be unprotected, as neither the James Bond nor Rocky films can be considered stories devoid of plot. Recognizing that this would be an undesirable result, these courts considered the relative importance of the characters and the plot to the film, finding that the Rocky films concentrated on the development and relationships of the characters, rather than on intricate plots, and that people watch Bond films to see Bond at work. These courts’ struggles demonstrate that we currently lack the legal tools to deal with audiovisual characters intelligently.\footnote{139} The situation is likely to be even more problematic with the complex creations that are digital actors. They do not fit either the cartoon character or literary character model. Like literary characters, they often exist within fairly complex stories and speak at some length. But they can be seen, and thus have a visual component. They have voices which can be heard, and thus, have an aural component as well.

Some digital actors can appropriately be treated like cartoon characters. For example, if the visual aspects of a digital actor, created by performance capture, are created by the designer, the copying of original visual elements ordinarily should be considered infringing. But the same is not true for a digital clone or the Conductor in \textit{The Polar Express}. Like Rocky and James Bond, their distinctive visual and aural elements are largely determined by the appearance, voice, and mannerisms of the actors portraying them. These elements are not the original creations of the copyright owner, and physical similarities alone should not be considered sufficiently substantial for infringement. The appearance of this form of digital

\footnote{138. \textit{Metro-Goldwyn-Mayer, Inc.}, 900 F. Supp. at 1296. In another case, \textit{Titan Sports, Inc. v. Turner Broad. Sys., Inc.}, 981 F. Supp. 65 (D. Conn. 1997), the court found that the Titan Sports-created wrestling “character,” Diesel, played by Kevin Nash, was sufficiently delineated to avoid a motion to dismiss. The character wore a goatee beard and moustache, black leather pants, a black leather vest decorated with silver studs and tassels, a black low cut tank top shirt, a black leather glove on the right hand, black elbow pads, black wrist bands, sunglasses and black leather boots and was different from those previously portrayed by Nash.}

\footnote{139. The situation was not clarified by \textit{Rice v. Fox Broad Co.}, 330 F.3d 1170 (9th Cir. 2003), where the Ninth Circuit said “[w]hile characters are ordinarily not afforded copyright protection . . . , characters that are ‘especially distinctive’ or the ‘story being told’ receive protection apart from the copyrighted work.” \textit{Id.} at 1175. The court did not explain the circumstances in which either test would be applied. The Seventh Circuit has said that the Sam Spade decision is wrong. Gaiman v. McFarlane, 360 F.3d 644, 660 (7th Cir. 2004).}
actor should be only one part of a complex of characteristics to be considered in deciding whether the actor is protected and whether it has been infringed. It would be helpful if courts placed less emphasis on determining, in the abstract, whether a character or digital actor is protected, and more emphasis on comparing the characters in the allegedly infringed and infringing works to see if there has been a substantial taking of protected expression.

CONCLUSION

The law moves more slowly than technology, particularly in the 21st Century, when technology is developing at a blindingly fast pace. Nowhere is this more likely to be the case than in the creation and protection of digital actors. In dealing with the protection of digital actors, we need a more contemporary, flexible, and workable approach than the ones (purportedly) used in protecting fictional characters. In dealing with the creation of digital actors, infringement and fair use should be interpreted with some liberality, so that new technology and creation are not unduly inhibited.