

PHOTOGRAPHIC EVIDENCE, NAKED CHILDREN, AND
DEAD CELEBRITIES: DIGITAL FORGERY AND THE LAW

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Pictures never lie, right? Not anymore.¹

Introduction

The ease with which photographic images may be manipulated is not a new challenge for the law. Photography is inherently incapable of reproducing reality exactly: From the start, it has sliced three dimensions of space as well as time into two-dimensional stills.² Further, virtually since the invention of the medium, photographers actively have sought to create images that distort reality, instead of accurately reflecting its contours.³ At least as long ago as the McCarthy hearings, photographs presented in legal proceedings later were proven not to be reliable depictions of people and events, but instead to have been “doctored.”⁴ Even still,

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¹Sean P. Means, *Altered Images; Photo Technology Creates A Reality That's Not There; Photos: The Ethics of Manipulation*, SALT LAKE TRIB., Mar. 3, 1997, at B1.

²See *infra* text accompanying note 32.

³See *infra* text accompanying notes 94-97.

⁴Ray Jenkins, Special Counsel in the 1954 Army-McCarthy hearings, introduced a photograph of Secretary of the Army Robert Stevens posed alone with Private David Schine. Stevens' attorney, Joseph Welch, demonstrated that the photograph had been doctored, omitting two other figures. See Michael Straight, TRIAL BY TELEVISION 40-47 (1954). Joseph McCarthy also previously masterminded the publication of a tabloid in October 1950, supposedly distributed by “Young Democrats for Butler,” attacking Democratic Senator Millard Tydings: A front-page composite photograph depicted Tydings and ex-U.S. Communist Party leader Earl Browder in friendly

great trust has continued to be placed in photographs—both by average viewers,⁵ and by the law.⁶ But their manipulability has achieved a new prominence as well as significance in the rising era of image-processing software and the Internet; technology now provides relatively simple and inexpensive, as well as potentially undetectable, means by which to alter and disseminate photographic images.⁷

This Paper will examine the circumstances and consequences of such “digital forgery” for the law. Part I reviews the history and current status of photography, both fact and theory, under the law, as well as considers how the law of evidence may adapt to the challenges posed by digital forgery. The status of photographs as evidence has long been settled. They are admitted with minimal authentication, because they are regarded as generally trustworthy; most states even allow for self-authentication. But it was not always so—and current law does recognize that, even absent an intent to deceive, photographs still may not depict reality entirely accurately. Yet, there are few safeguards, forgery being regarded as uncommon and discernible. Law should not behave like an anecdotal ostrich. Theorists have warned of the potential consequences of digital forgery—and have put forward proposals as to how the law of evidence may be reformed to account for the explosive rise of digital photography and the associated image-processing software that facilitates the manipulation of photographic images.

Part II considers the one area of law in which substantial attention so far has been given to the potential of digital forgery: child pornography. But that attention best can be described as Luddite, however. The Child Pornography Prevention Act of 1996 outlawed simulated child pornography. But harm to an actual child is a

conversation. *See* Jack Anderson & Ronald W. May, MCCARTHY: THE MAN, THE SENATOR, THE “ISM” 297-99 (1952).

⁵*See infra* text accompanying notes 33, 154, 513-514, 738.

⁶*See infra* text accompanying notes 181, 196.

⁷*See infra* text accompanying notes 238-247.

pillar of current child pornography law and jurisprudence, the justification for its exclusion from the protection of the First Amendment; the production and dissemination of simulations was explicitly reserved. But child pornography is a specter that can whip the public into a frenzy as well as win politicians votes—and now has been combined with a technological bogeyman. If secondary effects justify the Act, the entire digital medium is under threat. The law could—and if it serves political purposes, probably would—prohibit the use of technology to create works purely of the imagination, endangering not merely simulations of naked children—which, one should note, can comprise far more than child pornography—but a vast range of valuable works of art and literature.

Part III turns our attention to one of these other uses of the digital medium that could be under threat: the depiction—indeed, the effective resurrection—of dead celebrities. If today one can create virtually undetectable photographic forgeries, tomorrow one will be able to do so for motion pictures. The ability to bring celebrities back from the grave requires a re-evaluation of the intellectual property rights currently granted by the law. Valuable additions could be made to our cultural stock if control over images did not long remain limited to rightsholders and the heirs of celebrities. But celebrities also could be made to do things they would never do if still alive, depictions that neither they nor that estates would desire to see produced. One means by which to adjust intellectual property to account for these two forces is by tweaking existing legal regimes, such as publicity rights. But an alternative may be to create new law, such as by expanding on current trends and developments in the field of copyright law.

Finally, the Conclusion seeks to consider briefly how digital forgery can be placed in context with other technological revolutions to which law historically has responded. In general, the First Amendment has been examined anew for each new medium of communication; the result all too often has been a skewed allocation of

rights and an unnecessary inhibition of the development of new technologies. Digital imaging is not strictly a new medium, but its possibilities are expansive. Yet the record of rushes to judgment on other contexts cautions that there is a risk that it may be crippled at birth; the injury may already be under way. Whether this ultimately will happen may depend on whether courts look for guidance to developments in *Free Speech Coalition v. Reno*⁸ or *Reno v. ACLU*.⁹

I. Photographic Evidence

*It's like unleashing the atom bomb. You can't un-invent it. It's there. The key is how it is applied, with what kind of care and consideration.*¹⁰

Photography is now an accepted part of daily life and legal proceedings, to an extent unimaginable even a generation ago, when the admissibility of color photographs was still a live issue.¹¹ This familiarity may have desensitized the public and the courts to the fact that photographs are not in themselves reality.¹² Indeed, although theorists and courts are well aware of the fallibility of images produced by photography, authentication has remained a low hurdle to their admission into evidence.¹³ Further, if the current trust placed in photographs is built on a cracked foundation, the emergence of digital imagery has razed it entirely. Yet there has been virtually no blackletter or doctrinal response. Perhaps

⁸No. 97-00281, 1997 WL 487758 (N.D. Calif. Aug. 12, 1997). *See infra* text accompanying notes 436-449.

⁹117 S.Ct. 2329 (1997). *See infra* text accompanying notes 503, 966.

¹⁰Jean Davidson, *Newspapers' Credibility Losing Focus? Altered Photographs Raise Questions*, CHICAGO TRIB., Feb. 20, 1994, at 6 (*quoting* Arthur Hochstein).

¹¹*See infra* note 217.

¹²*See infra* text accompanying notes 150-157.

¹³*See infra* text accompanying note 160.

only a travesty of justice will spur action—but few would wish for such an event, nor is a response so inspired generally well-considered or structured.¹⁴

A. Photography: Fact and Theory

Perhaps the most visible discussion of photographic forgery in recent years arose during the civil trial of O. J. Simpson. The defense argued that photographs showing Simpson wearing Bruno Magli shoes were forgeries.¹⁵ Robert Groden testified that the frame on the Simpson image was longer than any others on the roll, as well as in the first position on the roll—the most convenient place to try to place a forgery; his testimony also relied on color balance and alignment.¹⁶ But attorney Peter Gelblum countered that Groden was a high school dropout who has never taken a course in photography, and argued that the “anomalies” Groden described were actually innocent imperfections that occur in most rolls of film.¹⁷ The issue of forgery, for the most part, then faded from the public eye again. But questions do linger. Photography expert Gerald Richards testified that Groden’s claims ignored facts “most first-year photo students would know.”¹⁸ But what should a court—much less a lay factfinder—know about photography?

¹⁴*Cf. infra* text accompanying note 610.

¹⁵*See, e.g.,* Jonathan T. Lovitt & Richard Price, *Focus back on shoes in O.J. trial*, USA TODAY, Jan. 15, 1997, at 3A.

¹⁶*See* Linda Deutsch, *Photo of Simpson in Magli shoes probably forged, technician says*, BOSTON GLOBE, Dec. 19, 1996, at A6.

¹⁷*See* Stephanie Simon, *Simpson Photo Analyst Assailed as Unreliable: Trial: Despite withering attack, witness refuses to back down from his stance that picture showing defendant in Bruno Magli shoes is fake*, L.A. TIMES, Dec. 21, 1996, at B3. Groden conceded that a thin blue line between the edge of the photo negative and the film sprockets appeared on at least two other negatives, and “could be” caused by a scratch in the camera rather than by manipulation of the negative. *See id.*

¹⁸Deutsch, *supra* note 16, at A6.

Photography is derived from two Greek words, *graphos* and *phos*, that together mean “writing with light.”¹⁹ Photography, broadly defined, includes any the recording by chemical, thermal, electrical, or electronic means of scenes or objects formed by some type of radiant energy:²⁰ Photographs thus are not just created by visible light but also by x-rays and infrared light, among others.²¹ Most methods of photography use a lens to focus rays at or near a focal point, forming a real image that then can be preserved.²² The most traditional method of photographic preservation is based on light-sensitive silver salts, although other light-sensitive chemicals exist.²³ Silver salts remain the most common means in use today, capturing a latent or invisible image that later can be developed chemically or thermally,²⁴ although the recording of images as impulses on a magnetic medium is of increasing importance and prominence.²⁵

Photographs long have been assumed to be like evidence left at the scene of a crime—the product of causal, not intentional processes, and thus accurate and dependable evidence of events that transpired.²⁶ But this simply is not the case: “Pictures do lie for the photographer who intentionally or unintentionally makes them lie.”²⁷ Virtually innumerable elements can result in a photograph that is not an accurate depiction of reality, without any conscious manipulation on the part of a photographer,²⁸ before or after an image is created.²⁹ Some theorists do claim that the work of a professional is less likely to be distorted than that of an amateur: The

¹⁹See MARSHALL HOUTS, PHOTOGRAPHIC MISREPRESENTATION § 1.01 (1969).

²⁰See 1 CHARLES C. SCOTT, PHOTOGRAPHIC EVIDENCE § 71 (2d ed. 1993).

²¹See *id.*

²²See *id.* § 73.

²³See *id.* § 81.

²⁴See *id.* § 71.

²⁵See *infra* text accompanying notes 224-225.

²⁶See William J. Mitchell, *When Is Seeing Believing?*, SCIENTIFIC AMERICAN, Feb. 1994, at 70.

²⁷See HOUTS, *supra* note 19, § 1.02.

²⁸See *id.*

²⁹See *infra* text accompanying notes 34-57.

experienced photographer builds a picture, while the amateur just presses a button.³⁰ But, still, it is impossible to create an image completely free of misrepresentation.³¹ Even a professional must confront the inherent limitations of technology; e.g., excluding rarities such as holograms, photographs record in only two dimensions what the eye sees in three.³² A vicious circle is at work—unlike drawings and paintings, which are distrusted because they are products of human intention, photographs easily can deceive and misdirect, because they are regarded as trustworthy on account of the role of science in their creation.³³

The techniques of digital imagery are far from necessary to manipulate a photograph.³⁴ Great potential for distortion arises from the variables of lens type and camera position alone.³⁵ Different lenses can produce strikingly different results, even if photographs are taken from the same position.³⁶ This is because every lens has a specific focal length—the distance between the surface of the film and the point near the lens at which light rays converge to form an image.³⁷ Lenses with long focal lengths—telephoto lenses—tend to shorten lines, narrow the width of an area, and make objects appear closer.³⁸ Conversely, lenses with short focal lengths—wide-angle lenses—tend to elongate lines, broaden the width of an area,

³⁰See HOUTS, *supra* note 19, § 1.01.

³¹See *id.* § 1.04.

³²See *id.* § 3.03.

³³See Mitchell, *supra* note 26, at 69.

³⁴See Lisa Byrne Anastasio Potter, Note, *Altered Realities: The Effect of Digital Imaging Technology on Libel and Right of Privacy*, 17 HAST. COMM./ENT. L.J. 495, 499 (1995). Indeed, in 1988, *Time* was accused of digitally altering a cover image of Ronald Reagan, Mikhail Gorbachev, and George Bush, which was in fact simply taken from an unusual angle. See WILLIAM J. MITCHELL, *THE RECONFIGURED EYE* 202 (1992).

³⁵See Benjamin V. Madison, III, Note, *Seeing Can Be Deceiving: Photographic Evidence in a Visual Age--How Much Weight Does it Deserve?*, 25 WM. & MARY L. REV. 705, 716 (1984).

³⁶See *id.* at 716.

³⁷See *id.* at 717.

³⁸See *id.*

and make objects appear farther away.³⁹ The risk of distortion is most significant for photographs of places and objects, which lack references, such as human beings, of which the average person knows the correct shape and size.⁴⁰ Camera position likewise affects the perspective of a photograph.⁴¹ If one wishes to depict what a human being would see, one should place the camera at eye level. A photograph taken from just above ground level would depict an obscured view; one taken many feet above the ground, would show unrealistic visibility.⁴²

Lighting is another potential source of distortion. Obviously, it can make a subject appear lighter or darker than in reality.⁴³ But subtle changes in the lighting of scenes also can produce significant differences in apparent dimension or depth, such as in photographs of holes and depressions:⁴⁴ Insufficient lighting minimizes the dimension of an object or the depth of a hole, while enhanced lighting emphasizes both dimension and depth.⁴⁵ Whether a photograph is taken in color can have similar effects. Color photography is less subject to distortion and generally portrays scenes and subjects more accurately than comparable black-and-white photographs, which are subject to additional distortion from film and lens filters, which struggle to reduce three-color reality to shades of black.⁴⁶ But filters can change color photographs also—they may be used to bring out blood stains on a green carpet—or darken the sky so a clear day looks stormy.⁴⁷

³⁹*See id.*

⁴⁰*See id.*

⁴¹*See id.* at 718.

⁴²*See id.*

⁴³*See id.* at 719.

⁴⁴*See id.* at 720.

⁴⁵*See id.*

⁴⁶*See id.* *But see infra* note 217.

⁴⁷*See* EVIDENCE: TEACHING MATERIALS FOR AN AGE OF SCIENCE AND STATUTES 248 (Ronald L. Carlson et al. eds., 4th ed. 1997).

Errors in development are yet further potential sources of distortion. “The printing process is perhaps the one step in photography most vulnerable to misrepresentation.”⁴⁸ Improper exposure can produce a misleading photograph if matters of detail, tone, or contrast are important, and even if the negative itself is correct.⁴⁹ But many errors in development may have only an insignificant effect on a photograph, or are easily noticed: Photographs entirely overexposed or underexposed, for example, are conspicuous.⁵⁰ Others errors are somewhat more imperceptible. Reversing a photographic negative during the development process presents a subtle danger: The right and left sides of a photograph are reversed in a clear but deceptive print.⁵¹ But reversal is said to be infrequent and is usually inadvertent.⁵² Further, frequently identifiable elements of a photograph—such as writing—will immediately indicate to a viewer if the image has been reversed.⁵³

But other types of distortion that may be introduced in the development process pose a greater challenge. They may not be easily detectable. Yet, they may also have justifiable uses, to uncover information that standard processing techniques would not. A strong reflective glare may be removed in the lab, for example, creating a “correct” image—or may be added, destroying one.⁵⁴ If one changes the plane of the paper onto which an image is printed, one can correct for a camera that was tilted when a photograph was taken—or create the illusion that the subject of the photograph was tilted.⁵⁵ By “burning in” or “dodging” one can obtain different exposure times for different portions of the same negative—

⁴⁸HOUTS, *supra* note 19, § 11.02.

⁴⁹*See* Madison, *supra* note 35, at 721.

⁵⁰*See id.*

⁵¹*See id.* at 722.

⁵²*See id.*

⁵³*See id.*

⁵⁴*See* JOHN HENRY WIGMORE, THE SCIENCE OF JUDICIAL PROOF § 285 (3rd ed. 1937).

⁵⁵*See* HOUTS, *supra* note 19, § 11.03.

exaggerating or eliminating critical items,⁵⁶ useful if one wishes to, for example, view inconspicuous fingerprints but is also open to abuse.⁵⁷ Thus, even if it could be enforced, a blanket prohibition on the use of development “tricks” could not be imposed without undercutting the use of photographs as evidence.

The challenge for the courts therefore has been to determine, on a case by case basis, whether a photograph may be admitted into evidence. Courts do allow altered photographs to be admitted into evidence, so long as the photographs meet the court’s standards of admissibility.⁵⁸ Courts have allowed skidmarks to be painted before being photographed, to enhance and ensure their visibility, for example.⁵⁹ Similarly, portraits retouched before the commencement of legal proceedings have been admitted if no better depiction of a place or person existed.⁶⁰ But photographs that have been subjected to techniques with no conceivable evidentiary use have been uniformly excluded. Composite pictures, the combining of existing images, in “virtually every situation” are “fraudulent and misleading.”⁶¹ Indeed, the courts are aware that “[p]ractically any result is possible if a skillful artist retouches either the negative or the positive print.”⁶²

Nevertheless, few court decisions concern the admissibility of retouched photographs (as opposed to potentially misleading photographs) presumably because they are commonly understood not to be good practice.⁶³ Indeed, courts appear tacitly to have adopted the presumption that photographs introduced for submission into evidence have not been retouched.⁶⁴ The issue of whether a

⁵⁶*See id.* § 11.05.

⁵⁷*See* 2 SCOTT, *supra* note 20, § 1045.

⁵⁸*See infra* text accompanying notes 160-199.

⁵⁹*See* 2 SCOTT, *supra* note 20, § 1045.

⁶⁰*See* 2 *id.* § 1050.

⁶¹HOUTS, *supra* note 19, § 13.01. *See also supra* note 4.

⁶²*See id.*

⁶³*See* 2 SCOTT, *supra* note 20, § 1050.

⁶⁴*See* Madison, *supra* note 35, at 722.

photograph has been retouched and thus should not be admitted into evidence as it is untrustworthy therefore arises only if a challenge is mounted; it is not necessary to testify that a photograph has not been retouched if it has been testified to be a fair and accurate representation.⁶⁵ The charge that a photograph has been retouched with an intention to deceive has been described by theorists as a serious one and as one that should not be made without supporting proof.⁶⁶

In the past, altered photographs were often easy to detect, justifying the above presumption. Photomontages, for example, usually leave physical evidence of doctoring.⁶⁷ Printing masks and knife cuts may produce implausibly sharp edges;⁶⁸ pencil marks and paint dabs may stand out against surrounding textures;⁶⁹ and colors may not match.⁷⁰ One recent example of such a photograph proven to be doctored, although it was not become part of a court proceeding, surfaced in July 1991, allegedly showing three lost American airmen, alive in Vietnam.⁷¹ In addition to general blurriness, suspicion was aroused by Stalinesque mustaches on the three men, the irregular shape of a sign in the photo, and the unclear physical support and spatial location of the distress sign they held aloft.⁷²

In legal proceedings, however, minor discrepancies that are not indicative of forgery may not be sufficient to lead a court to question the authenticity of a photograph. One court was not persuaded that a photograph on a German

⁶⁵See 2 SCOTT, *supra* note 20, § 1050. See also *infra* text accompanying notes 506, 528.

⁶⁶See 2 SCOTT, *supra* note 20, § 1050.

⁶⁷See Mitchell, *supra* note 26, at 70.

⁶⁸See *id.*

⁶⁹See *id.*

⁷⁰See *id.*

⁷¹See *id.* There is irony in that the photograph was actually a doctored image of three Soviet farmers taken in 1923—from a time and place in which photographic forgery was common. See *id.* at 69-70. See generally HENRY HOLT, *THE COMMISSAR VANISHES* (1997). But see ALAIN JAUBERT, *MAKING PEOPLE DISAPPEAR* (1986) (noting that the Soviets and the Communist Bloc were not been unique in altering photographs for propaganda purposes).

⁷²See Mitchell, *supra* note 26, at 70.

personnel record was of questionable authenticity based on allegations that it could have been torn off or replaced, as well as that there were indications of pencil marks and erasures.⁷³ The court acknowledged “[t]hat evidence suggests that the photograph may at some point have been separated from the document through the failure of adhesive” as well as that “[t]here are pencil marks with typing over them to a considerable extent, and evidence of some erasures.”⁷⁴ But although the discrepancies could not “be conclusively explained at this juncture,” the court declined to exclude the photograph, noting that the defense allegations lacked support, and that with the passage of time, any photographic identification may become uncertain.⁷⁵ Furthermore, the record and photograph’s credibility were enhanced by the fact that the defendant’s thumbprint was on the record.⁷⁶

Other, more subtle hints that a photograph has been altered thus in fact may be necessary to prove to the satisfaction of a court that a photograph has been manipulated—clues which now take on an added importance given that little time and craftsmanship may be required to create an image that, at least at first glance appears real.⁷⁷ The more information an image contains, the more difficult it is to change or entirely fabricate it without introducing inconsistencies that are its undoing.⁷⁸ Mistakes to look for, theorists note, include: if all the objects in a scene appear to be in correct perspective;⁷⁹ if indicators of time, such as clocks and shadows, are consistent;⁸⁰ if objects do not appear to be lit, or cast shadows,

⁷³See *United States v. Kairys*, 600 F. Supp. 1254, 1260 (N.D. Ill. 1984).

⁷⁴*Id.*

⁷⁵See *id.*

⁷⁶See *id.*

⁷⁷See Mitchell, *supra* note 26, at 70.

⁷⁸See *id.* at 73.

⁷⁹See *id.* at 71.

⁸⁰See *id.*

consistently;⁸¹ if unexpected discontinuities in the background suggest deletions from the foreground;⁸² and if shiny surfaces show correct reflections.⁸³

Another means by which to establish if a photograph has been altered is its provenance. Because a real photograph is always taken at a specific place at a specific time, its photographer can be asked how he came to take it—and its subsequent history can be reviewed.⁸⁴ The general credibility of a source—the varying credibility of *Nature* versus a supermarket tabloid, for example—may be a proxy.⁸⁵ Intellectual judgments also are crucial. Few would believe that the image that graced a cover of *Scientific American*, showing Marilyn Monroe with Abraham Lincoln, was real; likewise for a photograph of Elvis Presley in a contemporary setting⁸⁶ or a photograph of an M. C. Escher structure.⁸⁷ The only alternative is to accept the new evidence and modify one’s beliefs accordingly—a significant step.⁸⁸ But this may lead to a clash of beliefs, given that photographs are generally regarded as trustworthy, a clash law is not well-placed to resolve.

Indeed, a problem for the law is that little consideration historically has been given to photographic theory.⁸⁹ When courts make decisions about the admissibility of photographs, their decisions ultimately are based on underlying theories of photographic representation—ideas about how photographs represent things and how visual meaning is communicated.⁹⁰ But these theories usually

⁸¹*See id.*

⁸²*See id.*

⁸³*See id.*

⁸⁴*See id.* at 73. N.B., this is not currently a *requirement* for the admission of a photograph. *See infra* text accompanying notes 166-170.

⁸⁵*See Mitchell, supra* note 26, at 73.

⁸⁶*See id.*

⁸⁷*See MITCHELL, supra* note 34, at 33.

⁸⁸*See Mitchell, supra* note 26, at 73.

⁸⁹*See* David Sternbach, Note, *Hanging Pictures: Photographic Theory and the Framing of Images Of Execution*, 70 N.Y.U. L. REV. 1100, 1102 (1995).

⁹⁰*See id.* at 1100.

remain unexamined, neither a conscious nor explicit part of the process.⁹¹ The lack of a thoughtful or methodical approach to photographic meaning, some theorists argue, is a cause of widespread inconsistency in the law.⁹² A greater awareness of the existing bodies of photographic theory and their implications, in contrast, would lead to decisions that are more consistent and persuasive,⁹³ even before taking into account the changes wrought by digital forgery's emergence.

The very “tricks” that would—or at least could—render a photograph inadmissible for evidentiary purposes can be high art to photographers. “In the hands of an imaginative photographer some basic materials of the printing industry can transform a single black-and-white picture into a series of strikingly dissimilar variations on a theme.”⁹⁴ Certain types of film change shades of gray into black and white, with no intermediate tones; the images that result can be used in a variety of ways, for example such as for silkscreening.⁹⁵ Developer applied at the “wrong” stage and in overabundant amount can produce effects of light and shade.⁹⁶ Although some photographers once argued that the medium was all about reproducing reality, such beliefs long since have passed out of favor: Today, many seek to create “an edited, intensified version of reality.”⁹⁷

Early photographers did tend to treat the camera as a copy machine, and thought of themselves as scribes more than poets.⁹⁸ The early photographer Louis Jacques Mande Daguerre described his daguerreotype as being an instrument with

⁹¹*See id.*

⁹²*See id.*

⁹³*See id.* For a comprehensive review of theorists on the reliability of photographs, see MITCHELL, *supra* note 34, at 23-30.

⁹⁴TIME-LIFE BOOKS, FRONTIERS OF PHOTOGRAPHY 62 (1972).

⁹⁵*See id.* *Cf. infra* text accompanying notes 771, 876.

⁹⁶*See id.* at 78.

⁹⁷*Id.* at 86.

⁹⁸*See* SUSAN SONTAG, ON PHOTOGRAPHY 87-88 (1977).

the power to “reproduce” nature.⁹⁹ Indeed, photography was distinct from all preceding image-systems because it was not dependent on a human being.¹⁰⁰ The process was chemical and automatic, after the guidance of the photographer was completed.¹⁰¹ The authors of anatomical atlases in the late 19th century therefore believed that they could rely on photography to avoid the human temptation to exaggerate:¹⁰² What a man could achieve only by “iron self-discipline,” machines could achieve “willy-nilly.”¹⁰³ The camera inhibited the imposition of “systems, aesthetic norms, hypotheses, language, even anthropomorphic elements on pictorial representation.”¹⁰⁴ Edgar Allen Poe epitomized early understandings of photography when he wrote: “If we examine a work of ordinary art, by means of a powerful microscope, all traces of resemblance to nature will disappear—but the closest scrutiny of the photographic drawing discloses only a more absolute truth, more perfect identity of aspect with the thing represented.”¹⁰⁵

Well into the 20th century, theorists continued to describe photography as objective to the core. “[P]hotography has traditionally been seen as a medium of truth and unassailable accuracy.”¹⁰⁶ Susan Sontag is one theorist to explicitly have noted the role of imagery in law: “A photograph passes for incontrovertible proof that a given thing happened.”¹⁰⁷ But the once near-absolute confidence in photography has unraveled over time. Sontag also observed that a photograph

⁹⁹*See id.* at 165.

¹⁰⁰*See id.* at 158.

¹⁰¹*See id.*

¹⁰²*See* Lorraine Daston & Peter Galison, *The Image of Objectivity*, REPRESENTATIONS, Fall 1992, at 98.

¹⁰³*Id.* at 120.

¹⁰⁴*Id.* at 103.

¹⁰⁵*Id.* at 111 (citing Richard Rudisill, MIRROR IMAGE: INFLUENCE OF THE DAGUERREOTYPE ON AMERICAN SOCIETY (1971)).

¹⁰⁶Christine A. Guilshan, Note, *A Picture is Worth a Thousand Lies: Electronic Imaging and the Future of the Admissibility of Photographs into Evidence*, 18 RUTGERS COMPUTER & TECH. L.J. 365, 365 (1992).

¹⁰⁷SONTAG, *supra* note 98, at 5.

implies “that we know about the world *if we accept it as the camera records it.*”¹⁰⁸ But what the camera records is not necessarily reality. The close-up, for example, is a view the human eye cannot see, or at least cannot isolate;¹⁰⁹ the x-ray depicts features not visible to the eye, and features visible to the eye are likewise not visible to the x-ray.¹¹⁰ *Nonintervention*, not verisimilitude, therefore lies at the heart of “mechanical objectivity.”¹¹¹ Even if and when a photograph reproduces nature, the result can be confusing—extraneous lines and edges can distract and confuse, for example.¹¹² Photography shifted, not eliminated, the sources of subjectivity.¹¹³ Indeed, the work of an illustrator can be a superior means of communication, if it selects and emphasizes what is most important.¹¹⁴

Some modern theorists thus have adopted a polar position, emphasizing that photographs are thin slices of space and time, removed from context:¹¹⁵ Because each image is only a fragment, its weight and meaning depends entirely on the context into which it is inserted.¹¹⁶ Walter Benjamin wrote that photography strips an image of much of its “essence.”¹¹⁷ Traditionally, an image had a unique existence, determined by its history: Although mechanical reproduction does not change the physical appearance of the image, the “quality of its presence is always depreciated.”¹¹⁸ This may be a reflection of the fact that our sense of situation is

¹⁰⁸*Id.* at 20 (emphasis added).

¹⁰⁹*See id.* at 90.

¹¹⁰*See* Daston & Galison, *supra* note 102, at 106.

¹¹¹*Id.* at 120.

¹¹²*See id.* at 113-15.

¹¹³*See id.* at 110.

¹¹⁴*See id.* at 117.

¹¹⁵*See* SONTAG, *supra* note 98, at 22.

¹¹⁶*See id.* at 105-06.

¹¹⁷*See* Jon Lawrence Dartley, Note, *Lost Horizons?: Tortious and Philosophical Implications Of Computer Imaging*, 19 RUTGERS COMPUTER & TECH. L.J. 199, 218 (1993) (citing Walter Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, in ILLUMINATIONS 217 (Hannah Arendt ed. & Harry Zohn trans., Schocken Paperback 1969) (1955)).

¹¹⁸*Id.* at 218-19.

now permeated by the omnipresence of cameras.¹¹⁹ Like for quantum mechanics, the act of our observation effects the system: “What is real is not just the material item but also the discursive system of which the image it bears is part.”¹²⁰

Other theorists today do not deny the reality of photos, but instead assert that the images are super-real, or a different type of reality. “The photographer’s power lies in his ability to re-create his subject in terms of its basic reality, and present this re-creation in such a form that the spectator feels that he is seeing not just a symbol, but the thing itself revealed for the first time.”¹²¹ The power of the camera is the production of a heightened sense of reality, one that reveals the “vital essences of things.”¹²² Some theorists describe photography as even being a complete language. “[T]here are picture parallels to almost every sentence structure and part of speech.”¹²³ But as for speech, the comprehensibility of photography depends on the speaker:¹²⁴ As for speech, photographs exaggerate and minimize, elaborate and omit.¹²⁵ Thus, as for a human witness, a trier of fact must interpret any evidence they present; by no theory are photos infallible.¹²⁶

Indeed, an awareness of photographic theory, despite the varying lines of thought of different theorists, points to the fact that courts should be engaged, not deferential, when dealing with photographs. “Although there is a sense in which the camera does capture reality, not just interpret it, photographs are as much an interpretation of the world as paintings and drawings are.”¹²⁷ Even if courts cannot

¹¹⁹See SONTAG, *supra* note 98, at 11.

¹²⁰JOHN TAGG, BURDEN OF REPRESENTATION 4 (1988).

¹²¹Edward Weston, *What Is Photographic Beauty?*, 46 CAMERA CRAFT 254 (1939), *reprinted in* PHOTOGRAPHERS ON PHOTOGRAPHY, at 154 (Nathan Lyons, ed., 1966).

¹²²*Id.*

¹²³1 SCOTT, *supra* note 20, § 41.

¹²⁴See *id.*

¹²⁵See 1 *id.* § 42-47.

¹²⁶See 1 *id.* § 54.

¹²⁷SONTAG, *supra* note 98, at 6-7.

answer the questions posed by photographic theory, it can ill-afford to ignore them. As Sontag notes, understanding starts from not accepting the world as it looks.¹²⁸ But the courts do not appear to generally heed this principle. Although, as will be seen below, there are minimum requirements set for the admission of a photograph into evidence, photographs retain the status of “found objects—unpremeditated slices of the world”;¹²⁹ they are simultaneously given the prestige of art and the magic of being real.¹³⁰ The lack of principled support for this treatment of photographs will only become more evident as digital imaging develops. Writing twenty years ago, Sontag noted that “[t]he picture may distort; but there is always a presumption that something exists, or did exist, which is like what’s in the picture.”¹³¹ But even this is no longer true today.

B. Photography and the Law

Photographs have been used in legal proceedings almost since a practical photographic process first was developed; in November 1839, the year Daguerre introduced the daguerreotype, French newspapers recorded that a husband had succeeded in using the crude and slow process to photograph his wife in a tryst, and was granted a divorce based on that evidence.¹³² By the early 1840s, police in France were using the daguerreotype to photograph and track down suspects.¹³³ Twenty years later, photographic evidence first appeared in American courts.¹³⁴ Today, photographic evidence has been estimated to be used in half the trials in the

¹²⁸*See id.* at 23.

¹²⁹*See id.* at 69.

¹³⁰*See id.*

¹³¹*Id.* at 5.

¹³²*See* 1 SCOTT, *supra* note 20, § 1(A).

¹³³*See id.*

¹³⁴*See* *Luco v. United States*, 64 U.S. (23 How.) 515 (1860).

United States.¹³⁵ Most of the photographs continue to be made through conventional methods, employing silver salts as light sensitive-agents.¹³⁶ The law of evidence has been drafted and shaped to account for these and other factors.

A few legal theorists do not question that photography should, much less *can*, attempt to capture reality, and assert that, if anything, photographs should be granted even more deference than they are today: The logic that photographs are to be authenticated in a manner similar to maps and drawings is a relic, they say, because photographs are “universally accepted practically as a substitute for view of the subject itself.”¹³⁷ As one early jurist noted, “we cannot conceive of a more impartial and truthful witness than the sun, as its light stamps and seals the similitude of the wound on the photograph put before the jury; it would be more accurate than the memory of witnesses, and as the object of all evidence is to show truth, why should not this dumb witness show it?”¹³⁸ The only exception would be if a photograph has been altered; only then it is no more trustworthy than a map or diagram, although still potentially admissible into evidence.¹³⁹

But even without acknowledging contemporary photographic theorists, this line of reasoning has not been accepted by the law. Instead, the common law and the Federal Rules of Evidence have recognized from the beginning that there must be some check on photographs, to ensure that an image is genuine, or that if it has been altered, the nature of the changes are known and their substantive effects can be evaluated by the court. Under the common law, a court could admit a photograph into evidence if the photograph was relevant to a material issue and was properly authenticated.¹⁴⁰ The Federal Rules of Evidence essentially codified

¹³⁵See 1 SCOTT, *supra* note 20, § 1.

¹³⁶See *id.* § 2.

¹³⁷*Id.* § 1001.

¹³⁸Franklin v. State, 69 Ga. 37, 43 (1882).

¹³⁹See 2 SCOTT, *supra* note 20, § 1001.

¹⁴⁰See Guilshan, *supra* note 106, at 366.

these requirements. Rules 401¹⁴¹ and 402¹⁴² of the Federal Rules of Evidence outline the relevancy requirement, and Rule 901 mandates authentication.¹⁴³ Thus, for well over a century, courts have required photographs to be both relevant and authenticated before admitting them into evidence.¹⁴⁴

This Paper focuses on authentication, the element of the evidentiary process most subject to the effects of digital forgery. But something should be said about relevancy, as well as prejudice; a photograph may be altered in order to create or disperse them. If an altered photograph succeeds in such a mission, its effects will be difficult to undo. A trial court's determination regarding the admissibility of evidence will not be overturned absent clear abuse of discretion.¹⁴⁵ Appellate courts in fact rarely hold that a trial court abused its discretion by admitting a photograph.¹⁴⁶ The relevancy test is satisfied with relative ease: The basic rule is that all evidence relevant to the issues at a trial is admissible.¹⁴⁷ In determining relevance, the standard of probability under Rule 401 is "more . . . probable than it would be without the evidence,"¹⁴⁸ a very lenient requirement.¹⁴⁹

¹⁴¹"Relevant evidence' means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." FED R. EVID. 401.

¹⁴²"[A]ll relevant evidence is admissible, except as otherwise provided by the Constitution of the United States, by Act of Congress, by these rules, or by other rules prescribed by the Supreme Court pursuant to statutory authority. Evidence which is not relevant is not admissible." FED R. EVID. 402.

¹⁴³"The requirement of authentication or identification as a condition precedent to admissibility is satisfied by evidence sufficient to support a finding that the matter in question is what its proponent claims." FED R. EVID. 901(a).

¹⁴⁴See Guilshan, *supra* note 106, at 366.

¹⁴⁵See *id.* at 367.

¹⁴⁶See *id.* at 367 n.16.

¹⁴⁷See *id.* at 367.

¹⁴⁸FED. R. EVID. 401.

¹⁴⁹See Guilshan, *supra* note 106, at 367.

Further, once an image has been viewed, it is hard to convince factfinders to “unsee” it.¹⁵⁰ Images are acknowledged to have disproportionate impacts on factfinders;¹⁵¹ they can have a greater influence on a jury than oral testimony.¹⁵² Indeed, this is one reason practitioners recommend their use:¹⁵³ “[T]he ability of photographic processes to accurately provide information is imbedded in the popular consciousness.”¹⁵⁴ Factfinders even may be more vulnerable to disturbing events in photographs than in reality.¹⁵⁵ Relevant evidence may be excluded under Rule 403 on the grounds of prejudice, confusion, or waste of time.¹⁵⁶ But if a photograph that should have been excluded is admitted, a judge’s instruction cannot simply erase what has occurred; photographs are unlike drawings and maps which are unlikely to incite passion.¹⁵⁷ Indeed, courts must be discouraged from themselves jumping to conclusions based on photographs, such as ruling that one is a conclusive demonstration of physical facts.¹⁵⁸ “[T]he courts should not engage in arbitrary deductions from physical laws and facts as shown by photographs except when they appear to be so clear and irrefutable that no room is left for the entertainment, by reasonable minds, of any other conclusion.”¹⁵⁹

¹⁵⁰See PETER MURRAY, *BASIC TRIAL ADVOCACY* 298 (1995).

¹⁵¹See FEDERAL JUDICIAL CENTER, *MANUAL FOR COMPLEX LITIGATION*, THIRD § 34.35 (1995).

¹⁵²See 2 SCOTT, *supra* note 20, § 1023.

¹⁵³Donald A. Weissman, *Discovery: Auxiliary Aids, Exotic Evidence, And The Duty To Detail*, TRIAL, June 1980, at 30.

¹⁵⁴MURRAY, *supra* note 150, at 292.

¹⁵⁵See SONTAG, *supra* note 98, at 168.

¹⁵⁶“Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence.” FED R. EVID. 403.

¹⁵⁷See 2 SCOTT, *supra* note 20, § 1001.

¹⁵⁸See *id.* § 1028.

¹⁵⁹*Id.*

As for relevancy, fulfilling the authenticity requirement of the Federal Rules of Evidence is not a complicated task. “The Federal Rules of Evidence do not require absolute certainty in authentication, but rather ‘evidence sufficient to support a finding that the matter in question is what its proponent claims.’”¹⁶⁰ Courts historically have admitted photographs under two distinct theories. The first—the pictorial testimony theory—reflects a more conventional view of evidence: One who has personal knowledge of what a photograph depicts testifies to its accuracy.¹⁶¹ Such a person is referred to as a sponsoring witness; the photograph is merely illustrative of his testimony.¹⁶² The second theory is that of self-authentication. By it, “the photographic evidence is a ‘silent witness’ which speaks for itself, and is substantive evidence of what it portrays independent of a sponsoring witness.”¹⁶³ The basis for admission is the presumed reliability of the photographic process—essentially, an image is treated as its own sponsor.¹⁶⁴

Under the pictorial testimony theory, laying a foundation for a photograph is a simple endeavor. Some theorists have urged that the courts should require a detailed foundation,¹⁶⁵ given that it is “common knowledge that distortion often appears in a photograph, by design or otherwise.”¹⁶⁶ But the courts have not so opted.¹⁶⁷ The testimony of the photographer is not necessary; all that is required is the “[t]estimony of a witness with knowledge. Testimony that a matter is what it is claimed to be.”¹⁶⁸ The witness should testify that he is familiar with a scene, how

¹⁶⁰Mauldin v. Upjohn Co., 697 F.2d 644, 648 (5th Cir. 1983) (quoting FED. R. EVID. 901(a)).

¹⁶¹See Guilshan, *supra* note 106, at 369.

¹⁶²See *id.*

¹⁶³See *id.*

¹⁶⁴See *id.*

¹⁶⁵See EVIDENCE: TEACHING MATERIALS FOR AN AGE OF SCIENCE AND STATUTES, *supra* note 47, at 248.

¹⁶⁶9 AM. JUR. *Proof of Facts* 428 (1961).

¹⁶⁷See, e.g., United States v. Stearns, 550 F.2d 1167, 1170 (9th Cir. 1977).

¹⁶⁸FED. R. EVID. 901(b)(1).

he acquired his familiarity, and that the photograph is a fair and accurate representation.¹⁶⁹ The witness need not testify to the chain of custody, where the photograph came from, who took it, when it was taken, or what has happened to it in the meantime.¹⁷⁰ The perspective of the photograph, camera, film, and process used also are irrelevant¹⁷¹ All that matters is if the witness is familiar with what is depicted, and that the testimony establishing what is depicted is relevant, not unfairly prejudicial, and states the depiction is fair and accurate.¹⁷²

In contrast, under the silent witness theory, the admission of photographs is a more complicated endeavor. There is no assumption that a photograph is what it purports to be; its nature and the reliability of the process used to create it must be demonstrated.¹⁷³ Further, the admission of photographs into evidence is also then governed by Federal Rule of Evidence 1002.¹⁷⁴ The Advisory Committee notes indicate that when a witness adopts a photograph as their testimony, this rule need not come into effect; but if the content of a photograph must be proved without sponsoring testimony, such as in a copyright dispute,¹⁷⁵ the “best evidence rule” does apply.¹⁷⁶ Whether this theory should be a grounds at all for the admission of photographs into evidence has long been in dispute. The traditional point of view is that a photograph is “nothing, except so far as it has a human being’s credit to support it.”¹⁷⁷ But today, virtually all jurisdictions provide an alternative route to

¹⁶⁹See, e.g., *People v. Slocum*, 125 Cal. Rptr. 442, 456 (Cal. Ct. App. 1975).

¹⁷⁰See MURRAY, *supra* note 150, at 293.

¹⁷¹See *id.* at 295.

¹⁷²See *id.* at 293.

¹⁷³See KENNETH B. HUGHES & BENJAMIN J. CANTOR, PHOTOGRAPHS IN CIVIL LITIGATION 64-65 (1973).

¹⁷⁴“To prove the content of a writing, recording, or photograph, the original writing, recording, or photograph is required, except as otherwise provided in these rules or by Act of Congress.” FED. R. EVID. 1002.

¹⁷⁵See HUGHES & CANTOR, *supra* note 173, at 37.

¹⁷⁶See *id.*

¹⁷⁷JOHN HENRY WIGMORE, EVIDENCE AT COMMON LAW § 790 (1970) (emphasis omitted).

the introduction of photographs through the silent witness theory,¹⁷⁸ placing trust in the mechanics of photography, unguided by man, as well in the ability of the courts to determine *which* photographic processes are worthy of that trust.

Theorists historically concluded that a photograph must be supported by a testifying witness.¹⁷⁹ But over time, this conclusion came to be accepted as both unnecessarily rigid and inconsistent with the evolution of technology. Given the amount of detail in a photograph, even under the pictorial testimony theory, despite a witness' "supposed familiarity with the subject he really is only a token sponsor."¹⁸⁰ What is relied upon ultimately even under the pictorial testimony theory is "the general reliability of the photographic process rather than the observing power of the verifying witness."¹⁸¹ Further, even before the end of the 19th century, photographs such as of x-rays could be created that could never be seen by the human eye; it was inevitable that the courts would confront images created by cameras, such as of checks when placed in a "Regiscope" machine, that could be powerful evidence and yet could not have a testimonial sponsor.¹⁸²

Over time, the courts have come to accept photographs taken through such processes. Most jurisdictions are in accord¹⁸³ that the silent witness theory views "photographic evidence in a modern, realistic light."¹⁸⁴ The "possibility of the photograph not representing the transaction it purports to is extremely remote... in the absence of some intentional trickery to 'fake' the photograph."¹⁸⁵ If the silent witness theory were not adopted, not only would the admission of x-ray

¹⁷⁸See 2 MCCORMICK ON EVIDENCE § 214 (4th ed., John William Strong, ed. 1992).

¹⁷⁹See 3 WIGMORE, *supra* note 177, § 790.

¹⁸⁰2 SCOTT, *supra* note 20, § 1023.

¹⁸¹See *id.*

¹⁸²See, e.g., *Sisk v. State*, 192 A.2d 108 (Md. 1963).

¹⁸³See 2 MCCORMICK, *supra* note 178, § 214.

¹⁸⁴*Bergner v. State*, 397 N.E.2d 1012, 1016 (Ind. Ct. App. 1979).

¹⁸⁵*Sisk v. State*, 204 A.2d 684, 687-88 (Md. 1964).

photographs be in doubt,¹⁸⁶ but so would that of any photograph which includes information not noticed by a photographer at the time it was taken.¹⁸⁷ Wigmore’s “pictorial testimony theory” is simply at odds with reality, even in jurisdictions that still nominally embrace it.¹⁸⁸ But a form of authentication is still required: Photographs must “be sufficiently established in view of the context in which the photographs are sought to be admitted.”¹⁸⁹ It is still necessary to know when a photograph was taken, that it is accurate, and that it shows what it truly purports to show.¹⁹⁰ In the case of a Regiscope machine, for example, a store employee may be called upon to testify as to when, where, and under what circumstances a Regiscope was utilized, and that it was standard procedure to do so.¹⁹¹

Photographic authentication standards have become even more relaxed in the past decade, since *United States v. Rembert*.¹⁹² Because photography is not an exact science, the law has not set absolute foundational requirements: Courts only require “a strong showing of the photograph’s competency and authenticity.”¹⁹³ The *Rembert* court recognized that there was a need to modernize standards of admissibility: “The uses of photography have not stood still and neither should the

¹⁸⁶See, e.g., John E. Mouser & James T. Philbin, *Photographic Evidence—Is There a Recognized Basis for Admissibility?*, 8 HAST. L.J. 310, 312-13 (1957).

¹⁸⁷See *People v. Bowley*, 382 P.2d 591, 595 (Cal. 1963). The court noted that Wigmore did not consider x-rays to be photographs, and thus not subject to the “pictorial testimony theory,” but that other commentators disagreed. See *id.* at 595 n.5. See also *supra* notes 328-337. One should note that, if strictly interpreted, the pictorial testimony theory should not serve as a foundation for an unnoticed element of a photograph, but also that this distinction does not appear to have commonly been recognized in practice.

¹⁸⁸See, e.g., Mouser & Philbin, *supra* note 186, at 310.

¹⁸⁹*Bergner*, 397 N.E.2d at 1016.

¹⁹⁰See *Bowley*, 382 P.2d at 594. The court, citing *People v. Doggett*, 188 P.2d 792 (Cal. Dist. Ct. App. 1948) indicated that even if a photograph could not be authenticated by personal observation, an expert could do so, testifying that it had not been faked and was not a composite. See *id.* at 596.

¹⁹¹See *State v. Tatum*, 360 P.2d 754, 756 (Wash. 1961).

¹⁹²863 F.2d 1023 (D.C. Cir. 1988).

¹⁹³*Bergner*, 397 N.E.2d at 1017.

law. Nor has the law on the uses of photographic evidence remained unaffected by the changes in society.”¹⁹⁴ But the court concluded that those standards should be *lowered*. All that is now necessary to meet the threshold requirement of authentication is a “showing sufficient to permit a reasonable juror to find that the evidence is what its proponent claims.”¹⁹⁵ The decision vividly demonstrates the judicial reliance on the accuracy of photographic evidence: By liberally admitting photographs into evidence, they implicitly accord substantial faith to the reliability of the photographic process.¹⁹⁶ But when the court in *Rembert* purported to recognize technological change in the role of photography, its authors apparently had no conception of the magnitude of the change that was taking place.¹⁹⁷ It can be difficult to foresee future uses of technology.¹⁹⁸ But even then the potential of digital forgery should have been apparent—and looming ever larger.¹⁹⁹ The court’s failure to do so is exemplary of how far there is to go in dealing with the potential of digital imaging in the legal context.

Current law acknowledges that forgery is possible²⁰⁰—but it embraces photographic images, trusting factors such as the rarity of forgery and the variable weight a photograph may be given once admitted into evidence to counter manipulation.²⁰¹ An example of the law’s leniency is that courts allow the admission of posed photographs:²⁰² Such photographs are subject to additional scrutiny—a photograph must be not just a faithful reproduction of the facts it

¹⁹⁴*Tatum*, 863 F.2d at 1027.

¹⁹⁵*Id.* at 1027 (quoting *United States v. Blackwell*, 694 F.2d 1325, 1330 (D.C. Cir. 1982)).

¹⁹⁶See *Guilshan*, *supra* note 106, at 370.

¹⁹⁷See *id.*

¹⁹⁸See *HOUTS*, *supra* note 19, § 26.01.

¹⁹⁹See *infra* notes 263-266. *But see infra* text accompanying note 518.

²⁰⁰See Andrew Johnson-Laird, *Smoking Guns and Spinning Disks*, *COMPUTER LAW.*, Aug. 1994, at 4. *See also supra* text accompanying note 185.

²⁰¹See *supra* text accompanying notes 116, 185.

²⁰²See 2 *MCCORMICK*, *supra* note 178, § 214.

purports to show, but the “arranged” facts must be substantially and demonstrably accurate reconstructions of the original facts.²⁰³ Nevertheless, the authenticating witness need not have directed the re-enactment, but merely must testify that the posed photograph is a faithful depiction of original facts.²⁰⁴ Such leeway is ripe for abuse. But it also at least shows that the problems posed by digital forgery are not entirely novel; crafting a response will be more a matter of evolution than revolution.

C. A Changing Paradigm

Digital photography serves the same ultimate purpose as conventional photography²⁰⁵—“writing with light”—but the images it preserves do not require chemical development.²⁰⁶ Instead, digital cameras store images on disks or cards or in their own memory, just like computers.²⁰⁷ Digital cameras typically hold about 75 pictures that are easily transferable to a computer, where they can be viewed, printed—or edited.²⁰⁸ The first digital images were recorded in the 1950s.²⁰⁹ Today, most digital cameras record images with a charge-coupled device (CCD), which comprise thousands of photoelectric “cells.” When each cell is struck by light, it emits an electrical signal, varying with the intensity of the light.²¹⁰ The signal is converted into a digital value—typically between 0 and 255—and stored.²¹¹ A

²⁰³See HUGHES & CANTOR, *supra* note 173, at 212-14.

²⁰⁴See, e.g., *Streit v. Kestel*, 161 N.E.2d 409, 411 (Ohio App. 1959).

²⁰⁵See FEDERAL JUDICIAL CENTER, *supra* note 151, § 34.35.

²⁰⁶See *id.*

²⁰⁷See *Digital snap*, *ECONOMIST*, Aug. 30, 1997, at 49.

²⁰⁸See David Beckman & David Hirsch, *Digital Cameras Developing as Easy Way to Snap, Store and Send Pictures*, *ABA J.*, Mar. 1997, at 84.

²⁰⁹See MITCHELL, *supra* note 34, at 1.

²¹⁰See Sam J. Merrell, *Digital Snapshots*, *BOSTON PHOENIX*, Sept. 19, 1997 (Digital Nation), at 13.

²¹¹See *id.*

particular shade of green, for example, might be represented by a binary data stream such as 101011101100010101000101.²¹² The first eight bits (one byte) might signal that the remaining data represents a color rather than a brush stroke; the second byte could specify location of that color in the painting; and the third byte might represent the specific shade of green used by the artist.²¹³ When reassembled by a computer, or in the viewfinder of sophisticated digital cameras, together they comprise a recognizable image.²¹⁴

The quality of digital images still do not approach the sharpness of those recorded on film, although usually adequate for display on a computer monitor; a CCD typically has about 350,000 pixels, while ordinary 35mm film provides the equivalent of 20 million pixels²¹⁵—which on computers would amount to between 18 and 36 megabytes of information.²¹⁶ A further drawback of digital cameras is how they deal with color.²¹⁷ Each CCD cell detects only brightness. Inexpensive digital cameras compensate by placing a filter over the CCD so that one half the cells are covered by green filters, one quarter red, and one quarter blue.²¹⁸ But as a result, images only approximate the original scene's color—the camera must interpolate, based on the color of nearby pixels, what color a pixel should be in

²¹²See Heather Dembert Rafter & William Sloan Coats, *From Sampling of Artistic Works to Music Distribution on the Internet: The Effect of New Digital Technology on Copyright Law*, in 17TH ANNUAL INSTITUTE ON COMPUTER LAW: THE EVOLVING LAW OF THE INTERNET-COMMERCE, FREE SPEECH, SECURITY, OBSCENITY AND ENTERTAINMENT, at 140 (PLI Patents, Copyrights, Trademarks, and Literary Property Course Handbook Series No. 471, 1997).

²¹³See *id.*

²¹⁴See Merrell, *supra* note 210, at 13.

²¹⁵See *Digital snap*, *supra* note 207, at 49-50.

²¹⁶See Merrell, *Digital Snapshots*, *supra* note 210, at 13.

²¹⁷The development of color film photography itself was long and slow; the first appellate court case passing on the admissibility of color photographs as evidence did not come until 1943. See *Green v. City and County of Denver*, 142 P.2d 277 (Colo. 1943).

²¹⁸See Merrell, *supra* note 210, at 13. More expensive digital cameras use separate CCDs for each color, or three successive exposures through a filter of each color. See *id.*

reality.²¹⁹ As with other technology, however, the quality of products available is expected to improve and their price to drop with the passage of time.²²⁰

Price decreases and technological improvements already have brought digital cameras out of the “toy” category.²²¹ Some analysts estimate that in four years the quality of digital cameras will catch up with film, and then will replace much of the film market.²²² Film cameras still dominate the camera market—30 million were sold in 1996, compared to 1.3 million digital cameras.²²³ But the digital market is growing; the 1996 sales were quadruple those of the preceding year, and sales were expected to double again in 1997.²²⁴ Already digital cameras dominate a few sectors of the market; many commercial web sites, for example, are assembled with digital photographs.²²⁵ Selling points of digital cameras already include the instant availability of pictures for use and zero capture cost, features of merit for both dedicated legal photographers and amateurs alike.²²⁶

But the pace of change has caught many, lawyers and laymen, by surprise. Only a few years ago, treatises anticipated that at least “for a while” the next generation of photography would use a combination of chemical and digital processes.²²⁷ Indeed, even though digital cameras may not (yet) be superior technologically to film, commentators note that Americans, used to the relatively poor quality of TV pictures, appear not to fuss over low resolution images.²²⁸ But

²¹⁹*See id.*

²²⁰*See id.* at 13-14. CCDs are expected to be replaced by CMOS (Complimentary Metal Oxide Semiconductor) chips which are less expensive to manufacture and require less power. *See id.* at 14.

²²¹*See Beckman & Hirsch, supra* note 208, at 84.

²²²*See Digital snap, supra* note 207, at 50.

²²³*See id.* at 49.

²²⁴*See id.*

²²⁵*See id.* at 50.

²²⁶*See Merrell, supra* note 210, at 13.

²²⁷*See* 1 SCOTT, *supra* note 20, § 3.

²²⁸*See id.*

this reason for the spread of digital imaging also points out in part why digital imaging poses problems for law; not only are digital images easier to manipulate than photographs created with film, but the lower the resolution of an image, the easier and less detectable is the manipulation of the photograph.²²⁹

Further, the implications of the ease of digital forgery are not just limited to photographs visualized with digital cameras. A scanner, in a manner similar to a digital camera, can take an existing photograph and transform it into numeric data, readable—and manipulable—by a computer.²³⁰ In fact, a strip of film, the product of a chemical process, can be scanned into a computer, altered, and a new strip of film substituted, any change being “highly undetectable.”²³¹ In addition, once in digital format, photographs can be copied as easily as any other computer files—albeit they are often very large files.²³² The quality of the image does not deteriorate during reproduction, no matter how many times it is copied.²³³ If produced in volume, the cost of a CD-ROM with 600 million characters of information on it can be measured in pennies.²³⁴ Further, the Internet has in terms of distribution made the CD-ROM obsolete practically overnight:²³⁵ Now data can be sent instantly to anyone with a computer and access to a phone line.²³⁶

The arrival of the digital age requires a reconsideration of the trust law places in photography, because what was once unlikely is now easy—and may

²²⁹See Mitchell, *supra* note 26, at 73. Cf. *infra* text accompanying notes 56-57.

²³⁰See Andy Johnson-Laird, *Multimedia and the Law*, in MULTIMEDIA AND THE LAW at 11 (PLI Patents, Copyrights, Trademarks, and Literary Property Course Handbook Series No. 383, 1994).

²³¹See EASTMAN KODAK CO., *Digital Imagery in the Courtroom* (visited Jan. 8, 1998) <<http://www.kodak.de/US/en/cgs/law/filmdig/imagery.shtml>>.

²³²See Johnson-Laird, *supra* note 230, at 15.

²³³The Child Pornography Prevention Act Of 1995: Hearings on S. 1237 Before the Senate Committee on the Judiciary (June 4, 1996) (statement of Bruce A. Taylor, President and Chief Counsel of the National Law Center for Children and Families), *available in* Westlaw, 1996 WL 10164796.

²³⁴See Johnson-Laird, *supra* note 230, at 15.

²³⁵See *id.*

²³⁶See Mitchell, *supra* note 26, at 73.

even be commonplace; the law as it is today simply cannot tell. Commentators do disagree as to exactly how easy it is today to alter images without detection.²³⁷ What once “might involve chemicals and darkroom tools, manual retouching, or elaborate cutting and pasting,” some say can now be accomplished by “almost anyone, with little training.”²³⁸ Certainly image-processing software, such as Adobe Photoshop or Adobe Premiere,²³⁹ which can crop, cut and paste, add textures, airbrush, and so forth²⁴⁰ have become affordable, as have computers; what required a \$100,000 machine in 1980 required only a \$7000 machine in 1990²⁴¹— and the price/performance ratio has continued to improve.²⁴² The more people who take advantage of the technology, the less certain one can be as to how it is being used.²⁴³ But the fact that with “sufficiently advanced technology . . . manipulations are merely a matter of pushing the right buttons”²⁴⁴ still requires one to know which buttons to press.²⁴⁵ Amateur forgeries which have so far come to light have been crude and detectable.²⁴⁶ Nevertheless, given that a computer’s business is manipulating digits,²⁴⁷ if an image exists as series of them, it is difficult to discern on what basis one can decide that it has not been altered.

But as has been true for conventional photography, the danger that an image may be created from nothing²⁴⁸ is not the only factor at work. Some digital

²³⁷For a detailed review of the techniques of digital manipulation, see MITCHELL, *supra* note 34, at 23-30.

²³⁸Bennett Daviss, *Picture Perfect*, DISCOVER, July 1990, at 55.

²³⁹See Johnson-Laird, *supra* note 230, at 12.

²⁴⁰See Benjamin R. Seecof, Comment, *Scanning into the Future of Copyrightable Images: Computer-Based Image Processing Poses a Present Threat*, 5 HIGH TECH. L.J. 371, 374 (1990).

²⁴¹See *id.* at 377.

²⁴²See *infra* note 839.

²⁴³See Guilshan, *supra* note 106, at 376.

²⁴⁴Rafter & Coats, *supra* note 212, at 139.

²⁴⁵See *infra* text accompanying notes 672, 732.

²⁴⁶See *infra* text accompanying notes 71, 641-646.

²⁴⁷See Daviss, *supra* note 238, at 56.

²⁴⁸See Dartley, *supra* note 117, at 220-21.

processing techniques are akin to standard techniques to enhance images, such as enlargement and control over contrast.²⁴⁹ For evidentiary purposes, digital imaging has notable advantages over conventional methods, such as ease of enhancement, greater depth of field (clearer images of objects at a distance) and efficient storage.²⁵⁰ But some techniques are clearly problematic, such as the “morphing” of facial features to make an individual appear older or otherwise different than reality.²⁵¹ In between is a gray area, such as the selective removal of colors to clean up a background.²⁵² Further, digital techniques are more precise than conventional methods of retouching because any area of the image can be magnified and altered pixel by pixel.²⁵³ Brightness can be changed, elements added and subtracted, apparent focus increased or decreased, lighting modified, or the image’s border extended or contracted.²⁵⁴ In sum, working with photographs on a computer eliminates tedious manual adjustments and time-consuming procedures in the darkroom—a power that can be used or misused.²⁵⁵

Digital imaging already has established itself as a useful forensic tool; for example, because it allows the immediate evaluation of a image.²⁵⁶ Fingerprints often must be photographed while on the original surface. Fluorescent dye is often used to provide optimum results—but the exposure, filtration, and illumination techniques are tricky.²⁵⁷ A digital image can be evaluated on the spot, to determine

²⁴⁹See Richard Kammen & Herbert Blitzer, *Ensure admissibility of Digital Images*, INDIANA LAWYER, Nov. 1, 1995, reprinted in *Ensure admissibility of Digital Images* (visited Jan. 8, 1998) <<http://www.kodak.de/US/en/cgs/law/filmdig/establish.shtml>>.

²⁵⁰See FEDERAL JUDICIAL CENTER, *supra* note 151, § 34.35.

²⁵¹See Kammen & Blitzer, *supra* note 249.

²⁵²See *id.*

²⁵³See Dartley, *supra* note 117, at 202.

²⁵⁴See *id.*

²⁵⁵See Guilshan, *supra* note 106, at 372.

²⁵⁶See EASTMAN KODAK CO., *The Digital Camera as Forensic Tool* (visited Jan. 8, 1998) <<http://www.kodak.de/us/en/cgs/law/filmdig/tool.shtml>>.

²⁵⁷See *id.* Kodak notes that digital cameras require more accurate exposure measurement and control than film, but this is offset by the ease with which an image can be evaluated and

if it is of sufficient quality, or if it needs to be rearranged, recolored, or otherwise transformed.²⁵⁸ In addition, once a digital image is created, it can be quickly prepared for a database search, compared on-screen, or be made part of a court display, speeding the process of justice.²⁵⁹ In other forums, the advantages of digital photography for depicting the real long since have been noted and put to work. NASA uses digital techniques to clarify images of outer space and to add color to satellite pictures,²⁶⁰ and to mold streams of data from space probes (that suffer from power and weight limitations) into a single image.²⁶¹ Thus, manipulation can make photographic images *more* real.

But digital imaging is also widely used to create the unreal.²⁶² A decade ago, *Life* produced in two and a half hours a photograph of a summit meeting between President Ronald Reagan, Palestine Liberation Organization Chairman Yasser Arafat, and Israeli Prime Minister Yitzhak Shamir by importing bodies, adjusting their size, painting a new background, and balancing the lighting and skin tones.²⁶³ Today, such forgeries, such as the compilation of existing images to create pictures of boards of directors for annual reports, have become almost routine.²⁶⁴ Two 11-foot by 29 foot backdrops (one day, one night) created for WCBS-TV news broadcasts in New York, for example, are the composites of a number of different photographs—with subtle changes such as the Empire State Building relocated so

immediately reshot. See EASTMAN KODAK CO., *About Digital* (visited Jan. 8, 1998) <<http://www.kodak.de/us/en/cgs/law/filmdig/digital.shtml>>.

²⁵⁸See Kammen & Blitzer, *supra* note 249.

²⁵⁹See *id.*

²⁶⁰See MITCHELL, *supra* note 34, at 210.

²⁶¹See FRED RITCHIN, *IN OUR OWN IMAGE* 14 (1990).

²⁶²See Mitchell, *supra* note 26, at 69.

²⁶³See Daviss, *supra* note 238, at 56. The line between reality and digital forgery perhaps became even more blurred when, in September 1993, the scene became a reality, with Bill Clinton substituted for Reagan and Yitzhak Rabin for Shamir. See Mitchell, *supra* note 26, at 69.

²⁶⁴See MITCHELL, *supra* note 34, at 214.

it is not hidden by the sports announcer.²⁶⁵ Although the emulsion grain—the clumpings of molecules that form when film is developed—are visible, there are no scan lines—and thus few surface clues of the change.²⁶⁶ Even fewer clues exist when an image is entirely artificial, with no adjustment necessary to account for the lighting, perspective, etc. of existing images.²⁶⁷

To date, most of the controversies over digital imagery have arisen in contexts outside of the law. But similar issues are here at stake: When a computer is used to create or change an image, the result is antithetical to notions of authenticity and historical time and space,²⁶⁸ notions traditionally relied upon by journalists as well as by jurists.²⁶⁹ “To many people, a news photo is a faithful representation of an actual, physical reality. They’ve come to depend on the idea that if they’d been there, this is what they’d have seen.”²⁷⁰ But journalists have failed to reach a consensus about the use of digitally manipulated photographs. Former *National Geographic* editor Wilbur Garrett defended the magazine’s decision to move two pyramids on the cover of its February 1982 issue closer together: “The effect was the same as if the photographer had moved a few feet.”²⁷¹ New York *Newsday* went farther to defend its “composite illustration” of Nancy Kerrigan and Tonya Harding skating together: “[W]hy must photos always be limited to speaking in the past tense? Why can’t (carefully labeled) pictures

²⁶⁵Daviss, *supra* note 238, at 56.

²⁶⁶*See id.* at 57.

²⁶⁷*See Mitchell, supra* note 26, at 73.

²⁶⁸*See Dartley, supra* note 117, at 219 (citing Walter Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, in *ILLUMINATIONS* 217 (Hannah Arendt ed. & Harry Zohn trans., Schocken Paperback 1969) (1955)).

²⁶⁹One should also ponder the specter of altered photographs later being introduced in a legal proceeding, such as to serve as evidence of attendance at a meeting of a board of directors. *See supra* text accompanying note 264.

²⁷⁰Daviss, *supra* note 238, at 57.

²⁷¹*Id.*

sometimes be allowed to speculate on what might happen?”²⁷² Thus, unfortunately, the experience of digital imagery in other contexts provides few lessons for the law; even though the problems posed by digital forgery may not be new, what is to be done is mostly a question of first impression.

D. What Is To Be Done?

There should be no doubt that the law must respond to the changes taking place in photography.²⁷³ Even we if cannot ascertain to what degree, what was once the work of mavericks, “technically difficult, time-consuming, and outside the mainstream of photographic practice,”²⁷⁴ is now widely obtainable.²⁷⁵ One no longer needs a darkroom to develop a photograph,²⁷⁶ or, more significantly, to manipulate its data sequence.²⁷⁷ Commentators have noted the potential for abuse: “An interlude of false innocence has passed.”²⁷⁸ Treatises recognized by the early 1990s that although changes in cameras and recording materials could aid in the use of photographic evidence, they were also fraught with problems.²⁷⁹ Because “[o]bjects within a picture can be shifted around or eliminated and other objects from another picture inserted, without creating any doubt that the picture depicts reality . . . it will often be necessary to develop unquestionable foundational proof of reliability. Otherwise, photographs will lose their standing as infallible

²⁷²Mitchell Stephens, *What’s Fair in Changing Photos? Let Pictures Speculate, Just Like Words*, NEWSDAY, Feb. 24, 1994, at 115.

²⁷³“[T]he technology of computer enhanced imagery is . . . undeveloped as a matter of reported case law in its non-medical applications.” GREGORY P. JOSEPH, MODERN VISUAL EVIDENCE § 8.04(1) (1997).

²⁷⁴See MITCHELL, *supra* note 34, at 7.

²⁷⁵See *id.* at 19.

²⁷⁶See Mitchell, *supra* note 26, at 73.

²⁷⁷See Rafter & Coats, *supra* note 212, at 139.

²⁷⁸See MITCHELL, *supra* note 34, at 225.

²⁷⁹See 1 SCOTT, *supra* note 20, § 3.

witnesses and become no more useful as substantive evidence, or even corroborative evidence, than maps or diagrams drawn by hand.”²⁸⁰ But change has been glacial at best. This is not a unique problem for photography; digital imaging is only one of the technologies, for example, for which the Manual for Complex Litigation urges judges to now establish front-end rules for the use of in the courtroom.²⁸¹ But even though the law cannot stop the progress of technology there are ways in which it can—and should—respond to change.²⁸²

One response would be to update the Federal Rules of Evidence.²⁸³ Many of the current definitions in the rules, which have not kept pace with technology, have the potential to “create substantial future mischief.”²⁸⁴ One commentator notes that “[t]he false assumption in the FRE is that computer data is similar to other forms of information capture, such as photography.”²⁸⁵ But information captured digitally is never fixed; it is always subject to manipulation.²⁸⁶ The Best Evidence Rule, for example, considers print-outs of data stored on computers as originals,²⁸⁷ a proposition difficult to accept given that “the advent of electronic photography means the end of the photo negative [as] tangible evidence of an event.”²⁸⁸ Further, unlike for a photographic negative, digital data means nothing without software to produce intelligible “output”; manipulation is inherent to the process.²⁸⁹ It is true that, absent human intervention, software usually can be relied upon to produce an exact duplicate of the information that was put into the computer. But

²⁸⁰See *id.* § 3.

²⁸¹See FEDERAL JUDICIAL CENTER, *supra* note 151, § 34.35.

²⁸²See Guilshan, *supra* note 106, at 378.

²⁸³See *infra* text accompanying notes 651-654.

²⁸⁴R. Bruce Beckner, *Advance Sheet*, 22 LITIGATION 57, 59 (1996).

²⁸⁵*Id.*

²⁸⁶See Beckner, *supra* note 284, at 59.

²⁸⁷See FED. R. EVID. 1001(3) (“If data are stored in a computer or similar device, any printout or other output readable by sight, shown to reflect the data accurately, is an ‘original.’”).

²⁸⁸See Guilshan, *supra* note 106, 375-76.

²⁸⁹See Beckner, *supra* note 284, at 59-60.

commentators also have observed that computer users tolerate a level of “perfection” that is relative, not absolute, and may not meet legal standards; accidental errors can be invisible and undetectable until it is too late.²⁹⁰

Given the likely difficulties of amending the Rules,²⁹¹ a further means by which the law could respond to digital photography would be to use Rule 403 as it stands to virtually eliminate the use of photographs as evidence.²⁹² Citing Rule 403, one commentator suggests, courts could simply conclude that because of the potential of abuse from photographic manipulation, photographs carry too great a danger of unfair prejudice to be admissible.²⁹³ Others similarly conclude that the acceptance of photographs at least should be “greatly curtailed.”²⁹⁴ Again, not only the silent witness theory but the pictorial testimony theory ultimately rely on the infallibility of the photographic process.²⁹⁵ One commentator asserts that in fact photographs are rarely necessary;²⁹⁶ in decisions of the Supreme Court, they never have been indispensable²⁹⁷; further, any prejudice is likely to be serious.²⁹⁸ This approach would be drastic, however. Intuitively, it seems unlikely that Supreme Court cases are a representative sampling; curtailment might disallow authentic and valuable evidence, even while still allowing fabrications to be admitted.²⁹⁹

²⁹⁰See *id.* at 60. See *infra* text accompanying notes 56-57.

²⁹¹See 28 U.S.C. § 2076 (1997).

²⁹²See Guilshan, *supra* note 106, at 378.

²⁹³See *id.*

²⁹⁴See Potter, *supra* note 34, at 503-04. Potter states that of particular concern are causes of action in which the truth is especially critical, such as libel. See *id.* at 505.

²⁹⁵See *supra* text accompanying note 181.

²⁹⁶See Hampton Dellinger, *Words Are Enough: The Troublesome Use of Photographs, Maps, and Other Images in Supreme Court Opinions*, 110 HARV. L. REV. 1704, 1750 (1997).

²⁹⁷See *id.* For example, in *Capitol Square Review and Advisory Board v. Pinette*, 115 S. Ct. 2440, 2474 (1995) (Stevens, J., dissenting), a photograph was attached to a dissenting opinion. The low angle from which the picture was shot allegedly makes a ten-foot Latin cross appear substantially taller than it is. See Dellinger, *supra* note 296, at 1707.

²⁹⁸See MURRAY, *supra* note 150, at 295. See also *supra* text accompanying notes 146-157.

²⁹⁹See Potter, *supra* note 34, at 504.

Further, commentators doubt that the problem is so serious that courts have to resort to such an extreme measure—at least at the present time.³⁰⁰

A less drastic alternative would be to broaden the scope of review given to photographs before they are admitted under the Rules,³⁰¹ although the trade-off would inevitably be that the measures would be less effective. For example, the determination of the relevance and authentication of photographic evidence currently rests within the trial court’s discretion and will not be overturned absent a clear abuse of that discretion.³⁰² But if, or so long as, the courts are unable to detect fakery, such deference by appeals courts may not be warranted; de novo review could be justified. Another enhancement would be for courts to require that potentially misleading computer-generated images be conspicuously labeled, to avoid any misrepresentation to the court.³⁰³ An analogy lies in that if courts admit posed photographs,³⁰⁴ vigorous authentication is required.³⁰⁵ But if the primary concern is *intentional* deception, such a standard might have little practical effect. Further, it might not derail the emotional impact of images on factfinders,³⁰⁶ even if, as some commentators recommend, courts adopt detailed jury instructions, tailored to a variety of evidentiary contexts, to ameliorate the potential effects of possibly misleading or prejudicial evidence.³⁰⁷ In addition, no one has even proposed a comparable set of instructions or guidelines for judges themselves, who

³⁰⁰See Guilshan, *supra* note 106, at 378.

³⁰¹See *id.* at 379.

³⁰²See *id.*

³⁰³See Dartley, *supra* note 117, at 215.

³⁰⁴See 2 MCCORMICK, *supra* note 178, § 214. See also *supra* text accompanying notes 202-204.

³⁰⁵See HUGHES & CANTOR, *supra* note 173, at 212-14.

³⁰⁶See *supra* text accompanying notes 150-159.

³⁰⁷See Sternbach, *supra* note 69, at 1102.

are also susceptible.³⁰⁸ Commentators have noted with concern that courts confuse photographic representations of fact with facts themselves.³⁰⁹

Another response might be to limit the authentication of photographs to the photographer himself; it would, at least in theory, ensure that photographs are not manipulated without the photographer's knowledge, and that no "new" image is later misrepresented as the original.³¹⁰ But again, this solution seems drastic—as well as dependent on that photographers recall in perfect detail the images they create.³¹¹ Alternatively, the courts could require the demonstration of chain of custody.³¹² Although the authentication of movie film historically has resembled that of photographs,³¹³ courts once suggested that proof of chain of custody might be required,³¹⁴ although this condition was later abandoned.³¹⁵ Indeed, even today some commentators recommend that lawyers demand the negative from which any proffered photograph was made: "Some startling discoveries are frequently made."³¹⁶ To that end, some commentators recommend that law enforcement and public safety agencies establish standard operating procedures to dispel any doubt about the integrity of digital imagery for evidentiary purposes.³¹⁷

A further alternative would be to retain existing authentication processes, but to require the stricter questioning of any authenticating witness—"special care,"³¹⁸ in the words of one commentator—so that the court may determine the probability that an image has been altered and shape its inquiry and decision in regard to its

³⁰⁸*See id.*

³⁰⁹*See* Madison, *supra* note 35, at 715.

³¹⁰*See* Guilshan, *supra* note 106, at 379.

³¹¹*See supra* text accompanying note 187.

³¹²*See* FEDERAL JUDICIAL CENTER, *supra* note 151, § 34.35.

³¹³*See, e.g.,* Commonwealth v. Roller, 100 Pa. Super. 125, 127 (1930).

³¹⁴*See* McGoorty v. Benhart, 27 N.E.2d 289, 293, 295 (Ill. App. Ct. 1940).

³¹⁵*See, e.g.,* Haley v. Haley, 103 N.Y.S.2d 717, 718-19 (Sup. Ct. 1950).

³¹⁶HOUTS, *supra* note 19, § 11.10.

³¹⁷*See* EASTMAN KODAK CO., *supra* note 249. *See also supra* text accompanying notes 345, 353.

³¹⁸*See* FEDERAL JUDICIAL CENTER, *supra* note 151, § 34.35.

admissibility appropriately.³¹⁹ Questions or topics of inquiry might include: who took the image;³²⁰ what is the photographer's relationship to the issue in question;³²¹ how else might the image have been constructed;³²² is the use of the image in court related to the use for which it was made;³²³ do the claims of the parties rest on the same notions of photographic meaning;³²⁴ and are the narratives of witnesses reconcilable with—or relevant to—what is represented tangibly in a photograph.³²⁵ But again, this approach does not resolve all possible difficulties; an authenticating witness may be untruthful. But, as Wigmore notes, an untruthful witness is at least more a problem of perjury than photography.³²⁶

If the pictorial testimony theory were to be made subject to greater constraints than today, because a photograph cannot or should not be taken at face value,³²⁷ then almost inevitably the silent witness theory could not continue to be utilized as presently constituted either. But the theory potentially could be rebuilt, on a new foundation. Wigmore claimed that x-rays were admissible, despite their lack of a testimonial sponsor, under a different standard than that for ordinary photography:³²⁸ “[T]hat the instrument or process is known to be a trustworthy one.”³²⁹ Further, Wigmore indicated that the principles for the admission of x-rays “may serve as useful guidance for other new technologies.”³³⁰ If there is a bona fide doubt that an image is authentic, one should evaluate: the status of the

³¹⁹See Sternbach, *supra* note 69, at 1139.

³²⁰See *id.*

³²¹See *id.*

³²²See *id.*

³²³See *id.* at 1140.

³²⁴See *id.* at 1139.

³²⁵See *id.*

³²⁶See 3 WIGMORE, *supra* note 177, § 792.

³²⁷See Guilshan, *supra* note 106, at 379.

³²⁸See 3 WIGMORE, *supra* note 177, § 795.

³²⁹*Id.* § 795.

³³⁰See *id.* § 795a

particular instrument used;³³¹ the qualifications of the witness operating the instrument and taking the photograph;³³² and the operator identify the person or object photographed.³³³ Further, a witness should identify the photograph and the conditions at the time the photograph was taken.³³⁴ Such a test, based on the principles of Wigmore, could permit the continued admission of photographs without a testimonial sponsor. The test is a sliding scale: The weight to which photographic evidence is entitled increases as the number of reliability indicia increase.³³⁵ Commentators in fact have noted the relative merits of this test compared to the *Frye*³³⁶ test; Wigmore's principles are not handicapped by ambiguity and a fundamental failure to account for the advance of technology.³³⁷ But still, as above, the test may do little to stop and deter *intentional* fakery.

A conventional means by which to attack the veracity of a photograph is to allege that standard procedures were not followed.³³⁸ Even though chain of custody is not a requirement today,³³⁹ it is therefore already good practice for parties to document the history of any digital image, adopting standard operating procedures.³⁴⁰ First, images should be recorded in a medium that cannot be altered, such as a CD, and stored as any other evidence for which a chain of custody is maintained.³⁴¹ Second, images should include information regarding their creation, such as the camera's make, model and serial number, camera settings, and the date

³³¹*See id.* § 795.

³³²*See id.*

³³³*See id.*

³³⁴*See id.*

³³⁵*See* Madison, *supra* note 35, at 741.

³³⁶*See* *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).

³³⁷*See* Vicki S. Menard, *Admission of Computer Generated Visual Evidence: Should There Be Clear Standards?*, 6 SOFTWARE L.J. 325, 335 (1993).

³³⁸*See* MITCHELL, *supra* note 34, at 30.

³³⁹*See supra* text accompanying note 170.

³⁴⁰*See* Kammen & Blitzer, *supra* note 249.

³⁴¹*See id.* A further aid is the use of CD-ROMs with embedded serial numbers; unlike rolls of film, it would be virtually impossible to substitute an altered disc. *See id.*

and time the image was captured.³⁴² Third, anyone who prepares exhibits for courts should be trained in digital image processing, and know which images may require a notation that changes are not prejudicial.³⁴³ Fourth, rigorous procedures should be established for the entering of works-in-progress into file systems; if an image is manipulated, there should be an “audit trail” of how an image was changed, to dispel any claim of impropriety.³⁴⁴

Yet, none of the above courses of action can provide a complete solution in a world of digital imagery. As do most of the approaches above, the suggested operating procedures assume honest actors. But even police, for example, differ on what is acceptable conduct in regard to photographs. A former Chief Inspector of the Birmingham, England police wrote that “[p]hotographs made for the purpose of crime detection or for production in any court proceedings should not be retouched, treated or marked in any way.”³⁴⁵ But, as discussed above, digital imaging has proven itself as a forensic tool in large part because of how easily it *can* alter images.³⁴⁶ Further, the above proposed standard operating procedures assume that evidence will only be admitted under the pictorial theory: “Imagery is not evidence. . . . Ultimately, evidence in a police case revolves around the integrity and veracity of the witness presenting the image, who must demonstrate its authenticity to the court.”³⁴⁷ This does not reflect reality.

But the fact that there is no perfect solution does not excuse the law from taking action. Already courts are considering cases which, while not reaching full implications of digital forgery, have come very close to doing so; in two recent cases, courts considered the propriety of using digital technology to enhance self-

³⁴²*See id.*

³⁴³*See id.* *See also supra* text accompanying notes 145, 150-152.

³⁴⁴*See* Kammen & Blitzer, *supra* note 249.

³⁴⁵TAGG, *supra* note 120, at 95-96 (*quoting* H. Pountney, POLICE PHOTOGRAPHY 3 (1971)).

³⁴⁶*See supra* text accompanying notes 256-258.

³⁴⁷EASTMAN KODAK CO., *supra* note 231.

authenticating photographs. In *State of California v. Phillip Lee Jackson*,³⁴⁸ a set of fingerprints at a crime scene proved difficult to evaluate through conventional methods.³⁴⁹ A digitally-enhanced image was introduced; a computer adjusted the photograph's brightness, contrast, size, and color, allegedly without damaging the integrity of the prints.³⁵⁰ The photograph was ruled admissible.³⁵¹ Similarly, in *State of Washington v. Eric Hayden*, a suspect set of palm prints were digitally enhanced.³⁵² In both cases, standard operating procedures were used to ensure the integrity of the process; for example, examiners had not seen the direct print of the defendants, so the likelihood of fakery and frame-up was minimal.³⁵³

The above cases demonstrate that the need for action at a higher level is inevitable. Digital technology is in many ways fundamentally at odds with notions of evidence; electronic media are designed to be reused, with no equivalent to the permanently archived, physically unique photographic negative.³⁵⁴ The law should confront this challenge directly, rather than let it play out haphazardly, in ad hoc decisions. But a rush to judgment may be no better; in fact, as discussed in the following Part, it could be worse. This Author's opinion is that the law should assume, until demonstrated otherwise, that the problems posed by digital photography are an expansion on, not a departure from, those that are already inherent in photography, and act accordingly. For example, the law should assume that digital forgeries can be detected, instead of banishing all images out of a fear

³⁴⁸See EASTMAN KODAK CO., *supra* note 249. See also Bill Callahan, *Trial opens in fatal beatings of women*, SAN DIEGO UNION & TRIB., Oct. 3, 1995, at B3.

³⁴⁹See EASTMAN KODAK CO., *Forensic Imaging Case Studies* (visited Jan. 8, 1998) <<http://www.kodak.de/us/en/cgs/law/filmdig/forensic.shtml>>.

³⁵⁰See *id.*

³⁵¹See *id.*

³⁵²See *id.* See also Kevin Ebi, *Neighbor Is Found Guilty in Slaying of College Student: Case Focused on Enhanced Palm Print*, SEATTLE TIMES, Jan. 10, 1996, at B1; Kevin Ebi, *Bloody Print Is Trial Focus*, SEATTLE TIMES, Dec. 12, 1995, at B1.

³⁵³See EASTMAN KODAK CO., *supra* note 349.

³⁵⁴See MITCHELL, *supra* note 34, at 51.

that an unreckonable number may be compromised. In the 19th century, photographic experts were initially unable to explain spirit photographs, but over time were able to prove that they were nothing more than multiple exposures.³⁵⁵ Only in the (one hopes unlikely) event that digital imagery proves indomitable should the response be draconian, instead of comprising lesser (but already long-needed) reforms.

II. Naked Children

*There is a real difference between touching children sexually and touching computer keys to create images: the former is wrong in itself and within the power of government to prohibit; but there is nothing inherently wrongful about using either a computer or adult to create sexually explicit images.*³⁵⁶

One consequence of the enhanced manipulability of photographs through digital technology has been the reopening of debate over whether and how child pornography should be excluded from the protection of the First Amendment.³⁵⁷ With the help of such technology, images of children involved in sexually explicit conduct can be created from innocent images, or even without the involvement of an actual child at all.³⁵⁸ Under existing First Amendment theory, as well as pre-

³⁵⁵See *id.* at 196; James Black, *The Spirit-Photograph Fraud*, SCI. AM., Oct. 1922, at 224. No less an authority on detective work than Arthur Conan Doyle was taken in by spirit photographers. See *id.*

³⁵⁶See Brief of the American Civil Liberties Union, et al., as Amici Curiae, at 14, *Free Speech Coalition v. Reno* (9th Cir., filed Sept. 26, 1997) (No. 97-16536).

³⁵⁷This Paper does not attempt to review all law regarding child pornography, but merely that portion of it which is most relevant for digital imaging. For a more expansive review, see, e.g., Jeffrey Gold et al., Comment, *Brief for Petitioner, The Thirteenth Annual John Marshall Law School National Moot Court Competition in Information Technology and Privacy Law*, 13 J. MARSHALL J. COMPUTER & INFO. L. 505 (1995).

³⁵⁸See *infra* text accompanying notes 430-432, 462-463.

1996 federal law, such images are constitutionally shielded.³⁵⁹ But contemporary trends in law and society forebode that they ultimately will be/remain excluded from the protections of the First Amendment.³⁶⁰ While there may be little of merit—artistic, scientific, or otherwise—in many if not most computer-generated images of naked children, there are legitimate purposes for their creation.³⁶¹ Further, if such images are prohibited, all digital technology would effectively be cast as a bogeyman, to be prohibited merely because it allows the expression of fantasy and because it creates evidentiary problems for prosecutors and courts. Such an ubiquitous outcome is clearly not desirable. In contrast to the response of law to the problems digital imaging poses for evidence, for child pornography the response has been swift—but it also has been misguided and injurious.

A. Child Pornography and the Law

The specific regulation of child pornography by the federal government and the states began in the 1970s. Congress first prohibited the use of minors in sexually-explicit productions, or the distribution of obscene material depicting minors engaged in sexually explicit conduct, through the Protection of Children Against Sexual Exploitation Act of 1977.³⁶² But the watershed event for child pornography regulation was the Supreme Court’s 1982 decision in *New York v. Ferber*.³⁶³ The Court held that child pornography in general lacked constitutional protection, regardless of whether it was obscene. Crucially, the decision was specifically premised on harm to actual child participants that was caused through

³⁵⁹See *infra* text accompanying notes 363-386.

³⁶⁰See *infra* text accompanying notes 436-449, 487-488, 490-491.

³⁶¹See *infra* text accompanying note 617.

³⁶²See Pub. L. No. 95-225, 92 Stat. 7 (1978).

³⁶³See 458 U.S. 747 (1982).

the production of child pornography: No less than fifteen times in *Ferber*, the Supreme Court specifically indicated that its concern was actual children.³⁶⁴

The Court reasoned that a separate classification in First Amendment jurisprudence for child pornography was justified because, first, “the use of children as subjects of pornographic materials is harmful to the physiological, emotional, and mental health of the child.”³⁶⁵ Second, the distribution of images of sexual activity by juveniles left behind a permanent record of the children’s participation in that activity.³⁶⁶ Third, closing the distribution network of child pornography was concluded necessary to stop the exploitation of children in the production of child pornography.³⁶⁷ But, in contrast, the Court noted that material that does “not involve live performance or photographic or other visual reproduction of live performances, retains First Amendment protection.”³⁶⁸

The Court thus made clear that works that did not depict actual children remained within the protection of the First Amendment, at least so long as they did not fall outside its sphere for distinct reasons, such as obscenity. Indeed, the Court strongly suggested that the continued protection of such works was a constitutional necessity, in order to ensure that works of value to society were not swept away along with pure child pornography. A “simulation” would be remain an alternative means by which to depict children engaged in sexual conduct, the Court held, if the depiction had literary or artistic value.³⁶⁹ The Court apparently was thinking primarily of youthful adults—“a person over the statutory age who perhaps looked younger could be utilized”—but it also noted the possibility of a pure

³⁶⁴See Brief of the American Civil Liberties Union, *supra* note 356, at 13.

³⁶⁵*Ferber*, 458 U.S. at 758-59.

³⁶⁶See *id.*

³⁶⁷See *id.*

³⁶⁸*Id.* at 765. The court did, however, note that a secondary justification for a ban on child pornography was its potential use by abusers to weaken the inhibitions of other children. See *id.* at 759.

³⁶⁹See *id.* at 763.

“simulation.”³⁷⁰ It was on this basis only that the Court held that “[t]he value of permitting live performances and photographic reproductions of children engaged in lewd sexual conduct are exceedingly modest, if not de minimis.”³⁷¹

In the early 1980s, the Court’s understanding of child pornography appears to have reflected that norm. In the decision below, in the New York Court of Appeals, the state government had argued that the law at issue in *Ferber* was constitutional because it would permit the use of adult “doubles” for works with artistic and literary value such as *Lolita*.³⁷² But in the years after, states and the federal government drafted increasingly strict child pornography laws. Congress, for example, joined the states that prohibited the distribution of images of minors in explicit conduct, even if not obscene, by the Child Pornography Prevention Act of 1984.³⁷³ The law of most states as well as federal law now criminalizes not just the production and distribution but also possession of child pornography.³⁷⁴ In *Osborne v. Ohio*,³⁷⁵ the Supreme Court upheld such prohibitions. But again, the Court’s judgment relied on the exploitation of actual children; the law at issue was premised on a legislative belief that it would put an end to a form of child abuse by putting an end to the market for images of that abuse.³⁷⁶ The Court held the law constitutional “[g]iven the importance of the State’s interest in protecting the victims of child pornography”:³⁷⁷ Again, child pornography was evil because it

³⁷⁰*Id.*

³⁷¹*Id.* at 762.

³⁷²See Brief of the American Civil Liberties Union, *supra* note 356, at 13. *But see infra* text accompanying note 619.

³⁷³See Pub. L. No. 98-292, 98 Stat. 204 (1984).

³⁷⁴In December 1997, Massachusetts became the 43rd state to criminalize possession of child pornography. See Doris Sue Wong, *Tougher child porn law applauded*, BOSTON GLOBE, Dec. 12, 1997, at B8.

³⁷⁵495 U.S. 103 (1990).

³⁷⁶See *id.* at 111.

³⁷⁷*Id.*

“permanently record[s] the victim’s abuse.”³⁷⁸ But the Court did again take note of a secondary rationale, presented by the appellants, that state action was justified because pedophiles use child pornography to seduce other children.³⁷⁹

In recent years, however, the Supreme Court has proved unwilling to countenance any further expansion of the regulation of child pornography. In *Jacobson v. United States*,³⁸⁰ the Court invalidated a federal child pornography conviction on entrapment grounds; the compelling interest in protecting children from the exploration of child pornography, the Court decided, did not justify the modification of an otherwise relevant principle of criminal procedure under the Constitution.³⁸¹ Further, in *United States v. X-Citement Video, Inc.*,³⁸² a 7-2 majority of the Court interpreted an amendment to the Protection of Children Against Sexual Exploitation Act of 1977 to require that in a child pornography prosecution the government must prove that a defendant had knowledge that the material at issue in the case actually was produced with the use of minors.³⁸³

Commentators have described these decisions as affirming the principle that, despite the expansion of laws to control child pornography, the existence of a real child has remained an essential element of any child pornography prosecution.³⁸⁴ State courts have reinforced this position, ruling that existing state statutes do not

³⁷⁸*Id.* at 103.

³⁷⁹*See id.* at 111 n.7 (citing DEP’T OF JUSTICE, ATTORNEY GENERAL’S COMMISSION ON PORNOGRAPHY, FINAL REPORT 649 (1986) (“A child who is reluctant to engage in sexual activity with an adult or to pose for sexually explicit photos can sometimes be convinced by viewing other children having ‘fun’ participating in the activity”). *See also supra* note 368.

³⁸⁰503 U.S. 540 (1992).

³⁸¹*See id.* at 548-49.

³⁸²513 U.S. 64 (1994).

³⁸³*See id.* at 72.

³⁸⁴The Child Pornography Prevention Act Of 1995: Hearings on S. 1237 Before the Judiciary Committee on the Judiciary (June 4, 1996) (statement of Frederick Schauer, Frank Stanton Professor of the First Amendment at the Kennedy School of Government, Harvard University, and Visiting Professor of Law, Harvard Law School), *available in* Westlaw, 1996 WL 10164718.

encompass “materials that merely offer the illusion that actual children are involved. . . . [T]he child’s participation in the act must be real.”³⁸⁵ The court quoted in the sentence above, for example, concluded that an Oregon law as drafted was in application “limited to media that, like other media listed in the statute—i.e., photographs, motion pictures, and videotapes—reproduce actual events involving children taking part in the acts being portrayed.”³⁸⁶

Surprisingly, although the 1986 report of the commission organized by Attorney General Edwin Meese to investigate pornography was widely regarded as hostile to the First Amendment,³⁸⁷ the report concluded that simulated child pornography was protected by the Constitution, at least to the extent it was not obscene,³⁸⁸ even while setting out the justifications for the prohibition of child pornography created with the participation of actual children.³⁸⁹ Like the Supreme Court before it, the Commission acknowledged that the “distinguishing characteristic” of child pornography was the fact that “actual children are photographed”³⁹⁰—a distinction proponents of the Act often ignore when citing to its report.³⁹¹ The Commission expanded upon *Ferber*, however, in concluding that the regulation of child pornography is strongly rooted in abuse prevention. The

³⁸⁵State v. Stoneman, 920 P.2d 535, 540 (Or. 1995).

³⁸⁶*Id.* at 540 n.3. The dissent, however, argued that “simulations” should be understood to include footage of actual children who had not engaged in sexual conduct, but only had been made to seem so. “For example, a film may portray a realistic image of what appears to be a sexual act by a child when, in reality, the image is a mere simulation created from film of an actual child innocently playing, dancing, or sleeping while fully clothed. In that circumstance, the conduct of both the child and film producer is perfectly lawful and not harmful to the child.” *Id.* at 554 (Durham, J., dissenting).

³⁸⁷See generally Philip Noble & Eric Nadler, UNITED STATES OF AMERICA VS. SEX: HOW THE MEESE COMMISSION LIED ABOUT PORNOGRAPHY (1986).

³⁸⁸See DEP’T OF JUSTICE, *supra* note 379, at 405 n.70.

³⁸⁹See *id.*, at 410-13.

³⁹⁰*Id.* at 405.

³⁹¹Ronald W. Adelman, *The Constitutionality of Congressional Efforts to Ban Computer-Generated Child Pornography: A First Amendment Assessment of S. 1237*, 14 J. MARSHALL J. COMPUTER & INFO. L. 483, 491 (1996).

production of child pornography leaves behind a permanent record, and the act of creating that record is itself molestation, and is the objective of the law.³⁹²

The Commission's elucidation of the harms that justified the prohibition of child pornography did touch upon concerns that might also apply to simulated child pornography—but for the most part, the Commission limited its rationales so that the participation of actual children was requisite. For example, the harm of a permanent record lies in that it can follow a participant throughout life, causing humiliation and embarrassment.³⁹³ The Commission noted that these harms are independent of the production.³⁹⁴ If a simulation resembled a real child, similar humiliation and embarrassment could result. But the Commission described child pornography as a record of an actual act, not the falsification of one;³⁹⁵ any humiliation and embarrassment appear premised on the revelation of a real event.³⁹⁶ Similarly, the Commission noted that the remedy of prohibition was tied to the specific circumstances of the production of child pornography with actual children. In other contexts, harm to performers would not justify the prohibition of their work product instead of their underlying conduct. But the use of actual children is virtually always surreptitious; the targeting of images was justified in this case because they were more accessible to law enforcement.³⁹⁷

The Commission also addressed the use of child pornography to convince other children to participate in sex acts with adults, offered as a secondary rationale in *Ferber*³⁹⁸ and later *Osborne*:³⁹⁹ The Commission did conclude that child pornography not only is used to break down the inhibitions and resistance of

³⁹²See DEP'T OF JUSTICE, *supra* note 379, at 405.

³⁹³See *id.* at 411.

³⁹⁴See *id.*.

³⁹⁵See *id.* at 406.

³⁹⁶See *id.* at 411.

³⁹⁷See *id.* at 412-13.

³⁹⁸See 458 U.S. at 759.

³⁹⁹See 495 U.S. at 111 n.7.

children, but feeds the appetite of pedophiles.⁴⁰⁰ But it also circumscribed the reach of this rationale. The Commission noted that sexually explicit materials depicting only adults are used for the same purpose, but “we do not take the phenomenon as sufficient to justify restrictions we would not otherwise endorse”⁴⁰¹ If one believes that secondary effects, standing alone, are sufficient to justify the prohibition of child pornography, there is no principled reason why one should not call for less “deviant” materials to be banned⁴⁰²—except that it would be virtually impossible to persuade the Supreme Court that such a radical extension of *Ferber* was necessary to serve a compelling government interest.⁴⁰³

A final rationale for the prohibition of child pornography explored by the Commission was that photographs are often an important, if not essential, form of evidence in child molestation prosecutions.⁴⁰⁴ But because children are often difficult witnesses, the task is made much simpler if the photographs are the offense itself.⁴⁰⁵ But this desire to facilitate the work of prosecutors is never said to justify prohibiting simulated images of children because they might mislead prosecutors, suggesting to them that an act of child molestation transpired when in fact the images were products only of the imagination: This final rationale is premised on the protection of children, not easing the burden of prosecutors for its own sake. Indeed, an essence of Constitution and Bill of Rights is the notion that the government should be required to work hard to prove its case.⁴⁰⁶ The protests of

⁴⁰⁰See Child Pornography Prevention Act of 1995, S. Rep. 104-358, at 12 (1996).

⁴⁰¹DEP’T OF JUSTICE, *supra* note 379, at 411 n.74.

⁴⁰²See The Child Pornography Prevention Act Of 1995 (statement of Bruce A. Taylor), *supra* note 233.

⁴⁰³See The Child Pornography Prevention Act Of 1995 (statement of Frederick Schauer), *supra* note 384.

⁴⁰⁴See DEP’T OF JUSTICE, *supra* note 379, at 412.

⁴⁰⁵See *id.*

⁴⁰⁶See, e.g., T.J. Hiles, Comment, *Civil Forfeiture of Property for Drug Offenders Under Illinois and Federal Statute: Zero Tolerance, Zero Exceptions*, 25 J. MARSHALL L. REV. 389, 410 (1992).

certain commentators to the contrary, there has been no showing that the confusion, if any, produced by simulated child pornography has resulted in problems for the administration of justice anywhere near the magnitude of the problems that result from the difficulty of having a child testify in court.⁴⁰⁷

The historical protection of simulated child pornography has parallels in other areas of law. Since 1966, no work of written literature—simulations, if one will—ultimately has been upheld as obscene by the courts.⁴⁰⁸ But no court has established a *constitutional* guarantee to protect simulations. The Supreme Court has ruled that potentially obscene text, published as a book, was not entitled to First Amendment protection merely because it had no pictorial content.⁴⁰⁹ Cases have continued to be filed against literature and works in other mediums, such as Anthony Burgess' *A Clockwork Orange*, which was unsuccessfully prosecuted in 1973.⁴¹⁰ Indeed, one commentator has speculated that one motivation for the tightening of child pornography laws in the 1980s was a case in which, among other problems faced by the prosecution, was whether some of the images the defendant possessed were sketches of real children or simply illustrations,⁴¹¹ although the changes enacted in the 1980s did not actually address simulations.

Given that, prior to the widespread availability of digital technology, realistic simulations were uncommon,⁴¹² it is understandable that relatively little was written on the subject. The default assumption for commentators, as for the courts, appears to have been that works created without the participation of actual children were no threat and of no harm. One commentator noted that the evil that

⁴⁰⁷See *supra* text accompanying note 529.

⁴⁰⁸See Felice Flannery Lewis, LITERATURE, OBSCENITY, AND LAW 225 (1976).

⁴⁰⁹See *Kaplan v. California*, 413 U.S. 115, 118-19 (1973).

⁴¹⁰See Lewis, *supra* note 408, at 225.

⁴¹¹See Jeffrey J. Kent & Scott D. Truesdell, *Spare the Child: The Constitutionality of Criminalizing Possession of Child Pornography*, 68 OREGON L. REV. 363, 370 (1989) (citing *United States v. Langley*, No. 86-60010 (D. Or. Jan. 16, 1987)).

⁴¹²See *infra* text accompanying notes 515-517.

justified putting child pornography outside the First Amendment was the sexual exploitation of real children, and any statutory ban therefore must be limited to actual or photographically recorded child sex.⁴¹³ Thus, by definition, writings and imaginary drawings of children having sex were not child pornography.⁴¹⁴

Similarly, another set of commentators noted that their focus was visual works because they involved “actual conduct which directly harms a child. By contrast, child pornography in written form does not necessarily entail this harm.”⁴¹⁵ Yet a further commentator proposed a theoretical distinction between “child erotica” and child pornography.⁴¹⁶ The latter encompasses photographs that are not sexually explicit and drawings and writings;⁴¹⁷ child pornography, which was and is still illegal, was a distinct subset because of its effect on the child portrayed.⁴¹⁸

In the early 1990s, therefore, individuals using digital technology to create or alter images would have been on safe ground to assume that any images they created from their imagination, even if they would be culpable if created with the participation of actual children, were protected by the Constitution. It would be inconsistent for simulations to be allowed in one First Amendment context, such as obscenity, and not in another; further, commentators, when they had turned to simulations, were confident of their constitutionality. But there in fact has been long-running debate over if and how the same First Amendment standards should apply in every context.⁴¹⁹ Furthermore, child pornography always has been an

⁴¹³See Russell W. Galloway, *Basic Free Speech Analysis*, 31 SANTA CLARA L. REV. 883, 900 (1991).

⁴¹⁴See *id.*

⁴¹⁵Kent & Truesdell, *supra* note 411, at 365 n.8.

⁴¹⁶See Kenneth V. Lanning, *Collectors*, in CHILD PORNOGRAPHY AND SEX RINGS 83 (Ann Wolbert Burgess, ed. 1984).

⁴¹⁷See *id.*

⁴¹⁸See *id.*

⁴¹⁹See, e.g., Robert Corn-Revere, *New Technology and the First Amendment: Breaking the Cycle of Repression*, 17 HAST. COMM./ENT. L.J. 247, 277-78 (1994).

outlier, difficult to square with general First Amendment principles.⁴²⁰ Although ordinarily “[t]he first amendment assumes that the public may react wrongly to information, be antagonized, or even be duped or misled,” when children are at stake, the usual and expected principles are often forgotten—and trampled.⁴²¹

B. A Changing Paradigm

The Child Pornography Prevention Act of 1996⁴²² expanded the federal prohibitions on child pornography such that simulations of children engaged in explicit sexual conduct are now illegal. The relevant provision, as enacted, defines child pornography as “any visual depiction, including any photograph, film, video image or picture” that “is, or appears to be, of a minor engaging in sexually explicit conduct” or “is advertised, promoted, presented, described, or distributed in such a manner that conveys the impression that the material is or contains a visual depiction of a minor engaging in sexually explicit conduct.”⁴²³ Possession of images in violation of the law is punishable by up to five years in prison for first offenders. Producers and distributors can expect up to 30 years imprisonment.⁴²⁴ The law does provide an affirmative defense for images produced using actual adults, but only so long as they are not described as child pornography.⁴²⁵ This law

⁴²⁰Professor Richard H. Fallon, Jr. of Harvard Law School, who was a clerk to Justice Powell when *Ferber* was before the Court, often has recounted to his classes that he recommended against granting certiorari, because the assertion that child pornography was a separate proscribable category under the First Amendment was without merit; the Justices disagreed, 9-0.

⁴²¹Donald E. Lively, *Fear and the Media: A First Amendment Horror Show*, 69 MINN. L. REV. 1071, 1096 (1985). *See also infra* text accompanying notes 487-488, 490-491.

⁴²²Pub. L. 104-208, 110 Stat. 3009-26 (1996).

⁴²³18 U.S.C. § 2256 (1997).

⁴²⁴*See* 18 U.S.C. § 2256 (1997).

⁴²⁵*See* 18 U.S.C. § 2252A(c) (1997) (an affirmative defense lies if “(1) the alleged child pornography was produced using an actual person or persons engaging in sexually explicit conduct; (2) each such person was an adult at the time the material was produced; and (3) the defendant did not advertise, promote, present, describe, or distribute the material in such a

may be the first of many that tries to so regulate digital imagery; similar legislation has been adopted in states such as Illinois.⁴²⁶

Consequently, the assumption of *Ferber* and its progeny, that adults and simulations that appear to be children can and must continue to be constitutionally protected, is under direct attack.⁴²⁷ A sponsor of the Act, Senator Orrin Hatch (R-UT), noted that it did not create new or expanded restrictions or regulations regarding the Internet.⁴²⁸ This may be literally true, but it misses the point; the Act is a broad-based attack against technology in general. Its restrictions extend beyond the Internet to digital imagery in the privacy of the home. Indeed, what Hatch and other sponsors have actually done is blend the harms of the exploitation of actual children with common fears about technology to create a bogeyman, regardless if digital imagery based on the facts presents a real danger, or, if so, if it should or can be regulated. Hatch claimed that: “It is impossible for any decent American not to be outraged by child pornography and the sexual exploitation of children. . . . While federal law has failed to keep pace with technology, the purveyors of child pornography have been right on line with it.”⁴²⁹

Some of the Act’s sponsors do appear to have acknowledged the potentially far-reaching implications of the Act. Senator Joseph R. Biden Jr. (D-DE) described his motivation as “because of advances in computer technology, child

manner as to convey the impression that it is or contains a visual depiction of a minor engaging in sexually explicit conduct”).

⁴²⁶See 720 ILL. COMP. STAT. ANN. 5/11-20 (West 1997), amended by 1997 Ill. Leg. Serv. P.A. 90-68 (West). Canada and the United Kingdom also have adopted similar legislation. See Jennifer Stewart, Comment, *If This Is the Global Community, We Must Be on the Bad Side of Town: International Policing of Child Pornography on the Internet*, 20 HOUS. J. INT’L L. 205, 218 & nn.88-89 (1997)

⁴²⁷See John Schwartz, *New Law on ‘Virtual’ Child Porn Is Criticized: Legitimate Works May be at Risk*, SEATTLE TIMES, Oct. 6, 1996, at A24.

⁴²⁸See *Senate Panel Backs Hatch’s Anti-Kiddie-Porn Bill*, SALT LAKE TRIB., July 26, 1996, at A19.

⁴²⁹*Id.*

pornographers are getting around the law by using ‘computer morphing.’”⁴³⁰ In theory, at least, computers can be used to take the face of a child and put it on the body of an adult engaging in a sexually explicit act, or erase a child’s bathing suit to create an explicit image.⁴³¹ “In other words, they are preying upon children without anyone ever knowing it.”⁴³² But Biden also stated that he was “concerned that a provision in this bill which criminalizes the depiction of something that appears to be a minor engaging in sexually explicit conduct will not pass constitutional muster.”⁴³³ Nevertheless, he let the Act become law without any challenge to the provisions about which he expressed concern.⁴³⁴ Biden merely proposed a narrow amendment, which would endure if the broader provisions of the Act were struck down, and it was not even enacted.⁴³⁵

To the surprise of many commentators, a federal District Court upheld the constitutionality of the Act in *Free Speech Coalition v. Reno*.⁴³⁶ The plaintiffs had emphasized that the rationale for the prohibition of child pornography is the necessity of eliminating the market for such materials, in order to prevent harm to participating children’s physical, psychological, and mental health.⁴³⁷ They therefore alleged that the Act was unconstitutional because it swept “within its

⁴³⁰*Biden’s Legislation to Crack Down on Child Pornography, to Give Longer Prison Sentences for Rape, Become Law*, GOV’T PRESS RELEASES, Oct. 4, 1996, available in Westlaw, 1996 WL 11125623.

⁴³¹*See id.* See also *infra* text accompanying notes 463, 643.

⁴³²*Id.*

⁴³³*See* 142 Cong. Rec. S11,900 (daily ed. Sept. 30, 1996) (statement of Sen. Biden).

⁴³⁴*See supra* notes and text accompanying notes 422-425.

⁴³⁵*See* Child Pornography Prevention Act of 1995, S. Rep. 104-358, *supra* note 400, at 31. The only members of the Committee on the Judiciary to doubt the constitutionality of and oppose the Act outright were Russell Feingold (D-WI) and Paul Simon (D-IL).

⁴³⁶No. 97-00281, 1997 WL 487758 (N.D. Cal. Aug. 12, 1997). The case is currently on appeal in the Ninth Circuit. Maria Seminerio, *ACLU, others file appeal to simulated online kiddie porn law* (last modified Sept. 30, 1997)

<<http://www.zdnet.com/zdnn/content/zdnn/0930/zdnn/0006.html>>. *But see infra* note 604.

⁴³⁷*See* *Free Speech Coalition v. Reno*, No. 97-00281, 1997 WL 487758, at *1.

purview materials that involve no actual children and that traditionally and logically have never been considered to be child pornography.”⁴³⁸ But reaching a decision without trial, U.S. District Judge Samuel Conti upheld the Act, finding that its primary (and constitutional) purpose was to prevent the negative effects of sexual images of children rather than to prohibit the images themselves.

The statute, Conti held, was “passed in order to prevent the secondary effects of the child pornography industry, including the exploitation and degradation of children and the encouragement of pedophilia and molestation of children.”⁴³⁹ Citing the broad latitude granted by the U.S. Supreme Court to Congress and the states in regard to child pornography, Conti held that “even if no children are involved in the production of sexually explicit materials . . . the devastating secondary effect that such materials have on society and the well-being of children merits the regulation of such images.”⁴⁴⁰ Conti rejected the argument that prohibitions on child pornography can only be based on the harm caused to the minors used to produce it, noting that “Congress recognized that the dangers of child pornography are not limited to its effect on the children actually used in the pornography.”⁴⁴¹ Therefore, Conti concluded, the Act’s protection of children from the harms brought on by child pornography and the child pornography industry advanced a compelling governmental interest, sufficient to exempt the Act from the strictures of the First Amendment.⁴⁴²

Conti further noted that the Act, by broadly prohibiting the depiction of minors engaged in explicit sexual conduct, was not in violation of the First Amendment for being content-based, because the depiction were prohibited

⁴³⁸*Id.* at *2.

⁴³⁹*Id.*

⁴⁴⁰*Id.*

⁴⁴¹*Id.*

⁴⁴²*See id.*

independent of their context.⁴⁴³ Furthermore, content-neutral regulations are upheld under the First Amendment if they advance “important governmental interests unrelated to the suppression of free speech,” and do not “burden substantially more speech than necessary to further those interests.”⁴⁴⁴ Conti held that the Act met these conditions.⁴⁴⁵ In addition, alternative channels would remain open because “plaintiffs are free to communicate any substantive message they desire, through any medium they desire, as long as they are not depicting actual or computer-generated children engaged in sexually explicit conduct.”⁴⁴⁶

Finally, Conti noted that the Act did not suffer from the flaw of vagueness: “Although there may be a degree of ambiguity in the phrase ‘appears to be a minor’ . . . any ambiguity . . . can be resolved by examining whether the work was marketed and advertised as child pornography.”⁴⁴⁷ The Act’s “safe harbor”⁴⁴⁸ was sufficient to ameliorate any lingering constitutional concerns, he concluded: “[A]s long as the person portrayed in the work is an adult, and the work is not marketed or advertised as child pornography and does not create the impression that it is child pornography,” then the affirmative defense applies.⁴⁴⁹

The decision in *Free Speech Coalition* took many by surprise. Conti’s protestations to the contrary, his ruling is in open conflict with *Ferber*. *Ferber* did not justify the prohibition of child pornography because of its effects on non-participants.⁴⁵⁰ It has long been assumed that the interests of a real child must be at

⁴⁴³*See id.*

⁴⁴⁴*Id.*

⁴⁴⁵*See id.*

⁴⁴⁶*See id.* at *6 (*citing* Defendant’s Memorandum in Support of Motion for Summary Judgment, at 20, *Free Speech Coalition v. Reno*, 1997 WL 487758 (N.D. Cal. Aug. 12, 1997) (No. 97-00281)).

⁴⁴⁷*See Free Speech Coalition v. Reno*, No. 97-00281, 1997 WL 487758, at *4.

⁴⁴⁸*See id.* at *5.

⁴⁴⁹*Id.*

⁴⁵⁰*See supra* text accompanying notes 363-371.

stake.⁴⁵¹ Even Frederick Schauer, a former member of the staunchly anti-pornography Meese Commission, for example, testified before Congress that computer-generated child pornography in general was “highly likely” to be deemed constitutional.⁴⁵² This is because *Ferber* depended on two prongs: past and future harms.⁴⁵³ Simulated child pornography may lead to future harms, but its creation is harmless. “[T]o include drawings or computer-generated images of non-recognizable children, which is keyed to no justification that is recognized in existing law, is unconstitutional on the existing state of the law.”⁴⁵⁴

Other commentators were not surprised. Dee Jepsen, President of “Enough is Enough!” had testified that all the Act did was “address child pornography from the perspective of the 1990’s.”⁴⁵⁵ Because “[a] direct relationship exists between pornographic literature and the sexual molestation of young children,” its prohibition is justified, no matter what its origins.⁴⁵⁶ But even if technology has advanced in the 1990s, there is no more justification for a knee-jerk response than there is for a plodding response, as seen in the previous Part in the context of evidence. Jepsen’s own comments demonstrate the flawed foundation on which the Act is built; he admitted that “[i]t is difficult to quantify ‘cause and effect’ as it relates to what actions mentally-recorded stimuli initiate or encourage. We must rely often upon ‘antidotal’ evidence.”⁴⁵⁷ Such practice cannot generate good law.

⁴⁵¹See John Quigley, *Child Pornography and the Right to Privacy*, 43 FLA. L. REV. 347, 392 (1991).

⁴⁵²See Cheryl Wetzstein, *Simulated child porn is Senate bill’s target: Technology ahead of law, Hatch says*, WASH. TIMES, June 5, 1996, at A8.

⁴⁵³See The Child Pornography Prevention Act Of 1995 (statement of Frederick Schauer), *supra* note 384.

⁴⁵⁴Debra Gersh Hernandez, *Papers threatened with ‘porn’ purge*, EDITOR & PUBLISHER, July 13, 1996, at 22.

⁴⁵⁵The Child Pornography Prevention Act Of 1995: Hearings on S. 1237 Before the Senate Committee on the Judiciary (June 4, 1996) (statement of Dee Jepsen, President, “Enough is Enough!”), *available in* Westlaw, 1996 WL 10164703.

⁴⁵⁶See *id.*

⁴⁵⁷*Id.*

C. The Looking Glass

The problem of simulated child pornography is simple, claim the Act's supporters. Law has failed to keep pace with technology; meanwhile, purveyors of child pornography have gone high-tech and online.⁴⁵⁸ Not only can innocent images, including images that do not even depict children, be transformed into child pornography, but depictions of children engaging in almost any imaginable form of sexual conduct can be created entirely by computer.⁴⁵⁹ As a result, it may be virtually impossible for prosecutors to identify the individuals depicted, or to prove that the offending material was produced using real children.⁴⁶⁰ But the Act's solution, as validated by *Free Speech Coalition*, while seeking to do good on the digital frontier, has in fact cut First Amendment jurisprudence loose from its moorings. Even if one accepts the claims above—and as seen in the context of evidence, it is often true that law has failed to pace technology⁴⁶¹—one must consider whether the Act's prohibitions targeted at digital images are necessary, based on the current state of law and practice. Further, even if legal proceedings may be disrupted, one must consider whether digital imagery really comprises the specter that the Act's proponents would want us to believe it is.

If an image is not a complete work of fiction, but an altered photograph in which a child is still recognizable, or an entirely original work made to resemble an actual child, then there is a strong argument that the image is susceptible to government regulation under current law and the Constitution. The possibility of

⁴⁵⁸See The Child Pornography Prevention Act Of 1995: Hearings on S. 1237 Before the Senate Committee on the Judiciary (June 4, 1996) (statement of Senator Orrin G. Hatch), *available in* Westlaw, 1996 WL 10164727.

⁴⁵⁹See *id.*

⁴⁶⁰See *id.*

⁴⁶¹See *supra* text accompanying note 282.

the creation of such images has been a focus of many supporters of the Act. “Computer graphics software and morphing allow pornographers to alter the images of the faces and bodies of children so they appear to be engaged in explicit sexual acts even though the original images depicted completely unrelated activity.”⁴⁶² Images of the heads of children, pulled from magazines and store catalogs where young children are used as models for the advertising of many benign products, can be combined with a pornographic picture of the adult body.⁴⁶³ These children would be subject the same kind of life-long shame and embarrassment with which *Ferber* was concerned and in part relied.⁴⁶⁴ The appearance of an image of a child in pornography is itself an emotional harm, they argue, through its invasiveness and suggestiveness.⁴⁶⁵ Other threats commentators claim are real include extortion and blackmail,⁴⁶⁶ and enhanced seductive effect if a child can be shown images of friends engaging in sex acts.⁴⁶⁷

But the fact that “the images of the faces of actual, recognizable children can be expropriated by pornographers and circulated in cyberspace”⁴⁶⁸ is not proof that it is a problem of sufficient magnitude—or for that matter, any magnitude—worthy of attention.⁴⁶⁹ Previously, although altered pictures might be deemed obscene,

⁴⁶²*Good Anti-Porn Law*, SALT LAKE TRIB., Oct. 6, 1996, at AA1.

⁴⁶³The Child Pornography Prevention Act Of 1995 (statement of Bruce A. Taylor), *supra* note 233. *See also infra* text accompanying note 643.

⁴⁶⁴*See supra* text accompanying notes 393-396.

⁴⁶⁵Candyce Beneke, *Brief for Respondent, The Thirteenth Annual John Marshall Law School National Moot Court Competition in Information Technology and Privacy Law*, 13 J. MARSHALL J. COMPUTER & INFO. L. 537, 556 (1995)

⁴⁶⁶Debra D. Burke, *The Criminalization of Virtual Child Pornography: A Constitutional Question*, 34 HARV. J. ON LEGIS. 439, 466 (1997).

⁴⁶⁷*See id.* at 470.

⁴⁶⁸*Good Anti-Porn Law*, *supra* note 462, at AA1.

⁴⁶⁹*See supra* text accompanying notes 364, 384

they did not constitute child pornography,⁴⁷⁰ without strife, even though such images could be created by low-tech means.⁴⁷¹ Conspicuously lacking is any proof that computer-generated images are a problem any more severe,⁴⁷² or that they cannot be dealt with via existing law and doctrine, such as false light privacy.⁴⁷³ The claims of proponents of the Act are conclusory, such as that an image alone makes a child vulnerable to sexual dependency.⁴⁷⁴ The only example that has been given was described as crude and an obvious forgery—and Canadian.⁴⁷⁵ Deputy Assistant Attorney General Kevin DiGregory testified that the Department of Justice has not come across any pedophiles who have actually used the technology.⁴⁷⁶ Furthermore, simulated child pornography that resembles or is based on actual images of real children again was not the subject of *Ferber*. That decision predicated the harm produced by images that are a “permanent record of the child’s participation.”⁴⁷⁷ If there was no participation, there is arguably no more reason that such images should be prohibited than any other falsified images which produce shame and embarrassment should be prohibited.⁴⁷⁸

⁴⁷⁰See Joanna H. Kim, Comment, *Cyber-Porn Obscenity: The Viability of Local Community Standards and the Federal Venue Rules in the Computer Network Age*, 15 LOY. L.A. ENT. L.J. 415, 424 (1995).

⁴⁷¹The claim that altered images were not previously prosecutable as child pornography is questionable, given that David O. Cobb, a teacher at Phillips (Andover) Academy in New Hampshire, was convicted for several hundred composite photos he had of children’s heads imposed onto pornographic pictures of adult bodies. See The Child Pornography Prevention Act Of 1995 (statement of Bruce A. Taylor), *supra* note 233.

⁴⁷²See Brief of the American Civil Liberties Union, *supra* note 356, at 21.

⁴⁷³See Burke, *supra* note 466, at 470. See also *infra* text accompanying notes 853-861.

⁴⁷⁴See Beneke, *supra* note 465, at 556.

⁴⁷⁵See *infra* text accompanying notes 641-646.

⁴⁷⁶See Brief of the American Civil Liberties Union, *supra* note 356, at 22.

⁴⁷⁷458 U.S. 747, 759 (1982).

⁴⁷⁸*Cf.* *Hustler Magazine v. Falwell*, 485 U.S. 46 (1988) (rejecting emotional distress claim based on illustration portraying respondent having a drunken incestuous rendezvous with his mother in an outhouse). *But see infra* note 480.

But the issue of simulations that resemble real children is largely a red herring. Despite support for the proposition in *Ferber* that such images cannot be prohibited, commentators largely appear to agree that they can,⁴⁷⁹ and they may be regulatable on alternative grounds.⁴⁸⁰ More significantly, however, is that the majority of debate—and constitutional questions—center around the creation of images that are entirely products of the imagination, with no anchor in reality. Again, current law is structured around the premise that an actual child to be harmed by the production of the image, or by its lingering presence because “[t]he child in the photograph is young forever.”⁴⁸¹ The prohibition of child pornography is premised on the chain of effects that flow from the abuse inherent in its making; such images can be used for blackmail purposes,⁴⁸² and victims have been known to commit burglary to recover such images, for example.⁴⁸³ Indeed, child pornography is sometimes simply equated with child molestation.⁴⁸⁴ But if no actual child is involved in its production, that simply cannot be the case—unless one adopts the convoluted logic of commentators such as Catherine MacKinnon who argue—and in almost any other context but this would be and usually are derided for so doing⁴⁸⁵—that imagination is in fact reality.⁴⁸⁶

⁴⁷⁹See, e.g., Hernandez, *supra* note 454, at 22.

⁴⁸⁰In *Hustler Magazine*, that Jerry Falwell was a public figure was not in dispute. See 485 U.S. at 57. In contrast, the tort of emotional distress is still a valid cause of action for nonpublic figures—perhaps such as Falwell’s mother. See Rodney A. Smolla, *Emotional Distress and the First Amendment: An Analysis of Hustler v. Falwell*, ARIZ. ST. L.J. 423, 463-67 (1988).

⁴⁸¹Lanning, *Collectors*, *supra* note 416, at 83.

⁴⁸²See Burke, *supra* note 466, at 466.

⁴⁸³See *id.*

⁴⁸⁴See Jennifer Gregg, Note, *Caught in the Web: Entrapment in Cyberspace*, 19 HAST. COMM./ENT. L.J. 157, 162 (1996) (section entitled “Online Child Pornography and the Current Response of Law Enforcement” in fact discusses solicitation).

⁴⁸⁵See, e.g., Carlin Romano, *Between the Motion and the Act*, NATION, Nov. 15, 1993, at 563.

⁴⁸⁶CATHERINE A. MACKINNON, ONLY WORDS 36 (1993) (“To say it, is to do it, and to do it, is to say it.”) But even MacKinnon premises her work on that sex “is happening,” to the bodies of real people. See *id.* at 26.

But in the child pornography context, the distinction between imagination and reality is commonly jettisoned.⁴⁸⁷ Indeed, commentators record that child pornography legislation is largely political: “[I]f a law is passed in the name of children, it must be constitutional.”⁴⁸⁸ The penalties for creating hard-core child pornography are now so severe that almost none has been produced commercially in the United States since the 1970s.⁴⁸⁹ But, as Hatch has done, a politician can condemn it with the comfortable knowledge that few will disagree; it is a scare tactic, like Communism and drug use.⁴⁹⁰ “What may have begun as a legitimate concern for the well-being of children quickly turned into a ‘moral panic’ which swept the nation.”⁴⁹¹ The Act’s supporters, for example, assert that laws against child pornography must be extended because of “pedophiles’ use of new technology”⁴⁹²—the actual nature of these images is seemingly irrelevant. Indeed, child pornography laws even prior to the era of digital technology already extended questionably far; a century after Lewis Carroll created photographs of naked children with their parents’ permission, they are still prosecutable, despite the fact that no victim is now alive—if there ever was a proper “victim.”⁴⁹³

The current state of the law indicates that new legislation is not necessary to deal with problems digital imaging may create in regard to child pornography; the refining of existing doctrines and procedures would be sufficient. As in the context of evidence, the potential problems are not new, but mere enhancements of existing ones. The primary problem of legal procedure raised as a justification by

⁴⁸⁷See *supra* text accompanying note 356, *infra* text accompanying note 496.

⁴⁸⁸See Brief of Appellants, at 12, *Free Speech Coalition v. Reno*, No. 97-16536, 1997 WL 487758 (9th Cir., filed Sept. 26, 1997).

⁴⁸⁹See, e.g., DEP’T OF JUSTICE, *supra* note 379, at 409. *But see infra* text accompanying note 539.

⁴⁹⁰See Charles Platt, ANARCHY ONLINE § 2 (Net Sex) 91 (1996).

⁴⁹¹See Lawrence A. Stanley, *The Child Porn Myth*, 7 CARDOZO ARTS & ENT. L.J. 295, 297 (1989).

⁴⁹²*Good Anti-Porn Law*, *supra* note 462, at AA1. *See also infra* note 617.

⁴⁹³See Quigley, *supra* note 451, at 393 n.338.

the Act by its supporters is the prospect that, upon examining a photograph, prosecutors may not be able to determine if it is of a real child, justifying the pursuit of criminal charges, or merely a simulation.⁴⁹⁴ “[C]omputers can . . . be used to alter sexually explicit photographs, films, and videos in such a way as to make it virtually impossible for prosecutors to identify the individuals, or to prove that the offending material was produced using children.”⁴⁹⁵ Supporters such as Bruce A. Taylor, President and Chief Counsel of the National Law Center for Children and Families, therefore conclude that all such images should be prohibited: “If you can’t tell the difference . . . there isn’t any difference.”⁴⁹⁶

But this is simply not true.⁴⁹⁷ While there is precedent for remedial measures in cases of otherwise insurmountable prosecutorial barriers,⁴⁹⁸ simulated child pornography is not such a case. While supporters of the Act may claim that technology can make such a good counterfeit that no one can tell the difference between a photograph and a computer-generated image,⁴⁹⁹ experts in special effects disagree; the technology does not exist—at least, not yet. To a computer, it’s the little things that are most confusing about humanity: e.g., the skin, its subtle sheen, and the complexity of pores.⁵⁰⁰ “The more realistic it tries to get, the faker and faker it can tend to get.”⁵⁰¹ Likewise, although DiGregory testified that “[a]ll that

⁴⁹⁴See S. Rep. 104-358, *supra* note 400, at 20.

⁴⁹⁵The Child Pornography Prevention Act Of 1995 (statement of Senator Orrin G. Hatch), *supra* note 458.

⁴⁹⁶Wetzstein, *supra* note 452, at A8.

⁴⁹⁷See *supra* text accompanying notes 390-392.

⁴⁹⁸See Burke, *supra* note 466, at 471. Burke does not address the constitutionality of such measures, other than cursorily noting the light burden required in other contexts and in child pornography prosecutions, such as proof that it moved in interstate commerce. *See id.*

⁴⁹⁹*Congress Broadens Rules on What Can Be Called Child Pornography*, SACRAMENTO BEE, Oct. 5, 1996, at A11 (quoting Bruce A. Taylor, President of the National Law Center for Children and Families).

⁵⁰⁰See Bruce Handy, *Have Gigabytes, Will Act: Is a Digital George Burns the Answer to the Movies’ Malaise? We’ll Find Out!*, TIME, Sept. 1, 1997, at 72.

⁵⁰¹*Id.* (quoting Dennis Muren).

will be necessary will be an inexpensive computer, readily available software and a photograph of a neighbor's child shot while the child walked to school or waited for the bus,"⁵⁰² the reality is not so simple. It is true that image editing and morphing software, costing as little as \$50 or \$100, is available at virtually any computer store, or through mail-order catalogs.⁵⁰³ But the high-powered software—and more importantly, the skill—required to create realistic images that can fool even experts have not been shown to be common.⁵⁰⁴

Furthermore, even today courts often must consider whether a photograph is an actual child. For example, even if an image is authentic, it may be difficult to determine if the person depicted is a minor.⁵⁰⁵ The courts have found solutions other than excommunicating all images that could be of a minor, and other than inverting of the traditional notice of the burden of proof, sending innocents to jail to ensure the punishment of the guilty. Ordinarily, the trier of fact is trusted to determine the age of those persons depicted; no one, such as their photographer, need verify them.⁵⁰⁶ A further solution is to call upon the expert testimony of pediatricians.⁵⁰⁷ Commentators do urge caution in relying on such testimony,⁵⁰⁸ but

⁵⁰²Reply in Support of Defendant's Memorandum for Judgment on the Pleadings or Alternatively for Summary Judgment, at 2, *Free Speech Coalition v. Reno*, 1997 WL 487758 (N.D. Cal. Aug. 12, 1997) (No. 97-00281).

⁵⁰³*See* The Child Pornography Prevention Act Of 1995 (statement of Senator Orrin G. Hatch), *supra* note 458.

⁵⁰⁴Commentators frequently note that such images *can* be created, but fail to address if they *are* being created. *Cf. infra* text accompanying notes 475-476, 672, 732.

⁵⁰⁵*See* Brief of Appellants, *supra* note 488, at 41 (*citing* *American Library Ass'n v. Reno*, 33 F.3d 78, 90 (D.C. Cir. 1995)). *See also infra* text accompanying note 600.

⁵⁰⁶*See* Quigley, *supra* note 451, at 391-92.

⁵⁰⁷*See* Stanley, *supra* note 491, at 327. *See, e.g.,* *United States v. Marquardt*, 949 F.2d 283 (9th Cir. 1991).

⁵⁰⁸In other contexts, photographs may not be used as proof of age of persons depicted. *See* Quigley, *supra* note 451, at 392.

multiple states provide for it.⁵⁰⁹ Indeed, expert testimony has been relied upon to determine not just the age of children but that real children are depicted, and not wax dummies.⁵¹⁰ If experts can make such determinations today, no principled distinction has been put forward as to why they could not do so for digital images.⁵¹¹ Further, as discussed previously, if experts cannot distinguish whether an image is a forgery or not, commentators urge that no image should be accepted as evidence, not that all such images should be regarded as authentic.⁵¹²

Proponents of the Act discount not just the competence of expert witnesses but of non-expert factfinders; juries are commonly entrusted to evaluate whether photographs are authentic, based on their personal perusal of them, in child pornography cases.⁵¹³ In *United States v. Nolan*, the court noted that “ordinary people in today’s society are quite accustomed to seeing photographs and to distinguishing them from other forms of visual representations. We believe it to be within the range of ordinary competence for someone not a photography expert to determine that she is viewing a photograph rather than, say, an artistic reproduction”⁵¹⁴ It is true, however, that *Nolan* was decided prior to widespread digital imagery. The court held that “common sense tells us that considerable skill and expense would be required to make realistic composites of activities of these types from other sources, if indeed they can be made.”⁵¹⁵ A “conglomeration of parts, body parts, would be very bizarre appearing, because of the differences in

⁵⁰⁹See T. Christopher Donnelly, Note, *Protection of Children from Use in Pornography: Towards Constitutional and Enforceable Legislation*, 12 U. MICH. J. OF LAW REFORM 295, 320 (1979).

⁵¹⁰See *United States v. Nolan*, 818 F.2d 1015, 1018 (1st Cir. 1987).

⁵¹¹*Cf. supra* text accompanying note 355.

⁵¹²See *supra* text accompanying notes 292-294.

⁵¹³See *Nolan*, 818 F.2d at 1018.

⁵¹⁴*Id.* at 1017-18.

⁵¹⁵*Id.* at 1019.

size, texture.”⁵¹⁶ The court thus rejected any contention that images before it of children engaged in explicit sexual conduct could be computer-generated: “There is no evidence in the record that possibilities along these lines exist, much less that the costs of such technical means, if extant, are low enough to have been practicable for the manufacture of pornographic magazines like these.”⁵¹⁷

Today, little more than a decade later, the reasoning and conclusion of *Nolan* do appear quaint. *Nolan*, like *Ferber*, was decided in an era in which “we did not have the wizardry of the Internet and World Wide Web, there were no Pentium processors, it was before ‘desktop publishing’ reached every desk top, before we moved from the obviousness of ‘Max Headroom’ to the not-so-obvious ‘Jurassic Park,’ and before color copiers could be made to copy money so well that the U.S. Treasury was forced to redesign our currency.”⁵¹⁸ But its essential conclusion endures: there is no need to cast digital imagery as a bogeyman. The advance of technology does not purge existing First Amendment interests, already addressed and shielded by the law. Again, although limited by the technology of its era, *Ferber* did explicitly address the possibility of computer simulations of children engaged in explicit sexual conduct, and held them to be constitutionally protected;⁵¹⁹ *Ferber*’s foundation—rooted in the Constitution, not statute⁵²⁰—remains the elimination of the market for child pornography that requires the

⁵¹⁶*Id.*

⁵¹⁷*Id.* at 1019-20.

⁵¹⁸The Child Pornography Prevention Act Of 1995 (statement of Bruce A. Taylor), *supra* note 233.

⁵¹⁹*See* The Child Pornography Prevention Act Of 1995 (statement of Frederick Schauer), *supra* note 384.

⁵²⁰*See* Burke, *supra* note 466, at 439. *See also* Aman v. State, 409 S.E.2d 645, 646 (Ga. 1991) (construing the statutory term “depict a minor” to be required to be understood “as limited to any photographic representation that was made of a human being who at that time was a minor”).

exploitation of real children for its production,⁵²¹ and not as some contend the protection of “imaginary ones conjured up in the minds of its viewers.”⁵²²

Which is not to say that no change in the law may be necessary. Although courts, for example, recognized that child pornography stored in digital format were included in existing laws prohibiting the shipment of tangible pornography in interstate commerce,⁵²³ it was determined prudent to amend such statutes to recognize the existence of computers.⁵²⁴ Since 1988, federal child pornography laws in fact have addressed the *transport* of child pornography by computer.⁵²⁵ But any changes in other federal child pornography laws should be tempered to real needs, not imagined perils. Child pornography *simulated* by computer has become an issue relatively suddenly.⁵²⁶ But courts have evidenced a likewise ability to apply existing child pornography statutes on the digital frontier: “That pornographic images of children are scanned into a computer rather than pressed onto the pages of a magazine, or that the images are stored on a hard drive rather than in a shoebox, does not change the fact that a defendant possesses pornographic representations of actual children.”⁵²⁷ *Nolan* failed to demonstrate that an expert could not detect simulations, or even that an expert is necessary in a

⁵²¹See *id.* Proponents of the Act often, incorrectly, assert otherwise. See David B. Johnson, Comment, *Why the Possession of Computer-Generated Child Pornography Can Be Constitutionally Prohibited*, 4 ALB. L.J. SCI. & TECH. 311, 327 (1994).

⁵²²See Complaint for Declaratory and Injunctive Relief at 10, *Free Speech Coalition v. Reno*, 1997 WL 487758 (N.D. Cal. Aug. 12, 1997) (No. 97-00281).

⁵²³See *United States v. Thomas*, 74 F.3d 701, 708 (6th Cir. 1996); *United States v. Maxwell*, 42 M.J. 568, 580 (A.F. Ct. Crim. App. 1995), *rev'd on other grounds*, 45 M.J. 406 (C.A.A.F. 1996).

⁵²⁴18 U.S.C. § 1465 (1997), *amended by* Pub. L. 104-104, Title V, § 507(b), 110 Stat. 137 (1996).

⁵²⁵See John C. Scheller, Note, *PC Peep Show: Computers, Privacy, and Child Pornography*, 27 J. MARSHALL L. REV. 989, 1009 (1994) (*citing* 18 U.S.C. § 2251(C)(2)(b) (1997)).

⁵²⁶In 1994, no state or federal law specifically addressed simulated child pornography, because it did not exist, or at least so one commentator asserts. See Johnson, *supra* note 521, at 324.

⁵²⁷*State v. Cohen*, 696 So. 2d 435, 438 (Fla. Dist. Ct. App. 1997).

trial.⁵²⁸ There simply has been no need demonstrated to ban all sexually-explicit images of children in order to catch actual child abusers; there is no reason to believe Taylor's claim that if a defendant can claim that images could have been simulated, a built-in reasonable doubt argument will exist for the defendant in and be able to shut down any and every child pornography prosecution.⁵²⁹

According to Taylor, if the government must prove beyond a reasonable doubt in an era of digital imagery that mailed photos, smuggled magazines or videos, and images transmitted via the Internet are depictions of an actual minor, actually engaging in the sex act portrayed, prosecutions will all but grind to a halt.⁵³⁰ But this is a false peril. Courts hold in child pornography cases that it is not necessary to call a photography expert to negate a mere possibility of fakery, if no evidence is presented to support such a claim.⁵³¹ The burden to prove that photographs are in fact simulations lies with the defendant. Although the issue has not been definitively resolved, practice so far is that if a prosecutor concedes that he is unable to show that pornographic activity was engaged in by an actual child is to leave the issue for the factfinder, not to dismiss the case.⁵³² No claim that an image was altered and not of an actual child appears to have succeeded to date.⁵³³ Indeed, the lone on-point case cited by the Act's supporters is *United States v.*

⁵²⁸See Johnson, *supra* note 521, at 329-30.

⁵²⁹See ENOUGH IS ENOUGH, *Congress Takes a Stand Against Computerized Child Porn* (last modified Apr. 25, 1997) <<http://www.enough.org/netguard/congress.htm>>.

⁵³⁰The Child Pornography Prevention Act Of 1995 (statement of Bruce A. Taylor), *supra* note 233.

⁵³¹See *United States v. Nolan*, 818 F.2d 1015, 1018 (1st Cir. 1987). *Cf. supra* text accompanying notes 66, 169-172.

⁵³²See *State v. Cohen*, 696 So. 2d 435, 437 n.2 (Fla. Dist. Ct. App. 1997) (issue not raised on appeal).

⁵³³See, e.g., *United States v. Kimbrough*, 69 F.3d 723, 733 (5th Cir. 1995) (defense unsuccessfully alleged to jury that images at issue had been altered and were not of actual children).

Kimbrough,⁵³⁴ the outcome of which works against any assertion that digital imagery is a threat requiring new legislation.⁵³⁵ Further, if the burden of proof is to be shifted, it must be to aid judicial processes, not ban all simulated images.⁵³⁶

Indeed, even data on the amount of child pornography in circulation and the reach of its distribution networks is speculative, an unconvincing basis for draconian legislation. What commercial distribution networks still existed by the mid-1980s were clandestine.⁵³⁷ The rise of the Internet does mean that what then was the product of small-scale production by amateurs can now obtain worldwide distribution,⁵³⁸ virtually instantaneously.⁵³⁹ DiGregory has stated that computers have reinvigorated distribution to an audience “the size of which pedophiles could not have envisioned 10 or 20 years ago.”⁵⁴⁰ But specific data is absent—and there is good reason not to trust data about online pornography provided by the Department of Justice.⁵⁴¹ Further, claims of supporters of the Act are—perhaps even intentionally—confusing. Barry Crimmins claims that the current situation reflects a simple matter of supply and demand: “The increased demand for child pornography directly translates into an increased number of sexually abused children.”⁵⁴² But Crimmins does not explain the origin of the *demand*, nor why the supply will be of real children. Others contend that “[a]n epidemic of child abuse going to result from this. People will say, ‘I’ve thought about it, but I’ve never

⁵³⁴The Child Pornography Prevention Act Of 1995 (statement of Bruce A. Taylor), *supra* note 233.

⁵³⁵See *supra* note and text accompanying note 533.

⁵³⁶See Burke, *supra* note 466, at 472.

⁵³⁷See DEP’T OF JUSTICE, *supra* note 379, at 410.

⁵³⁸See Stanley, *supra* note 491, at 311; Stewart, *supra* note 426, at 211. See also *supra* text accompanying note 236.

⁵³⁹See Kim, *supra* note 470, at 415.

⁵⁴⁰Laurie Sullivan Maddox, *Hatch Targets Computer Porn*, SALT LAKE TRIB., June 5, 1996, at A3 (citing DiGregory). See also Scheller, *supra* note 525, at 989-91.

⁵⁴¹See *supra* text accompanying notes 648-650.

⁵⁴²See Platt, *supra* note 490, § 2 (Net Sex) 73.

thought about *doing* it.”⁵⁴³ But again, the claim lacks a proper foundation; it assumes that pornography is addictive, and ultimately will escalate to “acting out.”⁵⁴⁴ Indeed, one should note that some researchers find that many normal heterosexual men experience a sexual reaction to minor females, and suggest that a desire for adolescents should be considered normative as a scientific matter, if legally deviant—and rarely acted upon, despite allegedly being widespread.⁵⁴⁵

Furthermore, even if simulated child pornography created through digital technology were to be acknowledged as a potentially disruptive element for legal proceedings, because it cannot be distinguished from images of real children, it also remains to be shown that the magnitude of the effects of this simulated child pornography, in theory or practice, would justify the prohibition. Supporters of the Act rely upon the secondary effects of child pornography, as a “training manual.”⁵⁴⁶ The Act is said to protect not children who are participants in the production of child pornography, but rather victims of secondary effects.⁵⁴⁷ In *Free Speech Coalition*, the government argued that virtual pornography is used to whet the sexual appetites of pedophiles who then act out their fantasies with real children,⁵⁴⁸ and recruit victims with the images.⁵⁴⁹ Seduction thus is equated with production: “[T]he two incite the same reaction in pedophiles and thus pose comparable threats to children.”⁵⁵⁰ But it is manifestly not true that simulations are

⁵⁴³*Id.*, § 2 (Net Sex) 89.

⁵⁴⁴The Child Pornography Prevention Act Of 1995 (statement of Dee Jepsen), *supra* note 455.

⁵⁴⁵*See* Stanley, *supra* note 491, at 299.

⁵⁴⁶S. Rep. 104-358, *supra* note 400, at 13.

⁵⁴⁷But proponents of the Act even acknowledge that child pornography, in focusing on actual children, is distinct from obscenity, which is viewer-focused. *See* Beneke, *supra* note 465, at 555.

⁵⁴⁸*See Good Anti-Porn Law*, *supra* note 462, at AA1.

⁵⁴⁹*See* Defendant’s Memorandum of Points and Authorities in Opposition to Plaintiff’s Motion for Summary Judgment, at 10, *Free Speech Coalition v. Reno*, 1997 WL 487758 (N.D. Cal. Aug. 12, 1997) (No. 97-00281).

⁵⁵⁰*Id.* at 2.

as dangerous as real abuse of children.⁵⁵¹ Again, a MacKinnonesque fallacy is uniquely tolerated in the context of child pornography.⁵⁵² Simulations are “not even close to what the Court was imagining when it talked about materials being an ‘integral part’ of the illegal activity.”⁵⁵³ Despite what supporters of the Act repeatedly may claim,⁵⁵⁴ *Ferber* was not premised on harm to the viewers of child pornography.⁵⁵⁵ Again, implicit in *Ferber* were real children: The decision noted that “a State’s interest in ‘safeguarding the physical and psychological well-being of a *minor*’ is ‘compelling.’”⁵⁵⁶ The dictum in cases such as *Osborne* positing alternative grounds are an extremely weak foundation for regulation.⁵⁵⁷

Furthermore, the government carries the burden of doing more than just positing the existence of a disease to be cured in a case if speech is involved.⁵⁵⁸ Except in the contexts of broadcasting and commercial advertising, no modern court has held moral and aesthetic disapproval alone to be a sufficient basis for the regulation of speech.⁵⁵⁹ Similarly, anticipatory criminal offenses typically require proof of intent to use materials in a criminal act, such as for burglar’s tools.⁵⁶⁰ This is exactly the sort of evidence that the government in the past has failed to produce

⁵⁵¹See Brief of the American Civil Liberties Union, *supra* note 356, at 18.

⁵⁵²See *supra* text accompanying notes 485-486.

⁵⁵³The Child Pornography Prevention Act Of 1995 (statement of Frederick Schauer), *supra* note 384.

⁵⁵⁴The Child Pornography Prevention Act Of 1995 (statement of Bruce A. Taylor), *supra* note 233.

⁵⁵⁵See Laurence H. Tribe, AMERICAN CONSTITUTIONAL LAW § 12-16 n.71 (2d ed. 1988).

⁵⁵⁶*New York v. Ferber*, 458 U.S. 747, 757-58 (1982) (emphasis added). It is true that this compelling interest may serve to protect children who are not Americans, given that much child pornography today is believed to be produced overseas. See Scheller, *supra* note 525, at 1000-01. But this does not change the fact that they are *real* children.

⁵⁵⁷See Adelman, *supra* note 391, at 487.

⁵⁵⁸See *id.* at 488-89.

⁵⁵⁹See *id.* at 488.

⁵⁶⁰See Quigley, *supra* note 451, at 364.

in this context.⁵⁶¹ Little evidence exists indicating the impact child pornography has on its possessor, much less a cause-and-effect relation.⁵⁶²

Child pornography is prohibited because it is indicative of, not a cause, of actual abuse. The Meese Commission noted that child pornography is distinct—and its prohibition justified—specifically because “a great deal of this trade involves photographs taken by child abusers themselves, and then either kept or informally distributed to other child abusers.”⁵⁶³ Supporters of the Act argue that the link between the perusal of child pornography and child molestation is well documented, and should itself justify legislative action.⁵⁶⁴ Victor Cline testified that an overwhelming majority of pedophiles use child pornography to stimulate their sexual appetites and act out against children.⁵⁶⁵ Many studies allegedly find a link between consumers of child pornography and child abusers.⁵⁶⁶ But these conclusions are not cognizable by law based on *Ferber*—nor are they universally ratified. The Meese Commission, for example, recorded that the desire to have a collection of child pornography was a common, but not universal, characteristic of pedophiles.⁵⁶⁷ Other studies find that pedophiles are usually *not* attracted by child pornography.⁵⁶⁸ Studies of men incarcerated for sex crimes against children have

⁵⁶¹*See id.* at 363.

⁵⁶²*See id.* at 367 & n.175.

⁵⁶³DEP’T OF JUSTICE, *supra* note 379, at 406.

⁵⁶⁴The Child Pornography Prevention Act Of 1995 (statement of Bruce A. Taylor), *supra* note 233.

⁵⁶⁵*See* The Child Pornography Prevention Act Of 1995: Hearings on S. 1237 Before the Senate Committee on the Judiciary (June 4, 1996) (statement of Dr. Victor Cline, Professor Emeritus of Psychology at the University of Utah), *available in* Westlaw, 1996 WL 10164705.

⁵⁶⁶*See* Kent & Truesdell, *supra* note 411, at 366.

⁵⁶⁷*See* DEP’T OF JUSTICE, *supra* note 379, at 407.

⁵⁶⁸*See* Brief of the American Booksellers Foundation for Free Expression, et al., as Amici Curiae in Support of Appellant, at 12, *Free Speech Coalition v. Reno*, 1997 WL 487758 (9th Cir., filed Sept. 26, 1997) (No. 97-16536) (*citing* Dennis Howitt, *Pornography and the paedophile: Is it criminogenic?*, 68 BRITISH J. OF MEDICAL PSYCHOLOGY 15, 24 (1995)).

found that they had little exposure to pornography.⁵⁶⁹ Most sexual contacts were initiated as a result of proximity, opportunity, and convenience.⁵⁷⁰ In sum, in the absence of clear evidence, the argument that by providing a virtual substitute simulated child pornography would *reduce* actual incidents of child abuse is as compelling as any arguments for its prohibition as an instigator.⁵⁷¹

Further, even if simulated images do instigate some conduct, censorship is still not justified. A principle plank of the First Amendment is that an idea should not be proscribed because it has been successfully communicated, even if it is repugnant.⁵⁷² Factors such as that child pornography may inspire pedophiles to act have been considered and rejected by the Supreme Court in the past, notes Eric Freedman, a Hofstra University Law School professor who signed a letter of protest against the bill.⁵⁷³ In *Brandenburg v. Ohio*,⁵⁷⁴ the Supreme Court rejected the notion that the government could ban works that did not directly incite people to commit an illegal act.⁵⁷⁵ That same year, in *Stanley v. Georgia*,⁵⁷⁶ Justice Thurgood Marshall wrote for the Court that trying to “protect the individual’s mind from the effects of obscenity” may be tantamount to asserting “that the state has the right to control the content of a person’s thoughts.”⁵⁷⁷ Banning works because of what they might inspire others to do, even if that would be the abuse of a child, “is to reduce the level of the First Amendment to the level of the most perverted

⁵⁶⁹See *Stanley*, *supra* note 491, at 333.

⁵⁷⁰See *id.* at 301.

⁵⁷¹See Adelman, *supra* note 391, at 491.

⁵⁷²*Cf.* *American Booksellers Association, Inc. v. Hudnut*, 771 F.2d 323, 328 (7th Cir. 1985), *summ. aff’d*, 475 U.S. 1001 (1986).

⁵⁷³See Schwartz, *supra* note 427, at A24.

⁵⁷⁴See 395 U.S. 444 (1969).

⁵⁷⁵See *id.* at 448.

⁵⁷⁶See 394 U.S. 557 (1969).

⁵⁷⁷See *id.* at 566.

criminal among us.”⁵⁷⁸ There has been no evidence presented that if simulated child pornography exists, so necessarily will seduction and victims.⁵⁷⁹

But both *Brandenburg* and *Stanley* predate *Ferber*; and some commentators argue that *Ferber* therefore was intended to exempted child pornography from their requirements.⁵⁸⁰ There is no clear judicial statement on the subject, but based on common sense this would appear to be another example of what can happen when children are held up as in need of protection: the reasoning applied in other disputes over the reach of the First Amendment mysteriously vanishes.⁵⁸¹ It is difficult to deny that images can influence viewers, even if one does not go so far as to say that “[i]mages feed our minds and hearts.”⁵⁸² But the influence the supporters of the Act attribute to images is hardly credible. In 1995, Calvin Klein fell under intense criticism for a series of suggestive ads featuring young-looking models.⁵⁸³ Certainly, they had an effect, given the uproar.⁵⁸⁴ But few asserted that they would actually lead to the abuse of children.⁵⁸⁵ Most commentators found them merely offensive at most: “To even suggest that an advertising with fully

⁵⁷⁸John Schwartz, *New Law Expanding Legal Definition of Child Pornography Draws Fire*, WASH. POST, Oct. 4, 1996, at A10 (quoting Eric M. Freedman).

⁵⁷⁹See Johnson, *supra* note 521, at 330. See also Burke, *supra* note 466, at 461-62 (noting that sexual arousal does not equal sexual abuse, a correlation is not causation, and seduction is not an immediate action).

⁵⁸⁰See The Child Pornography Prevention Act Of 1995 (statement of Frederick Schauer), *supra* note 384.

⁵⁸¹See *supra* text accompanying notes 487-488, 490-491.

⁵⁸²See *Breakpoint*, 3/96, #11, *As abhorrent as the real thing* (last modified Oct. 10, 1996) <http://users.vnet.net/cgmac/geo/breakpoint/bp396_11.html>.

⁵⁸³See, e.g., *Calvin Klein Goes a Step Too Far: What can be done with Calvin Klein?*, OMAHA WORLD-HERALD, Sept. 12, 1995, at 8.

⁵⁸⁴But in effect in fact was to increase Calvin Klein’s sales. See Tabitha Soren, *Not All Sexualized Child Images Are Pornographic*, SEATTLE POST-INTELLIGENCER, Dec. 19, 1995, at A15. See *infra* text accompanying notes 619, 630-635.

⁵⁸⁵But see *Calvin Klein Goes a Step Too Far*, *supra* note 583, at 8 (“The step Klein took was right into the dark zone of pandering to child molesters, pedophiles and assorted other perverts”), Soren, *supra* note 584, at A15 (quoting Joann Mazza). Cf. *supra* text accompanying notes 487-488, 490-491.

clothed people in them, whether or not they're minors, amounts to child sexual abuse is an insult—it trivializes the very serious crime of child sexual abuse.⁵⁸⁶ Ultimately, no charges were filed because the models were of legal age.⁵⁸⁷ But if the ads were displayed today, under the Act, Calvin Klein could be guilty of the production of child pornography, depending on who decides if the images were marketed as culpable child pornography.⁵⁸⁸ The chilling effect of child pornography hysteria is clear—“if you use your computer to generate a work of art that has some nudes in it, you better put gray hair on your nudes.”⁵⁸⁹

Indeed, the fact that gray hair could be a solution indicates the fundamental flaw in the reasoning of supporters of the Act—and why it threatens digital technology in general. If “[t]he real and the apparent become and are equally dangerous because both have the same incitement effect on the pedophile and the same seductive effect on a child victim”⁵⁹⁰ than *all* pornography should be banned, because adult pornography can be and/or is for the same purposes as child pornography.⁵⁹¹ Cline, for example, testified that some of the pornography pedophiles accumulate is of females fully developed anatomically but made to look young and immature;⁵⁹² what matters is that they are perceived as minors by the psyche.⁵⁹³ Any kind of pornography, he asserted, can be an incitement to a sexual

⁵⁸⁶Dateline NBC (NBC television broadcast, Sept. 12, 1995), *available in* Westlaw, 1995 WL 6296482 (*quoting* Margorie Hines).

⁵⁸⁷*See* Soren, *supra* note 584, at A15.

⁵⁸⁸*See supra* text accompanying note 425.

⁵⁸⁹Amy Harmon, *Virtual Child Porn Just as Illegal*, L.A. TIMES, Oct. 7, 1996 at D3 (*quoting* Daniel E. Katz).

⁵⁹⁰ENOUGH IS ENOUGH, *supra* note 529.

⁵⁹¹The Meese Commission anticipated this reasoning, and explicitly renounced it. *See* Adelman, *supra* note 391, at 491. *But see* The Child Pornography Prevention Act Of 1995 (statement of Bruce A. Taylor), *supra* note 233.

⁵⁹²*See* The Child Pornography Prevention Act Of 1995 (statement of Dr. Victor Cline), *supra* note 565.

⁵⁹³*See id.*

predator.⁵⁹⁴ But supporters of the Act do not take their reasoning to its logical conclusion, because shorn of the rationale of protecting children, it would be politically unpalatable.⁵⁹⁵ Indeed, although some supporters of the Act have conceded that it does not apply to cartoons, drawings, or other representations which are obviously not real children,⁵⁹⁶ the Act itself does not so elucidate.⁵⁹⁷

The true specter therefore is not child pornography, but the reasoning of the supporters of the Act, political opportunists who play off existing fears in order to pursue their agenda of repression. Already, by the Child Pornography Prevention Act of 1996 they have created what is in effect a thought crime, premised on secondary effects: “We believe what you created on your computer appears to be a minor and we don’t approve of that, therefore we’re going to prosecute you.”⁵⁹⁸ The scope of censorship premised on secondary effects is potentially unlimited.⁵⁹⁹ Secondary effects are slippery things—consider the case of Traci Lords, who appeared to be an adult when she appeared in pornography, although she was in fact a minor. If child pornography laws are to be premised on secondary effects, why should her films be illegal, if few but her mother could tell that she was underage?⁶⁰⁰ Or, alternatively, why should the use of “young looking” adults be distinguished, if they are as much a simulation as a computer generated image?⁶⁰¹

⁵⁹⁴*See id.*

⁵⁹⁵The Child Pornography Prevention Act Of 1995 (statement of Frederick Schauer), *supra* note 384 (“it is extremely unlikely that a majority of the Supreme Court could be persuaded that the proposed extension is necessary”).

⁵⁹⁶*See* ENOUGH IS ENOUGH, *supra* note 529.

⁵⁹⁷*See* 18 U.S.C. § 2256 (1997).

⁵⁹⁸Harmon, *supra* note 589, at D3 (*quoting* Daniel E. Katz).

⁵⁹⁹*See* Seminerio, *supra* note 436.

⁶⁰⁰*See* Scott Harris, *Mother Tells Porn Trial of Daughter’s Role in Films*, L.A. TIMES, April 27, 1989, (Metro), at 2. *See also* Stanley, *supra* note 491, at 331.

⁶⁰¹Complaint for Declaratory and Injunctive Relief, *supra* note 522, at 7; Plaintiffs’ Reply to Defendant’s Opposition to Plaintiff’s Motion for Summary Judgment, at 4, *Free Speech Coalition v. Reno*, 1997 WL 487758 (N.D. Cal. Aug. 12, 1997) (No. 97-16536). *Cf. supra* text accompanying note 611. The Economist astutely observes that “[n]ot only are Americans

The Act itself provides no limits on secondary effects⁶⁰²—a contrast to a core message of the Supreme Court’s decision in *Reno v. ACLU*, that a law premised on the well-being of children was yet limited to regulating primary effects.⁶⁰³ The vagaries of politics is by far too thin a shield for a still-developing technology. Already too much has been swept away by the Act—but if the reasoning of *Free Speech Coalition* were to become pervasive, so would a vast stretch of the digital domain, all the good potential along with the bad.⁶⁰⁴

D. The Lessons of Hysteria

Taylor has stated that concerns about the Act are exaggerated because the Act will be only applied to images peddled as child pornography, and not to legitimate works of art.⁶⁰⁵ Similarly, the government has claimed that depictions that are the “exclusive product of illustrators’ and artists’ imaginations” are unlikely to trigger liability because “as opposed to realistic images, [they] would not fall within the definition of child pornography, which requires that the

hypersensitive about the exposure of young flesh, they are hypocritical too. They consider it perfectly acceptable, nay wholesomely American, for young teenagers to prance about semi-clad as majorettes or cheerleaders. But they are shocked—shocked—at the sexual innuendo of Calvin Klein’s recently withdrawn jeans advertisements.” *Suffer little children: Americans’ overprotection of children against pedophilia*, *ECONOMIST*, Sept. 23, 1995, at 24. *See supra* text accompanying notes 583-588.

⁶⁰²*See, e.g.*, Brief of the American Civil Liberties Union, *supra* note 356, at 7.

⁶⁰³*See id.* at 7-8 (*citing* 117 S.Ct. 2329, 2342 (1997)).

⁶⁰⁴*Cf. supra* text accompanying note 590. As this Paper was being completed, U.S. District Court Judge Gene Carter held the Act unconstitutional as applied to images that “appear” to be children in *United States v. Hilton*, No. 97-78-P-C, slip. op. (D. Me. Mar. 30, 1998) (*citing* 18 U.S.C. § 2252A(a)(5)(B) (1997)). Carter decided that the statute was both vague and overbroad. *Id.* at 3. Carter’s decision, however, denied that *Ferber* rendered the Act unconstitutional, *see id.* at 4-5 n.2, and suggested that under *Osborne* harmful secondary effects are a sufficient justification for the Act, *see id.* at 5-6.

⁶⁰⁵*See* Schwartz, *supra* note 427, at A24.

depiction ‘appear to be’ of a minor.”⁶⁰⁶ But “[t]hat’s obviously not what the act says.”⁶⁰⁷ Practically, nothing stops a zealous prosecutor from going after what he doesn’t like:⁶⁰⁸ The prosecutor is, in all but name, the arbiter of taste. Further, the sole affirmative defense against prosecution under the Act, which requires that the actors depicted in an image are of legal age, obviously does not and cannot apply if the actors are fictional,⁶⁰⁹ the arguments of the government to the contrary.⁶¹⁰ The lessons of hysteria, as seen in regard to child pornography in non-digital contexts, is that which is unprotected by the First Amendment, will be pursued—a warning not just in this context but for digital imagery in general.

Many works of indubitable societal value—and many that were once or remain controversial—fall within the auspices of the Act, protected only by the thin veil of prosecutorial discretion. Films such as *Kids* and adaptations of Vladimir Nabokov’s *Lolita* are examples of well-known—and contentiously-debated—movies in which apparent minors engage in explicit sexual conduct.⁶¹¹ But other movies which contain scenes in which teenagers or women of unclear

⁶⁰⁶Defendant’s Memorandum of Points and Authorities in Opposition to Plaintiff’s Motion for Summary Judgment, *supra* note 549, at 2.

⁶⁰⁷Reynolds Holding, *Fallout From Child Pornography Act / “Kiddie porn” law has apparently scared off potential distributors of a variety of projects. Do we care?*, SAN FRANCISCO CHRON., Aug. 3, 1997, at 4Z5. Indeed, the government speaks with a forked tongue, elsewhere claiming that the Act was specifically intended to prohibit computer-generated images of children. See Defendant’s Memorandum of Points and Authorities in Opposition to Plaintiff’s Motion for Summary Judgment, *supra* note 549, at 2 (Act “enacted to eradicate computer generated child pornography, which presents realistic but simulated images”); S. Rep. 104-358, *supra* note 400, at 18 (concluding computer-generated images deserve no First Amendment protection).

⁶⁰⁸See Schwartz, *supra* note 578, at A10.

⁶⁰⁹See *id.* See also *supra* note 425.

⁶¹⁰See Defendant’s Memorandum of Points and Authorities in Opposition to Plaintiff’s Motion for Summary Judgment, *supra* note 549, at 13. See also, e.g., *supra* text accompanying note 446 (Act explicitly intended to apply to computer-generated images).

⁶¹¹See Schwartz, *supra* note 427, at A24. In the current production of *Lolita*, starring Jeremy Irons, *Lolita* is portrayed by an adult body-double at strategic moments. See Holding, *supra* note 607, at 4Z5. All of the actors involved in sex scenes in *Kids* likewise are over 18. See David Ansen, *Controversy: ‘Kids’ for Adults*, NEWSWEEK, Feb. 20, 1995, at 69.

ages but who may be construed as minors engage in sexual activity include *Animal House*, *A Clockwork Orange*, and *The Last Picture Show*;⁶¹² Elizabeth Taylor's *Cleopatra*, *Midnight Cowboy*, and *The Prime of Miss Jean Brodie*,⁶¹³ and *Fast Times at Ridgemont High* and *The People vs. Larry Flynt*.⁶¹⁴ Further, given that only a simulation is required, films are not the only possible targets. The iconic advertisement for Coppertone suntan lotion that shows a young girl's swimsuit being tugged off by a dog could be a felony,⁶¹⁵ as could Renaissance through contemporary paintings of naked cherubs and the naked baby Jesus.⁶¹⁶

Given that there is no means by which to determine, short of chancing prosecution, whether a work will be held culpable, the common reaction to the Act is likely to be the suppression of clearly legitimate works, not to mention works of more uncertain societal value.⁶¹⁷ All it takes is one prosecutor and one judge—as demonstrated in a different yet related context by the outlawing of the Oscar-winning film *Tin Drum* in Oklahoma.⁶¹⁸ Yet the government seems unaware—or unwilling to acknowledge—the Act's chilling effect. Conti wrote that “[i]t is highly unlikely that the types of valuable works plaintiffs fear will be outlawed . . .

⁶¹²See Doug Desjardins, *Video Industry Awaits Verdict on New Kiddie Porn Law*, VIDEO STORE, Feb. 2, 1997, at 9.

⁶¹³See Wetzstein, *supra* note 452, at A8.

⁶¹⁴See Holding, *supra* note 607, at 4Z5.

⁶¹⁵See Wetzstein, *supra* note 452, at A8.

⁶¹⁶See The Child Pornography Prevention Act Of 1995: Hearings on S. 1237 Before the Senate Committee on the Judiciary (June 4, 1996) (statement of Judith F. Krug, Director, Office For Intellectual Freedom, American Library Association), *available in* Westlaw, 1996 WL 10164704.

⁶¹⁷See Wetzstein, *supra* note 452, at A8. Legitimate purposes are generally conceded to include parental, medical, scientific, law enforcement, and similar ends. See The Child Pornography Prevention Act Of 1995 (statement of Bruce A. Taylor), *supra* note 233. Debate continues as to when artistic photographs of children, such as by Jock Sturges and David Hamilton, sufficiently "sexualize" them to lose the protection of the First Amendment. See, e.g., J.R. Moehring, *Photographic Art or Child Porn? Controversy Roars*, SEATTLE TIMES, Apr. 19 1998, at A6.

⁶¹⁸See, e.g., John Parker, *Judge Rules Video Seizures Unconstitutional*, DAILY OKLAHOMAN, Dec. 27, 1997, at 1 (based on a judge's oral ruling that film comprised child pornography, police seized copies at libraries, video stores, and private homes).

will be treated as ‘criminal contraband.’” But the makers of a new *Lolita*, starring veteran actor Jeremy Irons, reportedly have been unable to find an American distributor specifically because of fear of prosecution.⁶¹⁹ The Act alone may not be responsible for all incidents of chill; a wariness about digital imagery preceded the Act. Despite it having reached number one on the Billboard charts, to appease Wal-Marts and K-marts, Warner Brothers put stickers over the cover of Alex Van Halen’s album *Balance*, which features a photograph of a nude 3-year-old boy, “doubled” by computer to suggest Siamese twins.⁶²⁰ “Some people see in it child pornography.”⁶²¹ First Amendment scholars have warned in the past of “the trouble with broad, emotional announcements in areas like child pornography.”⁶²² But 1984 and Big Brother are clearly not just the threat of the Act—they are the reality it has created, and which may be only expanded upon.

Indeed, the frequent prosecution/persecution of non-digital simulations as child pornography serve as a stark warning for what may lie ahead for digital photography in general. The owners of an Oklahoma City comic book store were charged with a child pornography violation for selling a comic book in which a story, *A Taste of Cherry*, depicted a teenage girl being abducted and raped by

⁶¹⁹See Desjardins, *supra* note 612, at 9; Holding, *supra* note 607, at 4Z5. Opponents have claimed that the movie “could do for paedophilia what Tiger Woods . . . has done for golf: glamorise it.” *Babylon can be a hard sell*, *ECONOMIST*, Oct. 11, 1997, at 108. But industry insiders have predicted that such notoriety will in fact swell the film’s audiences and revenues. *Id. Cf. infra* notes 630-635. *Lolita* does not make use of digital simulations, but does use a “body double” for underage star Dominique Swain in explicit scenes. See Burke, *supra* note 466, at 441 n.10.

⁶²⁰See Steve Morse, *Covers that rock the senses*, *BOSTON GLOBE*, Feb. 10, 1995, at 59 (*quoting* Jeri Heiden).

⁶²¹*Id.* at 59 (*quoting* Jeri Heiden). Strangely, Nirvana’s album *Nevermind*, which features a nude—and real—4-month old boy, appears to have attracted no attention. See Michele Romero, *You’ve swum a long way, baby*, *ENT. WKLY.*, Apr. 24, 1992, at 68.

⁶²²Debra Gersh Hernandez, *Government investigating ad campaign: Department of Justice investigation of Calvin Klein jeans advertisements for child pornography violations*, *EDITOR & PUBLISHER*, Sept. 16, 1995, at 36 (*quoting* Bruce Sanford).

attackers hired by her father.⁶²³ The author, Christian Moore, admitted the story was “vile,” but also said that it “accomplished what it set out to do. . . . I was involved with a girl who up and dumped me and I wrote the story in the space of 20 minutes as a way to vent.”⁶²⁴ Court records state that the child pornography charge was filed because the comic book “depict[ed] nude bodies of children under the age of 18 in a sexual manner.”⁶²⁵ This charge ultimately was dropped, but the store went out of business and the owners plead guilty to a charge of trafficking in obscenity in exchange for a deferred prison sentence and a \$1500 fine each.⁶²⁶ Similarly, although ultimately convicted of obscenity for his self-published comic book *Boiled Angel*, a crucial component of Michael Diana’s work—and conviction—were drawings of children, such as of priests sodomizing children.⁶²⁷ Among the terms of his probation, Diana was forbidden to “create material that could be considered obscene, even for [his] own use.”⁶²⁸ His probation officer is permitted to conduct warrantless searches of his home in order to search for and evaluate Diana’s latest drawings.⁶²⁹ 1984, indeed.

Perhaps the most dramatic example of the levels of absurdity reached by anti-child pornography hysteria involves the rare Chateau Mouton Rothschild. The French winery Baron Philippe de Rothschild historically has commissioned a top artist every year to decorate the wine’s label.⁶³⁰ But when the 1993 label by

⁶²³See Ed Godfrey, *Charges Reduced in Comics Case*, SATURDAY OKLAHOMAN, April 13, 1996, at 7.

⁶²⁴See Michael Dean, *Christian Moore talks about the horror story that scared the entire comics industry*, COMICS BUYER’S GUIDE, Oct. 17, 1997, at 6.

⁶²⁵Godfrey, *supra* note 623, at 10.

⁶²⁶See Dean, *supra* note 624, at 6.

⁶²⁷See Chuck Shepherd, *Loony toons: Florida puts the boot to a cartoonist. (‘Boiled Angel’ publisher Michael C. Diana)*, PLAYBOY, Aug. 1994, at 41.

⁶²⁸*Id.*

⁶²⁹See *id.*

⁶³⁰See Barry Brown, *Canada to Sell Wine with Controversial Label*, BUFFALO NEWS, May 5, 1996, at A8.

Balthus⁶³¹ depicted a young female nude, “activists against child pornography blew their cork,” reading a double entendre into a Rothschild press release that described the Bordeaux as “an undiscovered pleasure, a pleasure to be shared.”⁶³² The chateau voluntarily withdrew the label—from the American market.⁶³³ Thus not only will the label continue to exist, it will become valuable, for all the wrong reasons.⁶³⁴ Some commentators observed that the tempest revealed something about American society—something that should make us all wary: “The rest of the world is presumably considered to be mature enough to look at a very neutral sketch of a young woman without lusting after 13-year-olds. . . . Child porn on a \$75 bottle of wine is an unusual marketing concept, for sure.”⁶³⁵

But hysteria is not limited to the United States. In Canada, police shut down an art gallery and seized a series of paintings by Eli Langer, an artist whose work depicted child abuse. Langer was arrested on child pornography and obscenity charges, which were later dropped.⁶³⁶ But a judge declined to rule the law under which he had been arrested was unconstitutional, despite the fact that it banned all material depicting children in sexual encounters, regardless if they were real or not.⁶³⁷ Much as in the United States, the law provided an affirmative defense of dubious value: If a work had artistic merit.⁶³⁸ The court’s decision proved how

⁶³¹Balthasar Klossowski de Rola, a figurative painter of the mid-20th century admittedly known for his portraits of adolescent girls in “languidly erotic” poses. *See id.*

⁶³²*Gulp! Wine’s nude art stirs protest Balthus’ depiction of a young nude is seen as child pornography by some activists*, ATLANTA J. & ATLANTA CONST., April 28, 1996, at B2.

⁶³³The Bureau of Alcohol, Tobacco and Firearms had not objected to the label. *See* Donald D. Breed, *In a Lather Over the Label*, BUFFALO NEWS, Feb. 28, 1996, at C3.

⁶³⁴*See* Gerald D. Boyd, *Winery Bows to Pressure, Replaces Label Showing Nude Girl*, SAN FRANCISCO CHRON., Dec. 20, 1995, at 4ZZ1. *Cf. supra* note 619.

⁶³⁵Larry Walker, *The back page. (withdrawal of Chateau Mouton-Rothschild label in US market)*, WINES & VINES, Feb. 1, 1996, at 46.

⁶³⁶*See* Alan Borovoy, *It makes no sense to imperil artists like Eli Langer*, TORONTO STAR, May 3, 1995, at A17.

⁶³⁷*See id.*

⁶³⁸*See id.*

fragile this shield was: The judge concluded that art must “provide something of value to the viewer,”⁶³⁹ and despite acknowledging that scientific evidence failed to establish a link between simulated child pornography and harm to children, he relied upon the anecdotal opinions of doctors who had treated sex offenders.⁶⁴⁰

Canada also provides the one case to date in which a pedophile has used digital technology to create simulated child pornography. Joseph Pecchiarich was convicted of creating child pornography on his computer, and sentenced to two years probation.⁶⁴¹ He had created and distributed black-and-white pictures of naked young girls, some with genitalia clearly depicted, and children involved in sex acts with each other.⁶⁴² Pecchiarich performed the computer equivalent of cut-and-paste with images of models from department-store catalogues.⁶⁴³ “What he would do is take his scanner and run the scan over a totally innocent picture of a child, say a five year old girl modeling a bathing suit. . . . Then, when it was transposed onto his screen, with the software that he had on his computer he was able to remove the clothing and add genitalia and then he would put the child in a sexually provocative position.”⁶⁴⁴ But this case in fact demonstrates that fears of simulations are for the most part unfounded; Pecchiarich was a lone operator, who

⁶³⁹Barry Brown, *Ontario Court Clears Art of Pornography Charge*, BUFFALO NEWS, April 23, 1995, at A7.

⁶⁴⁰See Borovoy, *supra* note 636, at A17.

⁶⁴¹See Stephen Bindman, *Punishing ‘Recent Zephyr’; No jail time in first conviction for online kiddie porn*, MONTREAL GAZETTE, July 21, 1995, at A1. Among other mentions in the United States, Senator Orrin Hatch cited this case in proposing the Child Pornography Prevention Act of 1996. See PLATT, *supra* note 490, § 2 (Net Sex) 91. Ironically, Canadian authorities had no concern about the portrait of a nude adolescent girl on the label of 1993 Chateau Mouton Rothschild. See Brown, *supra* note 630, at A8.

⁶⁴²See Bindman, *supra* note 641, at A5.

⁶⁴³See *id.* See also *supra* text accompanying note 463; Gary L. Gassman, *Sysop, User and Programmer Liability: The Constitutionality Of Computer Generated Child Pornography*, 13 J. MARSHALL J. COMPUTER & INFO. L. 481 (1995) (using similar scenario for moot court exercise).

⁶⁴⁴See Bindman, *supra* note 641, at A5.

created images that were described as “crude.”⁶⁴⁵ Prosecutors could even determine how he created the images based on drafts of them in his computer. “We were able during the trial to take the finished product that he had and compare and contrast it with the sort of works in progress that we found.”⁶⁴⁶

An additional lesson to be learned is that the government track record in dealing with computers and pornography is questionable at best; it tends to be as easily swept away by hysteria as the public.⁶⁴⁷ For example, in early arguments in *ACLU v. Reno*,⁶⁴⁸ the government cited a study of online pornography by Marty Rimm,⁶⁴⁹ apparently unaware that the study had been thoroughly discredited. Not only was his methodology flawed, but Rimm, only an undergraduate at Carnegie-Mellon University, was even the author of a book on how to make money by distributing online pornography.⁶⁵⁰ Similarly, briefly returning to the subject of evidence, the Federal Rules of Evidence were drafted without advice from scientific and computer experts—as can be painfully evident.⁶⁵¹ Rule 1001(3) defines an “original” as the negative or any print therefrom, even though when the Rule was written photographic processes already existed that did not use negatives; they certainly do today.⁶⁵² Further, Rule 1001(4) defines a “duplicate” as an enlargement or miniature, but virtually all photographs today have been enlarged,

⁶⁴⁵*See id.*

⁶⁴⁶*See id.* (quoting Philip Enright).

⁶⁴⁷*See supra* text accompanying notes 487-488, 490-491.

⁶⁴⁸*See* Maria Seminerio, *Is computer-generated kiddie porn protected speech?* (last modified Aug. 8, 1997) <<http://www.zdnet.com/zdnn/content/zdnn/0808/zdnn/0009.html>>.

⁶⁴⁹*See* Stephen Prizzo, *DOJ cites Rimm Study to justify indecency clause* (last modified Feb. 16, 1996) <<http://webreview.com/96/02/16/news/ndn/doj.html>> (citing Marty Rimm, *Marketing Pornography on the Information Superhighway: A Survey of 917,410 Images, Descriptions, Short Stories, and Animations Downloaded 8.5 Million Times By Consumers in Over 2000 Cities In Forty Countries, Provinces, and Territories*, 83 GEO. L.J. 1849 (1995)). ACLU attorney Ann Beeson stated “[c]iting the Rimm study really shows how out to lunch and out of touch with the online community this administration really is.” *See id.*

⁶⁵⁰*See* PLATT, *supra* note 490, § 2 (Net Sex) 7-41.

⁶⁵¹*See* 2 SCOTT, *supra* note 20, § 1030.

⁶⁵²*See supra* text accompanying notes 221-225.

regardless of how they were recorded.⁶⁵³ Also, Rule 1001(3) states that “[i]f data are stored in a computer or similar device, any printout or other output readable by sight shown to reflect the data accurately, is an ‘original.’”⁶⁵⁴ But no tools are provided by which to ensure the accuracy of such “originals.” Although these issues have yet to arise in the child pornography context, one can be almost certain that they will, and in other areas of law touched by digital technology.

An additional lesson is that restrictions on digital imaging, as exemplified by the Child Pornography Prevention Act of 1996, are unlikely to have the desired effects, as well as potentially unpleasant side effects. “Pedophiles have been with us since before the beginning of recorded history—certainly before computers, photographs, or even printed books. . . . Censorship of any kind is not going to make any difference whatsoever in the incidence of this permanent part of the human condition.”⁶⁵⁵ Rimm was at least correct when he noted that the seizure and destruction of child pornography on computers will not appreciably reduce the amount of child pornographic imagery existing, and that the current justification for prohibiting the distribution of child pornography, harm to actual children involved in its production, may not be compelling when technology allows the creation of pornographic images that do not depict actual children.”⁶⁵⁶ But Rimm draws the wrong conclusion. “[E]mbarking on a course so likely to be unsuccessful as a matter of constitutional law will wind up hurting rather than helping the cause of prosecuting the increasing number of individuals who exploit children through child pornography, and hurting rather than helping the cause of adapting child

⁶⁵³See 2 SCOTT, *supra* note 20, § 1030.

⁶⁵⁴FED R. EVID. 1001(3).

⁶⁵⁵PLATT, *supra* note 490, § 2 (Net Sex) 92 (*quoting* Joseph H. Allen). Indeed, in other times images of naked children encountered greater tolerance: photographers included Lewis Carroll (the pen name of Charles Dodgson, author of *Alice in Wonderland*). See Soren, *supra* note 584, at A15. See also *supra* text accompanying note 493.

⁶⁵⁶See Rimm, *supra* note 649, at 591.

pornography law to modern technological developments.”⁶⁵⁷ Again, if there is a clear lesson in the thousands of cases interpreting the First Amendment, it is that dangerous ideas generally cannot and should not be banned; not when expressed by Nazis marching in Skokie, Illinois, and not when displayed on the pages of Hustler magazine.⁶⁵⁸ Any statute contradicting that notion casts doubt on our freedom to think and to express ideas in other contexts.⁶⁵⁹

III. Dead Celebrities

*[P]erfectibility is the Promethean temptation of Hollywood’s computer-graphics revolution. . . . [C]reating digital humans . . . remains the industry’s Holy Grail.”*⁶⁶⁰

If a photograph is a frozen slice of time, then a movie is one step closer to reality. There are still limitations on the medium, most notably that it is still a two-dimensional representation of a three-dimensional world, but simulated films can appear quite real.⁶⁶¹ Indeed, the use of digital technology to create or alter photographs and to create or alter movies are intertwined; enhanced photos are frequently used in conjunction with computer-generated animation.⁶⁶² Digital technology therefore possesses all of the same potential and poses all of the same problems for film that it does for photography; moving images may depict scenes

⁶⁵⁷The Child Pornography Prevention Act Of 1995 (statement of Frederick Schauer), *supra* note 384.

⁶⁵⁸*See* Holding, *supra* note 607, at 4Z5.

⁶⁵⁹*See id.*

⁶⁶⁰*See* Handy, *supra* note 500, at 72.

⁶⁶¹*See* Ben MacIntyre, *Stars of old set for hi-tech renaissance*, S. CHINA MORNING POST, Mar. 15, 1994, at 3.

⁶⁶²*See* JOSEPH, *supra* note 273, §8.04(3)

of people and places that never occurred—or even existed.⁶⁶³ The technology to do so, most commentators agree, exists; a work making full use of its potential simply has not been created yet,⁶⁶⁴ or at least been subject to legal proceedings.⁶⁶⁵

One challenge that the law will soon confront is the reanimation of dead celebrities, brought back to life by computers to perform in ways they never did in real life—and perhaps never would have.⁶⁶⁶ Once recorded on film—or even if not so preserved—a celebrity can be not immortal but forever resurrectable.⁶⁶⁷ If, for digital technology, issues of evidence are the past and problems of child pornography are the present, what is to be done about dead celebrities is the future. One can only hope that law will find a middle ground between the two extremes seen so far, of inaction and hysteria. But so far the response of theorists to calls to explore digital-film issues while they are still embryonic has been sparse.⁶⁶⁸

A. *The Resurrection*

⁶⁶³See *infra* text accompanying notes 710-711, 825-829.

⁶⁶⁴See *infra* text accompanying notes 691., 735-738.

⁶⁶⁵See *infra* text accompanying notes 741-742

⁶⁶⁶See, e.g., *infra* text accompanying note 829.

⁶⁶⁷See Judith A. Silver, Note, *A Bad Dream: In Search of a Legal Framework for Copyright Infringement Claims Involving Digital Imagery in Motion Pictures*, 35 IDEA: J.L. & TECH. 407, 415 (1995).

⁶⁶⁸See Joseph J. Beard, *Casting Call at Forest Lawn: The Digital Resurrection of Deceased Entertainers—A 21st Century Challenge for Intellectual Property Law*, 8 HIGH TECH. L.J. 101, 195 (1993). Without doubting the skill or sincerity of students, as one will see most of the papers that have been written on the issue are notes and comments. Indeed, a few years earlier, the Copyright Office demonstrated an utter lack of foresight, finding no urgency in addressing digital resurrection, despite a mandate to report on future technologies. See UNITED STATES COPYRIGHT OFFICE, REPORT OF THE REGISTER OF COPYRIGHTS (March 1989), reprinted in United States Copyright Office, *Technological Alterations to Motion Pictures and Other Audiovisual Works: Implications for Creators, Copyright Owners, and Consumers*, 10 LOY. L.A. ENT. L.J. 1, 46 (1990). Scholars such as Beard himself similarly failed to anticipate the digital era, writing in 1980 that the resurrection of digital celebrities was beyond even the “biblical magic of MGM.” Beard, at 102.

As for photographs, moving images can be subjected to amazing numerical processing techniques once they have been converted into the digits that comprise a computer file, ranging from gradually transmuting one image into another—a process popularly known as morphing—to distortions that “defy description.”⁶⁶⁹ Again as for photographs, such techniques are not entirely novel; in the 1982 film *Dead Men Don’t Wear Plaid*, Steve Martin interacted with film clips from the 1940s,⁶⁷⁰ and in the 1983 film *Zelig*, Woody Allen interacted with figures from 1920s newsreels.⁶⁷¹ But changes inconceivable a decade ago, or that then required hundreds of thousands of dollars in specialized hardware and personnel, are now almost a matter of whimsy with skilled technicians.⁶⁷² Computers now are used for minor enhancements, such as removing “a dribble of spit” from Tom Cruise’s chin in the 1995 film *Mission: Impossible*.⁶⁷³ What was once a business 80% devoted to special effects now mainly touches up reality, from out of place hair to unzipped flies.⁶⁷⁴ The economics are simple; even if a scene could be reshot, it is often cheaper to alter it in postproduction.⁶⁷⁵ Further, digital imagery saves on travel expenses and insurance: actors and also stuntmen need not be put at risk.⁶⁷⁶

But, by comparison, the above is mere tweakery. In the 1990s, digital technology increasingly has been used not just to make the living look better, but to manipulate images of dead celebrities, to create new works in which they appear to interact with live actors, hold products, and—sometimes with the help of voice

⁶⁶⁹See Johnson-Laird, *supra* note 230, at 11.

⁶⁷⁰See Paul C. Weiler, ENTERTAINMENT, MEDIA, AND THE LAW 361 (1997).

⁶⁷¹See MITCHELL, *supra* note 34, at 214.

⁶⁷²See Johnson-Laird, *supra* note 230, at 11.

⁶⁷³See Handy, *supra* note 500, at 72.

⁶⁷⁴See Daviss, *supra* note 238, at 56 (citing Steven Mayer).

⁶⁷⁵See *id.*

⁶⁷⁶See Silver, *supra* note 667, at 408.

impersonators—endorse them.⁶⁷⁷ In 1991, Diet Coke brought together Elton John and vintage footage of James Cagney, Humphrey Bogart and Louis Armstrong.⁶⁷⁸ The following year Paula Abdul joked with Groucho Marx and shared a Coke with a colorized Cary Grant.⁶⁷⁹ Since, Coors tapped John Wayne and the cast of the western *Bonanza*;⁶⁸⁰ Mercedes-Benz North America recalled Ed Sullivan,⁶⁸¹ Jackie Gleason returned to pop his eyeballs for Braun kitchen appliances,⁶⁸² and Service Merchandise teamed up Lucille Ball,⁶⁸³ Fred Gwynne (Herman Munster of *The Munsters*), and Jack Webb (Joe Friday of *Dragnet*).⁶⁸⁴ The trend continues; during Super Bowl XXXII, Elvis danced for Pizza Hut.⁶⁸⁵

Furthermore, departed celebrities have begun to rise from the grave for extended encores. In 1992, Natalie Cole sang along with her late grandfather, Nat “King” Cole, in the Grammy-award music video *Unforgettable*.⁶⁸⁶ Digital imagery reputedly saved the 1994 film *The Crow*, after its star Brandon Lee was killed in an accident shortly before the completion of filming.⁶⁸⁷ Digital imagery received further widespread attention in 1994 as Tom Hanks’ character in *Forrest Gump*

⁶⁷⁷See Denise Gellene, *TV spots feature dead celebrities*, CHICAGO SUN-TIMES, Sept. 15, 1997, at 53.

⁶⁷⁸See *Ad Strategies Seeking to Raise the Dead Marketing: Many companies are ‘counting on a little irreverence,’ but some say the appeal may be short-lived*, L.A. TIMES, July 8, 1997, at D13.

⁶⁷⁹See *id.*

⁶⁸⁰See Gellene, *supra* note 677, at 53.

⁶⁸¹See *id.*

⁶⁸²See *Legendary stars return - in commercials*, DES MOINES REGISTER, July 25, 1997 at 6.

⁶⁸³See Dna Smith, *In a Virtual World, Who Owns the Virtual You?*, ORLANDO SENTINEL, Jan. 31, 1997, at X3.

⁶⁸⁴See *Ad Strategies Seeking to Raise the Dead*, *supra* note 678, at D13.

⁶⁸⁵See Eric Fisher, *Ad buyers bet on winners Few icons new for Super Bowl*, WASH. TIMES, Jan. 21, 1998, at B7. As this Paper was being completed, Tostitos launched a television ad campaign in which supposed comedian Chris Elliott visits the Beverly Hillbillies to launch Tostitos Nachos. This Author has always considered Elliott to be an example of a poorly-executed simulation of a real human being, however. See, e.g., *New Frito-Lay chip designed for toppings*, DALLAS MORNING NEWS, March 25, 1998, at 10D.

⁶⁸⁶See Weiler, *supra* note 670, at 361.

⁶⁸⁷See *id.* at 170.

interacted at times with John F. Kennedy, Richard Nixon, John Lennon, and George Wallace.⁶⁸⁸ In a 1995 episode of suitably-titled HBO Television's *Tales from the Crypt*, the Director of *Forrest Gump*, Robert Zemekis, inserted a cameo by Humphrey Bogart using footage from *Casablanca*, *The Maltese Falcon*, and *Key Largo*.⁶⁸⁹ But the potential of digital imagery already dramatically was demonstrated in the 1993 film *In the Line of Fire*: In flashback, clips of (living) star Clint Eastwood's head from 1970s *Dirty Harry* movies, with hair digitally shortened to fit the stylistic look of the 1960s, were superimposed on the body of a secret service agent in real footage from Kennedy's 1963 Dallas motorcade.⁶⁹⁰

The next and most dramatic step will be to feature a deceased celebrity in a full-length film.⁶⁹¹ Perhaps the closest effort to date was a 1996 episode of *Star Trek: Deep Space Nine* in which the current generation of Starfleet officers traveled back in time to meet with and interact with characters from the original series of the 1960s. But the episode's special effects consisted primarily of the insertion of the characters of the 1990s into the old footage, not the creation of new missions for Kirk, Spock, and McCoy.⁶⁹² But the technology is ready: the process of bringing them back would be an extension of the lifelike creations of dinosaurs in the movie *Jurassic Park* and a changing, evil cyborg police officer in *Terminator 2*; the images show just how sophisticated and real computer images can be—and are already becoming not just accepted but expected as the norm in a

⁶⁸⁸See *id.* at 361.

⁶⁸⁹See *id.*

⁶⁹⁰See *id.* at 170. As this Paper was being completed, CBS announced that to celebrate its 50th anniversary, shows airing in May 1998 which feature cameos from past stars, such as Lucille Ball on *The Nanny* and Dick Van Dyke (of *The Dick Van Dyke Show* of the 1960s) on *Diagnosis Murder* (starring the Dick Van Dyke of the 1990s). See, e.g., Hal Boedeker, *CBS celebrates its 50th with starry stunt*, BOSTON GLOBE, April 16, 1998, at C18.

⁶⁹¹See *infra* text accompanying notes 735-738.

⁶⁹²See Anna L. Kaplan, *Trials and Tribble-ations*, CINEFANTASTIQUE, Nov. 1997, at 64-66, 69-70, 75-76, 79-80. One should also note that William Shatner, Leonard Nimoy, and DeForest Kelley are all still alive, although they took no part in the episode in their 1990s incarnations.

Hollywood blockbuster movie.⁶⁹³ Non-human characters have been given detailed facial expressions and extended screen time in *Casper*⁶⁹⁴ and *Dragonheart*.⁶⁹⁵

The difficulty of creating such images still should not be underestimated, however. Computers are “only machines—you can’t just turn over a bunch of information to a machine and it will spit out a good-looking product. You still have to have all the people.”⁶⁹⁶ Even if digital images are based on footage of actual actors, rather than created from scratch, “[i]t might take 10 or 15 times the work to create a scene with humans than it did to create a scene in Jurassic Park, because people are so used to the real nuances of real performers.”⁶⁹⁷ It is the imperfections computers miss—“a barely missed beat, Streisand’s nose”—some say that in fact breathe life into a work.⁶⁹⁸ But if one has the time, skill, money, and “good quality originals, the day is here now to execute a flawless composite that will fool anybody—or at least 99 percent of the people looking at it.”⁶⁹⁹

So far, most “reanimations” appear to have utilized existing footage of celebrities, manipulated and/or matched up seamlessly with new footage.⁷⁰⁰ In “photogrammetry,” a computer uses reference points to model the image from frame to frame.⁷⁰¹ Perhaps one of the most famous—or infamous—example so far is that of Fred Astaire. To show him strutting with a Dirt Devil, a stand-in dancer,

⁶⁹³See Anthony DeStephano, *Bringing Dead Actors to Life: Coming Soon: Bogart, Monroe?*, NEWSDAY, Sept. 22, 1994, at A20.

⁶⁹⁴See Thomas Glenn Martin Jr., Comment, *Rebirth and Rejuvenation in a Digital Hollywood: The Challenge Computer—Simulated Celebrities Present for California's Antiquated Right Of Publicity*, 4 UCLA ENT. L. REV. 99, 104 (1996).

⁶⁹⁵See Erin Giacoppo, Note, *Avoiding the Tragedy of Frankenstein: The Application of the Right of Publicity to the Use of Digitally Reproduced Actors in Film*, 48 HAST. L.J. 601, 604 (1997).

⁶⁹⁶Means, *supra* note 1, at B1 (quoting Doug Magallon).

⁶⁹⁷MacIntyre, *supra* note 661, at 3 (quoting Jim Morris).

⁶⁹⁸See Handy, *supra* note 500, at 72.

⁶⁹⁹Christopher Rose, *Ghostly Images: The Newest Screen Stars Have One Thing in Common: Obituaries*, NEW ORLEANS TIMES-PICAYUNE, Mar. 1, 1997, at E1 (quoting Matt Hales).

⁷⁰⁰See *infra* text accompanying notes 678-690. See also Giacoppo, *supra* note 695, at 606.

⁷⁰¹See *id.*

dressed in a green bodysuit in front of a same-colored screen, mimicked Astaire's routine exactly while holding a vacuum instead of a cane.⁷⁰² The vacuum was then isolated and copied from the new footage to the old through a computer.⁷⁰³ A particular advantage of the capability of the computer was that the images could be matched with the old footage even while the new scene was being shot, instead of trusting that it all could be matched satisfactorily in post-production.⁷⁰⁴ Technology also was called upon to match the colors of the new footage to those of the original film grain, and to blur the vacuum to match that of Astaire's rapid steps.⁷⁰⁵ A similar technique was used in the Coors commercial noted above,⁷⁰⁶ isolating Wayne's image from the original film and matching it with new footage.⁷⁰⁷ Likewise, Gleason was made to hold a blender instead of another kitchen tool in the original⁷⁰⁸—but with the added twist of new dialogue by Art Carney, reprising his role of Ralph Kramden's perpetual foil Ed Norton, read into an older microphone so as to match the original studio sound.⁷⁰⁹

But the potential of digital technology is enhanced yet further by “image synthesis”—the creation of footage that does not involve the use of any extant imagery. Instead, an image is created mathematically from information entered into the computer that describes the object to be depicted.⁷¹⁰ Already, still images generated through mathematics are not only possible, but when done properly are photographically realistic.⁷¹¹ Fully synthetic moving images still lie in the future,

⁷⁰²See *Legendary stars return—in commercials*, DES MOINES REGISTER, July 25, 1997, at 6.

⁷⁰³See *id.*

⁷⁰⁴See *id.* Cf. *supra* text accompanying note 258

⁷⁰⁵See *Legendary stars return—in commercials*, *supra* note 702, at 6.

⁷⁰⁶See *supra* text accompanying note 680.

⁷⁰⁷See *id.*

⁷⁰⁸See *supra* text accompanying note 682.

⁷⁰⁹See *id.* The technology for simulating voices has been described as less advanced than that for visual images. See Giacoppo, *supra* note 695, at 606.

⁷¹⁰See Guilshan, *supra* note 106, at 372.

⁷¹¹See *id.*

however; image synthesis requires a tremendous amount of calculation power due to the large numbers of pixels and hues that must be created instead of copied.⁷¹² “Looking real” means that images must be continuous, seamless, and stereoscopic; comprise millions of different hues; and presented in sufficient detail that viewers cannot see any of the individual color dots that make up the images.⁷¹³ If a viewer moves his head and/or eyes, the image must shift as it would in reality.⁷¹⁴ Dennis Muren, an Oscar-winning visual-effects supervisor at George Lucas’ Industrial Light & Magic, estimated in 1997 that a “couple of years” of well-funded research and development would still be required to create a fully realized, “ready-for-its-close-up” human being from digital scratch.⁷¹⁵ Skin tone, hair, eye movements, and facial expressions have been described as the main challenges.⁷¹⁶

Cruder simulations are already common, however. Two animators from Switzerland, Daniel and Nadia Thalmann, produced moderately convincing short films in the mid-1980s featuring computer-generated images of Monroe, Bogart and James Dean.⁷¹⁷ In the 1987 film *Rendezvous in Montreal*, although images were still visibly unreal,⁷¹⁸ the Thalmanns depicted Monroe walking with fluid movements, including her famous wiggle, as well as the celebrated subway-grate scene with her pleated white skirt swirling in the updraft.⁷¹⁹ Further, numerous companies now offer three-dimensional human modeling software for workplace

⁷¹²See *id.*

⁷¹³See Johnson-Laird, *supra* note 230, at 10.

⁷¹⁴See *id.*

⁷¹⁵See Handy, *supra* note 500, at , at 72.

⁷¹⁶See DeStephano, *supra* note 693, at A20.

⁷¹⁷See *id.*

⁷¹⁸See Beard, *supra* note 668, at 104.

⁷¹⁹See DeStephano, *supra* note 693, at A20. No legal action was taken by the Monroe estate because the film was not utilized for commercial gain, one commentator recounts. See Pamela Lynn Kunath, Note and Comment, *Lights, Camera, Animate! The Right of Publicity's Effect on Computer-Animated Celebrities*, 29 LOY. L.A. L. REV. 863, 871 (1996).

design and ergonomic analysis.⁷²⁰ The benefits are attested to be various; in addition to the economic efficiency of evaluating systems before construction, models can reduce risk and liability by ensuring that equipment will work with the intended users, as well as provide evidence of diligence in maximizing operability.⁷²¹ Simulations are also big business for computer game designers, although “[m]ost are still exaggerated in ways to fit the game-genre—muscle-bound or Barbie-perfect.”⁷²² Game animators in fact are a driving force behind image synthesis: If an actor to be depicted is unavailable, for example, they can rely on existing photographs to re-create his face, although common methods still relies on a physical model, such as by sculpting a head based on the image.⁷²³

Indeed, a growing number of game developers are tackling the modeling and animating realistic humans. Activision’s game *Apocalypse*, due for release in 1998, stars Bruce Willis as the character Trey Kincaid.⁷²⁴ Activision has created two versions of Kincaid—one fully-animated for introductory and “cut” scenes, and a simplified version for active game play.⁷²⁵ A “cyberscan” was made of Willis’ head; this was used as a reference to create approximately 40 facial markers, and a template for converting film captured of Willis speaking his lines into animation.⁷²⁶ Such processes still require considerable touch-up work. Tom Toles, President of House of Moves, a motion-capture studio, declared that “everyone here is an artist first.”⁷²⁷ Further, for stars, animation still tend to be modeled on real life motion. “We get a lot of nuances. . . . [Y]ou can recognize someone by how they move.

⁷²⁰See, e.g., TRANSOM TECHNOLOGIES, *How can humans improve the way you design, manufacture, and maintain your products?* (n.d.) (on file with Author).

⁷²¹See, e.g., GENICOM CONSULTANTS, *human centered design* (1995) (on file with Author).

⁷²²Donna Coco, *Creating Humans for Games*, COMPUTER GRAPHICS WORLD, Oct. 1997, at 26.

⁷²³See DeStephano, *supra* note 693, at A20.

⁷²⁴See Coco, *supra* note 722, at 26.

⁷²⁵See *id.*

⁷²⁶See *id.*

⁷²⁷*Id.*

And when you're dealing with someone we've all seen on a screen larger-than-life, he is very recognizable. . . . It would be incredibly inefficient to try to keyframe an individual's specific moves."⁷²⁸

But this is not so for subsidiary characters, even if based on celebrities; for *Apocalypse*, a character based on the alternative rock singer Poe was designed without a full head scan, instead relying on photos and image synthesis.⁷²⁹ Louis Castle, executive vice president of Westwood Studios, which is producing a game based on the 1982 film *Blade Runner*, stated that even with current technology, the major challenge of animating humans remains recreating the subtle motions that make a character seem real.⁷³⁰ But again, technology is advancing rapidly.⁷³¹ The work of the animator, not the actor, is the final step: "nothing beats the talent of a great animator to touch up and emphasize all the right motions."⁷³² Indeed, for the small screen, it may fall to the animator to exaggerate characteristic traits and motions in order to produce a sequence that seems real to the viewer.⁷³³ A Japanese company has created a digital "teen idol," Kyoko Date, based on the anatomical parts of various real girls, who performs in digital music videos.⁷³⁴

Recent news reports suggest that the breakthrough productions for digital technology may be imminent. George Burns, despite having died in 1996, is due to star in a new movie, *Everything's George*, although a digital image of his head will be superimposed onto the body of actor and impressionist Frank Gorshin, instead

⁷²⁸*Id.* at 29.

⁷²⁹*See id.*

⁷³⁰*See id.* at 31.

⁷³¹Current technology allows eight characters on a computer screen along with full-screen animated environment at 15 frames per second on a monitor with 640 x 480 resolution and 24-bit color—approaching, and in some ways exceeding, television resolution and quality. *See id.* at 30.

⁷³²*Id.* at 30.

⁷³³*See id.* at 31.

⁷³⁴*See Handy, supra* note 500, at 72. *Cf. supra* text accompanying note 516.

of relying on image synthesis.⁷³⁵ Filmmakers commissioned a clay model of Burns' head, accurate down to "every blemish, wart and liver spot."⁷³⁶ The model will be scanned into a computer and brought to life with motion-capture technology, using data from sensors that have been attached to Gorshin.⁷³⁷ The producer stated that "someone with a trained eye might say there's something not quite human about it. But the average layman will watch it and say, 'Wow! George Burns is alive!'"⁷³⁸ Similarly, a new series starring Ed Sullivan, *Virtual Ed's Variety Hour*, is scheduled to premiere on UPN in May 1998;⁷³⁹ the icon of the 1950s and 1960s will be digitally revived to introduce contemporary acts.⁷⁴⁰

B. Reanimation and the Law

Given that the full-fledged reanimation of dead celebrities now appears imminent, this is the time for academics and practitioners to evaluate if and how the law should be modified in response to this latest challenge of digital imagery. Hopefully any such change will be the product of more careful consideration than has been evident so far in the contexts of evidence and child pornography. One reason that significant legal disputes may not have arisen yet in the "reanimation" context is that so far all of them have been authorized. Astaire's widow, for example, turned down \$250,000 to allow her husband to join Humphrey Bogart and James Cagney in Diet Coke commercials in 1991, before later accepting an offer from Dirt Devil because, she said in a press release, its ad "retained the

⁷³⁵*See id.*

⁷³⁶*Id.* This technique appears to be a step between photogrammetry and pure mathematical modeling, although closer to the former than the latter. *See Johnson, supra* note 521, at 315.

⁷³⁷*See id.*

⁷³⁸*Id.* (quoting Paul Greenberg).

⁷³⁹*See* Jefferson Graham, *Remodeled 'Love Boat' comes out of dry dock*, USA TODAY, Jan. 8, 1998, at 3D.

⁷⁴⁰*See id.*

integrity of his work.”⁷⁴¹ The Wayne and Bogart estates likewise authorized their reanimation in ads, although commentators were more dubious about their integrity.⁷⁴² Further, the cost of reanimation is currently tremendous, limiting both who can afford to do so—presumably as well as the risk they are willing to carry. Unlike for photographs, for example, thousands of hours may be required to search for images that match flawlessly: “For the time being, the cost is going to remain in the Stephen Spielberg, Anheuser Busch budget range.”⁷⁴³

But, as has happened for photographs, the reanimation of dead celebrities will become more feasible as the power and ease of use of computers increases. Although few have—yet—suggested that reanimation software will one day be on every desktop, certainly it will become easier for motion pictures of dead celebrities to be copied and altered, and harder for heirs and/or rightsholders to prevent such changes. The potential impact is significant; although quantitative data is hard to obtain,⁷⁴⁴ it is estimated that even in 1982, the combined sales of entertainment industries constituted 5% of the gross national product, and that more than 2.2% of the labor force is affected by trade in intellectual property.⁷⁴⁵ If anything, the importance of entertainment has probably increased since: Names and faces from the past, for example, may have appeared on t-shirts and in print ads for years, but the advent of flawless computer imaging opened new marketing horizons.⁷⁴⁶ Further, from the standpoint of advertisers and producers, deceased

⁷⁴¹See Rose, *supra* note 699, at E1.

⁷⁴²See *id.*

⁷⁴³*Id.* (quoting Matt Hales).

⁷⁴⁴See Don E. Tomlinson & Christopher R. Harris, *Free-lance Photojournalism in a Digital World: Copyright, Lanham Act and Droit Moral Considerations plus a Sui Generis Solution*, 45 FED. COMM. L.J. 1, 27 n.137 (1992).

⁷⁴⁵See *id.*

⁷⁴⁶See Rose, *supra* note 699, at E1.

celebrities are ideal stars; they not only tap into baby-boomers nostalgia and wallets, but can no longer be arrested or otherwise actively offend consumers.⁷⁴⁷

Even harder to estimate is what damage—if any—these industries would suffer due to infringements of intellectual property rights.⁷⁴⁸ Indeed, a central issue for reanimation and the law is whether one believes that the implications of digital technology require a readjustment of intellectual property rights or not. Legal protections of intellectual property in general are premised on the belief that they will spur the creation of original works;⁷⁴⁹ thus, currently images of celebrities are awarded some protection even after their deaths.⁷⁵⁰ This regime could be maintained. But it does not take into account two problems. First, even if a reanimation is authorized, a celebrity may say or do things that they never did in real life, and perhaps never would have. Deformation can be transmuted into effective defamation.⁷⁵¹ Second, intellectual property law was not intended to grant perpetual protection.⁷⁵² But if celebrities can star in new works even after death, they forever can be circumscribed from the public domain—a common cultural stock, if one will⁷⁵³—frustrating constitutional purposes.⁷⁵⁴

Some commentators have put forward extreme suggestions. At one end is a belief that no reanimation should be allowed, because the performers could not be consulted;⁷⁵⁵ almost certainly Bogart, Cagney, and Armstrong did not give their

⁷⁴⁷See Gellene, *supra* note 677, at 53.

⁷⁴⁸See Tomlinson & Harris, *supra* note 744, at 27 n.137.

⁷⁴⁹Silver, *supra* note 667, at 409 (citing *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984)).

⁷⁵⁰See *infra* text accompanying notes 773-793.

⁷⁵¹See Johnson-Laird, *supra* note 230, at 14.

⁷⁵²United States Copyright Office, *supra* note 668, at 100.

⁷⁵³See *infra* text accompanying notes 762-769.

⁷⁵⁴U.S. CONST. art. I, § 8, cl. 8 (“To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries”).

⁷⁵⁵See, e.g., Thomas K. Landry, *Columbia-VLA Journal of Law & the Arts Roundtable on Electronic Rights*, 20 COLUM.-VLA J.L. & ARTS 605, 620 (1996) (citing Stephen B. Davis).

personal sanction to be included in a Diet Coke commercial.⁷⁵⁶ Indeed, although Astaire’s widow approved and was paid for his appearance for *Dirt Devil*, noting that “[m]y husband was often trying innovative things in his movies—dancing with props in unusual settings,”⁷⁵⁷ his daughter—who didn’t benefit financially—objected,⁷⁵⁸ calling the ad tasteless;⁷⁵⁹ one commentator labeled it “advertising necrophilia,” and called upon the courts to put an end to the practice.⁷⁶⁰ At another pole is a belief that technology has made intellectual property obsolete. Thanks to digitization, a philosopher might say, the only reality that should be considered real is the reality that each individual can perceive directly; otherwise there should be no impediments to what individuals can do with images.⁷⁶¹

But as seen in the previous Parts, extreme action and extreme inaction are not the best courses of action to adopt in response to the challenges posed by digital technology. What should be done is to evaluate how different the digital era truly will be from the past, and how existing law can be adapted to account for change accountable to digital technology; only then should more radical measures be implemented. The legal protection of identity will continue to be a necessary incentive for production of intellectual property—but the shield should not extend solely to benefit heirs and rightsholders. Further, the public should have access to celebrity images after a point, particularly because technology has helped to create a society focused on celebrities, limiting the tools with which human beings can

⁷⁵⁶See Tomlinson & Harris, *supra* note 744, at 26-27.

⁷⁵⁷Rose, *supra* note 699, at E1.

⁷⁵⁸See *Elvis on the TV, Elvis On Ice, Other Incarnations May Be the Result of Deal*, WALL STREET JOURNAL, May 12, 1997, at B6.

⁷⁵⁹See *id.* Ava McKenzie stated that the “paltry, unconscionable commercials are the antithesis of everything my lovely, gentle father represented.” Skip Wollenberg, *Super Bowl Ads Yield Fumbles, Scores*, SACRAMENTO BEE, Jan. 20, 1998, at E1.

⁷⁶⁰See Gene Shalit, *Dancing with the Devil*, STAR-LEDGER (Newark, NJ), Jan. 29, 1997, at 14.

⁷⁶¹See Johnson-Laird, *supra* note 230, at 14.

communicate; even if the intimacy is an illusion,⁷⁶² if we are denied access to their images forever, discourse will be made the poorer for it.⁷⁶³ Still, such discourse does not require that cultural assets be opened to debasement.

Indeed, the debate over publicity rights is all too often framed as just a question over to what extent a celebrity and heirs should be able to benefit from his image. But it is much more than that. “[C]elebrities haul so much semiotic freight in our culture.”⁷⁶⁴ The value of a celebrity’s image in fact depends on the attention it receives from the public and the media.⁷⁶⁵ The importance of having access to the images of celebrities is enhanced by the fact that so much culture today could be described as “mass-produced.”⁷⁶⁶ The centralizing of meaning-making—such as through Hollywood—facilitates the top-down management of popular culture, and therefore should bear a heavy burden of justification before impeding bottom-up creations.⁷⁶⁷ Indeed, the very nature of society could be at stake; in a “semiotic democracy” all citizens can participate in the generation and circulation of meaning and value.⁷⁶⁸ An example of this is how Judy Garland has been embraced by the gay community; although she might be less than pleased, her androgyny and fragile facade have become a powerful symbol for many.⁷⁶⁹

Surprisingly, however, reanimation has received relatively little attention from the public as well as academics. One journalist reported that no one he interviewed—from the fields of academia, law, advertising and technology—expressed any problems or complaints about the appropriateness or ethics of

⁷⁶²See Michael Madow, *Private Ownership of Public Image: Popular Culture and Publicity Rights*, 81 CALIF. L. REV. 125, 161 (1993).

⁷⁶³See generally *id.*

⁷⁶⁴See *id.* at 128.

⁷⁶⁵See *id.* at 193.

⁷⁶⁶See *id.* at 138.

⁷⁶⁷See *id.* at 134.

⁷⁶⁸See *id.* at 145.

⁷⁶⁹See *id.* at 194.

manipulating images of dead celebrities for commercial purposes.⁷⁷⁰ Perhaps, as for photography, this may be because the manipulation of celebrity images was known even before computers. Andy Warhol made frequent use of a publicity still of Marilyn Monroe, taken for the 1953 movie *Niagara*: Without the consent of Monroe or her estate, he enlarged it photomechanically, silkscreened the picture onto canvas, and surrounded it with additional colors and images.⁷⁷¹ No litigation it seems ever resulted. Thus, again, the problems posed are not new, but merely enhanced by technology. But this should not lead to complacency; as for child pornography, the implications of technology may suddenly be thrust into the spotlight, and law is often not in the vanguard of recognizing the significance of new technology.⁷⁷² We should be prepared now, rather than dealing with problems only once they transpire, as has been seen to occur in the above Parts.

Even if the laws currently protecting the rights of celebrities were not drafted with any expectation that they would or could continue to perform after their death, and at the bidding of multiple parties, they nevertheless can serve as a starting point. The current subset of law that appears best-suited to be deployed in a digital era is celebrity publicity rights.⁷⁷³ Publicity rights encompass more than appearance: The right of publicity is commonly defined as a celebrity's right to the exclusive use of his name or likeness.⁷⁷⁴ Although the right is limited by the First

⁷⁷⁰See Rose, *supra* note 699, at E1.

⁷⁷¹See Weiler, *supra* note 670, at 169. See also *supra* text accompanying notes 86, 717-719, *infra* text accompanying note 829.

⁷⁷²Carolina Saez, *Enforcing Copyrights in the Age of Multimedia*, 21 RUTGERS COMPUTER & TECH. L.J. 351, 351 (1995). Only a few years earlier, one commentator stated that a celebrity's deceased status was of no importance for publicity rights. See Madow *supra* note 762, at 144 n.75.

⁷⁷³Commentators debate the ultimate purpose of publicity rights—e.g., moral rights, allocative efficiency, and consumer protection. See Madow, *supra* note 762, at 178. This Paper does not consider the merits of the justification, or that debate, but merely assumes that the motivations would/will remain constant in a digital world.

⁷⁷⁴See, e.g., *Martin Luther King, Jr. Center for Social Change v. American Heritage Products, Inc.*, 296 S.E.2d 697, 700 (Ga. 1982). See generally Madow, *supra* note 762 at 130, n.13.

Amendment,⁷⁷⁵ and the terms and interpretation of state laws vary,⁷⁷⁶ often there need only be a resemblance;⁷⁷⁷ a shared non-tangible trait, such as voice;⁷⁷⁸ or even just the use of a phrase, term, or image that evokes a celebrity may incur liability.⁷⁷⁹ A computer-generated simulation of a celebrity thus would almost without a doubt be censurable.⁷⁸⁰ A comparable recent example, although it did not involve digital manipulation or ultimately lead to litigation, is that of Dyna Taylor, who publicly lamented that her facial features were reflected in the lead character of Walt Disney Studios' 1995 movie *Pocahontas*, after she was paid only \$200 to be a preliminary model for the film's animators.⁷⁸¹

But the challenge in utilizing publicity rights as a tool to solve problems of reanimation is that the publicity rights regime is already a confused one.⁷⁸² In regard to the inheritance of publicity rights, the foundation for the law in many states was set by a series of lawsuits by Elvis Presley Enterprises,⁷⁸³ culminating in the 1984 Tennessee Protection of Personal Rights Statute⁷⁸⁴ which gives a person, and his heirs for 10 further years, the rights to that person's name, photograph and likeness.⁷⁸⁵ The statute therefore allows a celebrity's heirs not only to profit from

⁷⁷⁵See Giacoppo, *supra* note 695, at 612.

⁷⁷⁶See Beard, *supra* note 668, at 150-55. See also *infra* notes 782-792.

⁷⁷⁷See *Ali v. Playgirl*, 447 F. Supp. 723, 726 (S.D.N.Y. 1978).

⁷⁷⁸See *Midler v. Ford Motor Co.*, 849 F.2d 460 (9th Cir. 1988); *Waits v. Frito-Lay*, 978 F.2d 1093 (9th Cir. 1992).

⁷⁷⁹See *Carson v. Here's Johnny Portable Toilets, Inc.*, 698 F.2d 831 (6th Cir. 1983); *Motschenbacher v. R. J. Reynolds Tobacco Co.*, 498 F.2d 821 (9th Cir. 1974); *Onassis v. Christian Dior-New York, Inc.*, 472 N.Y.S.2d 254 (Sup. Ct. 1984); *Hirsch v. S. C. Johnson & Son, Inc.*, 280 N.W.2d 129 (Wis. 1979). *But see Tin Pan Apple, Inc. v. Miller Brewing Co., Inc.*, 737 F. Supp. 826 (S.D.N.Y. 1990).

⁷⁸⁰*Cf. Vanna White v. Samsung Electronics America, Inc.*, 971 F.2d 1395 (9th Cir. 1992) (celebrity depicted as a robot).

⁷⁸¹See Patti Hartigan, *Asking face value A 'Pocahontas' model looks for recognition*, BOSTON GLOBE, July 11, 1995, at 1.

⁷⁸²See Kunath, *supra* note 719, at 876-77.

⁷⁸³*Cf. supra* text accompanying note 685.

⁷⁸⁴Tenn. Code Ann. §§ 47-25-1101 to 47-25-1108 (1997).

⁷⁸⁵See Tenn. Code Ann. § 47-25-1104(a).

his image but ability to keep that image untarnished.⁷⁸⁶ But this regime is not universal. Some states, such as Georgia, have recognized an inheritable and devisable common law right of publicity,⁷⁸⁷ but others, such as New York have found to the contrary.⁷⁸⁸ Twelve states have a codified right of publicity, but with significant variations.⁷⁸⁹ Nine specifically address post-mortem rights, not all favorably, and other states have adopted or denied post-mortem rights through common law.⁷⁹⁰ California has codified an inheritable right, but has granted it a limited duration of 50 years,⁷⁹¹ a figure which places it in the middle of state ranges of 10-100 years,⁷⁹² but also among the commonly used, given its setting.⁷⁹³ The legal problems surrounding the devise of celebrity publicity rights thus are already “explosive,”⁷⁹⁴ digital technology aside.⁷⁹⁵

But even if laws establishing celebrity publicity rights are in some respects troubled, they may still be the best vehicle for addressing digital imagery issues. Because their reach is expansive, there is little doubt that they could be applied to such images. A few commentators have suggested otherwise,⁷⁹⁶ but their reasons fall apart under even cursory scrutiny. One commentator draws an analogy to the colorization of films; because the manipulation of a work does not destroy the

⁷⁸⁶See Bill Ellis, *Sensible Elvis Inc. Aims to Grow Rock-Solid Empire*, COMMERCIAL APPEAL (Memphis, TN), Aug. 17, 1997, at A1.

⁷⁸⁷See *Martin Luther King, Jr. Center for Social Change v. American Heritage Products, Inc.*, 296 S.E.2d 697, 705 (Ga. 1982).

⁷⁸⁸See *Stephano v. News Group Publications*, 474 N.E.2d 580, 583 (N.Y. App. Ct. 1984); *Pirone v. MacMillan*, 894 F.2d 579, 585 (2d Cir. 1990).

⁷⁸⁹James Barr Haines, *First Amendment II: Developments in the Right of Publicity*, 1989 ANN. SURV. AM. L. 211, 215 (1990).

⁷⁹⁰See Beard, *supra* note 668, at 147-50.

⁷⁹¹See MacIntyre, *supra* note 661, at 3.

⁷⁹²See Beard, *supra* note 668, at 155.

⁷⁹³See Martin, *supra* note 694, at 113

⁷⁹⁴See *id.* (quoting Bruce Weber).

⁷⁹⁵For a comprehensive summary of state publicity rights, see Madow, *supra* note 762, at 133 n.23.

⁷⁹⁶See, e.g., *id.*

original, “[e]veryone has a right to alter his or her copies of any work of art to suit individual needs.”⁷⁹⁷ But this is simply not the law; footage cannot be used, such as to be colorized, much less circulated without permission of the copyright holder.⁷⁹⁸ Indeed, colorization might be construed to support exactly the opposite premise; if the use of monochrome is part of a film’s aesthetic, to colorize is to blaspheme the creators’ vision, even if one does not directly assault it.⁷⁹⁹

The first inquiry is to determine whether existing laws already would apply to reanimations, or if new law would be necessary. Some commentators, focusing not surprisingly on California law, have concluded that it would, even though the text is not explicit.⁸⁰⁰ But the law contains an important escape clause; California statutes⁸⁰¹ include an exception for depictions of a celebrity on television or in film,⁸⁰² originally intended to ensure that biographies could be produced.⁸⁰³ But now this exemption would allow exploitation of a celebrity’s image that was simply inconceivable when the statute was drafted: This requirement should be rolled back, commentators appear to agree. But they differ as to how: Whether reanimations should be exempted for biographies, but not for other purposes,⁸⁰⁴ or

⁷⁹⁷Smith, *supra* note 683, at X3.

⁷⁹⁸See, e.g., MacIntyre, *supra* note 661, at 3.

⁷⁹⁹Craig A. Wagner, *Motion Picture Colorization, Authenticity, and the Elusive Moral Right*, Note, 64 N.Y.U. L. REV. 628, 636-38 (1989).

⁸⁰⁰See Giacoppo, *supra* note 695, at 619-20.

⁸⁰¹Cal. Civil Code § 990(n)(1) (West 1997).

⁸⁰² This section shall not apply to the use of a deceased personality's name, voice, signature, photograph, or likeness, in any of the following instances:

- (1) A play, book, magazine, newspaper, musical composition, film, radio or television program, other than an advertisement or commercial announcement not exempt under paragraph (4).
- (2) Material that is of political or newsworthy value.
- (3) Single and original works of fine art.
- (4) An advertisement or commercial announcement for a use permitted by paragraph (1), (2), or (3).

See *id.* § 990(n)(1).

⁸⁰³See Martin, *supra* note 694, at 127-28. Similar exemptions exist in Nevada, Oklahoma, and Texas. See Kunath, *supra* note 719, at 884.

⁸⁰⁴See Martin, *supra* note 694, at 130-31.

whether the courts can be entrusted to interpret the existing right of publicity in a sensible manner, without new, added statutory guidance.⁸⁰⁵ One proposal would create a fair use doctrine for publicity rights, as a mitigating force.⁸⁰⁶

The inquiry then turns to how publicity rights should be adjusted. There is a circular element; current publicity rights regimes are attuned to how long a celebrity's star is expected to take to fade, a period which may change if they now can be reanimated.⁸⁰⁷ Further, hard to predict exactly what will happen to a celebrity's fame. One commentator suggests that if producers know a performer will be in the public domain once deceased, he will be paid less while alive.⁸⁰⁸ But perhaps he would also be paid less if he was enabled to control future uses of his image, because producers would not be able to use that footage to create works of which he would not approve, such as a violent erotic thriller.⁸⁰⁹ Current case law provides an imperfect guide; although some cases have dealt with celebrity look-alikes,⁸¹⁰ reanimation allows for perfect, extended resurrections.⁸¹¹ Any regime in the end must allow for a balancing of factors, in order to take account of both technology and consequences that cannot now be predicted.⁸¹² One possible set of conditions would ponder if a reanimation was used to inform or to entertain;⁸¹³ if it had a commercial purpose;⁸¹⁴ if it made a cultural contribution;⁸¹⁵ and if the reanimation invoked the actor or rather merely a character that he depicted.⁸¹⁶

⁸⁰⁵See Beard, *supra* note 668, at 157-58; Kunath, *supra* note 719, at 884.

⁸⁰⁶See Giacoppo, *supra* note 695, at 628.

⁸⁰⁷See Martin, *supra* note 694, at 132.

⁸⁰⁸See Giacoppo, *supra* note 695, at 622.

⁸⁰⁹See *id.* at 623.

⁸¹⁰See, e.g., Allen v. National Video, Inc., 610 F. Supp. 612 (S.D.N.Y. 1985).

⁸¹¹See Giacoppo, *supra* note 695, at 623.

⁸¹²See *id.* at 628.

⁸¹³See Kunath, *supra* note 719, at 886.

⁸¹⁴See *id.* at 886.

⁸¹⁵See *id.* at 890.

⁸¹⁶See *id.* at 893. See also *McFarland v. Miller*, 14 F.3d 912, 921 (3rd Cir. 1994) (“[P]erformers were identified with the image developed on-screen. Thus, the actor who developed the image

The best course would appear to be a moderate one, reducing the rights of heirs—depending on the rights a state grants to begin with—without eliminating altogether their ability to protect the legacy of their ancestor. It is true that if a celebrity was not motivated by the rewards his image could reap through digital technology, then the reasons why his heirs should merit the windfall produced by this new technology are somewhat obscure. If protected for 100 years, they will enter the public domain long after those who would be able to enjoy nostalgia through reanimation have passed on.⁸¹⁷ Judge Cornelia G. Kennedy’s dissent in *Carson* questioned why and whether publicity rights should extend to phrases or other things merely associated with an individual;⁸¹⁸ one might likewise ask why they should extend to performances that are merely associated with an individual, made possible only by digital technology. Indeed, although she did not address specifically the importance of celebrities as icons for public/societal discourse,⁸¹⁹ Kennedy did note the importance of recognizing the countervailing interests of free enterprise and free expression when granting a monopoly over an image.⁸²⁰ Publicity rights were not designed to deal with this conflict, and commentators warn that if extended too far they in fact may hinder the further development of technology, inviting litigation over every advance.⁸²¹ In sum, in an earlier era, before technology, publicity rights benefited actual effort; now a performer need work only once, or even not at all, to receive enduring protection of his image.⁸²²

But at the same time, one does not wish to create a complete free market in celebrity images. There are reasons to benefit ones heirs—if for no other aim than

had the right to exploit it as superior to third parties which had nothing to do with the actor or the character identified with the actor.”); *supra* text accompanying notes 927-948.

⁸¹⁷See Beard, *supra* note 668, at 165.

⁸¹⁸See *Carson v. Here’s Johnny Portable Toilets, Inc.*, 698 F.2d 831, 838 (6th Cir. 1983).

⁸¹⁹See *supra* text accompanying notes 762-769.

⁸²⁰See *Carson*, 698 F.2d at 839.

⁸²¹See Kunath, *supra* note 719, at 896, 901.

⁸²²See *id.* at 900-01.

a celebrity may trust them to manage his image better than advertisers.⁸²³ Indeed, studies suggest that the public does not want to see celebrities exploited, such as in the specter of pornographic simulations.⁸²⁴ One reason is that, as noted previously, deceased artists would have no control over their performances, they could be made to do or say things they would never have done in real life.⁸²⁵ Artists who create theatrical, musical, and other performances are concerned about how they are presented⁸²⁶—and experience shows that if a state’s right of publicity expires on the death of a celebrity, open season often is declared on his image.⁸²⁷ This will not necessarily lead to defilement: “Dead actors who could not dance would suddenly find they could; even non-singing actresses could have a voice like Maria Callas.”⁸²⁸ But if one is interested in social discourse, one does not want a free-for-all that may demean celebrities. Instead of the vanilla uses noted above, a reanimated Marilyn Monroe could, say, be made to appear in a pornographic *ménage-a-trios* with Laurence Olivier and John Wayne.⁸²⁹ Such offensive uses are not entirely novel; California’s law was spurred by a print ad depicting Eastwood in drag with a feather boa and wig,⁸³⁰ and in the 19th century images ranging from Buffalo Bill Cody to Leo Tolstoy were used to sell cigarettes.⁸³¹ But they still are a departure from relatively innocuous uses, such as a t-shirt that says “Father Knows Nothing.”⁸³² “What the Diet Coke commercial teaches us is that performances, at

⁸²³See *Lugosi v. Universal Pictures*, 603 P.2d 425, 446 (Cal. 1979) (Bird, C.J., dissenting).

⁸²⁴See Beard, *supra* note 668, at 165. See also *infra* text accompanying note 829.

⁸²⁵See MacIntyre, *supra* note 661, at 3.

⁸²⁶See Tomlinson & Harris, *supra* note 744, at 27.

⁸²⁷See *id.*

⁸²⁸MacIntyre, *supra* note 661, at 3.

⁸²⁹See *id.* Cf. *supra* text accompanying notes 86, 717-719, 771.

⁸³⁰See Kunath, *supra* note 719, at 865.

⁸³¹See Madow *supra* note 762, at 156.

⁸³²See *id.* at 200.

least of deceased persons, can be manipulated and used.”⁸³³ While actors do want their image to endure,⁸³⁴ and some such as Marlon Brando may have chosen to preserve themselves for posterity via a digital scan,⁸³⁵ others may be more concerned with controlling how their legacy will be presented, and deserve at least some deference in what will actually happen.⁸³⁶

C. A Changing Paradigm

Unlike for evidence and child pornography, however, this Author believes that current law may—although not necessarily—prove inadequate for dealing with the problems digital technology will present in regard to the reanimation of dead celebrities. This is because, unlike for evidence and child pornography, the fundamental issue is not whether an image is real or instead has been subject to manipulation, or is perhaps entirely a product of the imagination. For purposes of reanimation, images may be merely simulations and yet be culpable. One can infringe a protected interest merely by creating a simulation. How far intellectual property should extend is certainly a topic for debate, but few argue about if its protections should exist at all.⁸³⁷ Therefore measures may have to go farther than in the Parts above to protect even existing interests, much less more broad ones.

This section therefore discusses how existing intellectual property regimes could be expanded—although again if and only if necessary to do so—to counter digital incursions. Some commentators have suggested that for the law the core problem digital imagery poses is that technology moves so fast that no legislative

⁸³³Tomlinson & Harris, *supra* note 744, at 27.

⁸³⁴See Beard *supra* note 668, at 167.

⁸³⁵See Giacoppo *supra* note 695, at 608.

⁸³⁶*Cf. supra* note 71 (vanishing of Soviet luminaries after their deaths and/or discommendations).

⁸³⁷*But see* Smith, *supra* note 683, at X3.

body can keep up with it.⁸³⁸ But even if this is true, it is hardly a justification for inaction or ill-informed action; and for reanimation, it is not true—at least yet. For a brief period of time—until available computer power again doubles or triples⁸³⁹—intellectual property problems pertaining to realistic images in film are still unlikely to arise:⁸⁴⁰ Virtual reality systems still lack the power to present sufficiently photorealistic images.⁸⁴¹ Now is therefore the time and opportunity to plan ahead, and prepare for that which technology will have wrought.⁸⁴² Lawyers are “among the most important hands on deck during this challenging time.”⁸⁴³

Forms of intellectual property in addition to publicity rights thus could be augmented in order to manage problems associated with reanimation.⁸⁴⁴ For example, heirs or rightsholders possibly could file a claim for trade dress infringement.⁸⁴⁵ Until 1992, to prove trade dress infringement, a party had to demonstrate that the visual appearance of a work was non-functional, that it had acquired secondary meaning, and that the use of the same or similar artistic style was likely to cause consumer confusion.⁸⁴⁶ But a recent Supreme Court decision

⁸³⁸See Johnson-Laird, *supra* note 230, at 10.

⁸³⁹See *id.* at 19. See also *The middle age of the transistor*, ECONOMIST, Jan. 3, 1998, at 77 (“Moore’s Law” states that the number of transistors per chip doubles every 18 months). A similar rule predicts that prices for high-end computers fall 33% every 12-18 months. See Johnson, *supra* note 521, at 316. One commentator in 1994 therefore predicted that “synthetic actors” would arrive on home computers in between 1999 and 2002. See *id.* See also *supra* text accompanying note 744.

⁸⁴⁰See Johnson-Laird, *supra* note 230, at 19.

⁸⁴¹But see *supra* text accompanying notes 711-712.

⁸⁴²The opportunity may be fleeting, if it is not already just about to be surpassed; other technological innovations, such as the photocopier, raced ahead of the law. See Silver, *supra* note 667, at 410.

⁸⁴³See Landry, *supra* note 755, at 605.

⁸⁴⁴A more radical suggestion, beyond the scope of this Paper, is to introduce a new regime of moral rights, historically disfavored in the United States. See, e.g., Beard, *supra* note 668, at 169.

⁸⁴⁵15 U.S.C. § 1125(a) (1997).

⁸⁴⁶See William S. Coats & David H. Kramer, *Not As Clean As They Wanna Be: Intermediate Copying in Campbell v. Acuff-Rose*, 16 HAST. COMM./ENT. L.J. 607, 612 n.21 (1994) (*citing* *Fuddrucker, Inc. v. Doc’s B.R. Other, Inc.*, 826 F.2d 837, 843 (9th Cir. 1987)).

extended the statutory protections of trade dress to works which are inherently distinctive, whether or not they have acquired secondary meaning.⁸⁴⁷ Afterwards, a court ruled that even though a set of posters were sufficiently distinct as to avoid liability for copyright infringement, their imitation of an artist's style was an infringement on that artist's trade dress.⁸⁴⁸ Therefore, if a dead celebrity's performance embodies an artistic style,⁸⁴⁹ heirs and rightsholders may be able to use it as a cudgel to block works that depict the celebrity but do not otherwise infringe copyright or other intellectual property protections.⁸⁵⁰ But trade dress is a nuclear weapon in the sense that, unlike most other intellectual property types, trade dress does not have a finite term but potentially may endure forever.⁸⁵¹ It thus should be called upon only if absolutely necessary; while "such expansive protection would be a boon to a few often-imitated artists, it could extend an artist's monopoly beyond socially optimal levels, thereby stifling creativity."⁸⁵²

An additional field of law that could be utilized to address the problems of reanimation is false light privacy, a means by which the sully of celebrities once they are no longer in a position to defend themselves could be precluded. Commentators have concluded that false light privacy actions could be sustained for digitally altered photos of living persons:⁸⁵³ for example, 1990 Massachusetts gubernatorial candidate John Silber supposedly would have had grounds to sue

⁸⁴⁷See *Two Pesos, Inc. v. Taco Cabana, Int'l, Inc.*, 505 U.S. 763, 772 (1992).

⁸⁴⁸See *Romm Art Creations Ltd. v. Simcha Int'l, Inc.*, 786 F. Supp. 1126, 1130-31 (E.D.N.Y. 1992).

⁸⁴⁹See *supra* text accompanying note 728.

⁸⁵⁰E.g., a reanimation based on public domain images of a dead celebrity. The footage of Jimmy Stewart in *It's a Wonderful Life*, for example, is in the public domain, although Republic Pictures has blocked the airing of the film itself because Republic owns the rights to the short story on which the film was based. See James Bates, *Company Town; A Not-So-Wonderful Copyright Issue*, L.A. TIMES, Mar. 26, 1996, at 6.

⁸⁵¹See Coats & Kramer, *supra* note 846, at 612 n.21 (citing 15 U.S.C. § 1125(a) (1997)).

⁸⁵²See *id.*

⁸⁵³See Potter, *supra* note 34, at 497.

William Weld over a campaign commercial in which an image of Silber had been manipulated to appear more menacing.⁸⁵⁴ False light cases involving photographs often have involved unflattering appearances. In *Burton v. Crowell Publishing Co.* an action was brought to enjoin the use of a photograph that, due to an optical illusion, made the plaintiff appear physically deformed.⁸⁵⁵ The court reasoned that if “such a picture [had] been deliberately produced, surely every right-minded person would agree that he would have had a genuine grievance; and the effect is the same whether it is deliberate or not.”⁸⁵⁶ Even prior consent to be photographed does not leave one without redress.⁸⁵⁷ A reasonable person does not anticipate that it will be distorted or changed from a “normal” appearance.⁸⁵⁸ But false light is a cause of action for living individuals.⁸⁵⁹ To extend its protection to dead celebrities would be a radical change, requiring substantial justification that has not been evidenced in legal debate. But the seeds for such a justification may have been sown: In *Gill v. Curtis Publishing Co.*⁸⁶⁰ the court concluded that technological advances by the mass media had made it necessary for the courts to be able to create a legally enforceable privacy right to protect against media encroachment upon an individual’s personality and “spiritual sensibilities.”⁸⁶¹

⁸⁵⁴See Dartley, *supra* note 117, at 205.

⁸⁵⁵See 82 F.2d 154 (2d Cir. 1936) (Hand, J.).

⁸⁵⁶*Id.* at 155.

⁸⁵⁷See, e.g., *Russell v. Marlboro Books*, 183 N.Y.S.2d 8 (Sup. Ct. 1959) (retouched photograph of model used in suggestive advertisement). One commentator has noted that a sort of alteration that might be grounds for action are pornographic ones, although simple poor quality might also serve. See Beard, *supra* note 668, at 187-88.

⁸⁵⁸See *id.* at 156.

⁸⁵⁹See, e.g., *Moore v. Charles B. Pierce Film Enterprises Inc.*, 589 S.W.2d 489, 491 (Tex. Civ. App. 1979). Similarly, defamation is a remedy for the living, see Giacoppo, *supra* note 695, at 609, although 10 states still have statutes that criminalize the libel of the dead, and three allow for civil actions, see Beard, *supra* note 668, at 187.

⁸⁶⁰239 P.2d 630 (Cal. 1952).

⁸⁶¹See *id.* at 633.

The area of law with probably the most potential to be adapted to address reanimation problems, however, is the copyright sphere of intellectual property. It already has been briefly mentioned: apparently all reanimations to date have been authorized by those who own the footage used in the process.⁸⁶² Further, extensive scholarship already has been devoted to the creation and copyright of montages of existing images,⁸⁶³ as well as to the piracy and distribution of digital images.⁸⁶⁴ But the creation of new moving images from existing components—a “digital collage,” if one will—or without any reference to existing works has not.⁸⁶⁵ But copyright potentially could address reanimation through such techniques in at least two ways. Digital collages may be held to be a permutation of fair use,⁸⁶⁶ and thus permissible under the law, or instead to be a permutation of derivative works,⁸⁶⁷ and thus not permissible under the law. Further, fictional characters long have been granted at least some measure of copyright protection. If the on-screen personas of celebrities were to be defined as characters, they would be protected separately from the work in which the celebrities appeared, as well as separately from the publicity rights of the celebrities that portrayed them.

Copyright attempts to establish a balance between the interests of the creators of works, and the interests of the public that would make their own use of them, through fair use.⁸⁶⁸ More than any other form of intellectual property, copyright thus provides an internal means through which to mediate disputes.⁸⁶⁹

⁸⁶²See *supra* text accompanying note 741.

⁸⁶³See, e.g., Potter, *supra* note 34, at 525-26.

⁸⁶⁴See Landry, *supra* note 755, at 640-41.

⁸⁶⁵See Beard, *supra* note 668, at 108.

⁸⁶⁶17 U.S.C. § 107 (1997).

⁸⁶⁷17 U.S.C. § 106(2) (1997).

⁸⁶⁸See Niva Elkin-Koren, *Copyright Law and Social Dialogue on the Information Superhighway: The Case Against Copyright Liability of Bulletin Board Operators*, 13 CARDOZO ARTS & ENT. L.J. 345, 392 (1995) (“copyright doctrine mediates public interest in the production of information and the public interest in access to information”).

⁸⁶⁹See *id.*

But digital works present a special problem because they inherently challenge our standing notions of what a creative work *is*. In their context, “the traditional distinction between producers and consumers of images evaporates.”⁸⁷⁰ For the most part, the creation of new digital works still requires some dependence on existing works.⁸⁷¹ But it is important to recognize that not all digital works are alike; there are different types of digital collages, some more fair than others.

One commentator, discussing “digital sampling,” audio collages made possible by technology that have been the subject of legal disputes since at least the early 1990s,⁸⁷² asserted that rappers like the Beastie Boys *reproduce* music, whereas frequently-sampled artists like James Brown *produce* music.⁸⁷³ In a more traditional context, one may compare Edouard Manet’s *Olympia*, based on Titian’s *Venus*, and Robert Rauschenberg’s *Persimmon*, based on Pieter Paul Rubens’ *Venus*.⁸⁷⁴ Manet broke away from the style of the original painting by introducing a flatness in the paint and making his central figure a prostitute rather than a goddess.⁸⁷⁵ Rauschenberg, in contrast, added little to Rubens, simply silkscreening photographic “originals” directly onto his canvases.⁸⁷⁶

Therefore, legal tools are needed through which a reanimation can be determined to be either novel or derivative (assuming that we merely seek to maintain the current levels of legal protection, and not a wholesale revolution in intellectual property law), even while recognizing that some elements will by definition be derivative, for the entire purpose of reanimation is to evoke the image

⁸⁷⁰See MITCHELL, *supra* note 34, at 52.

⁸⁷¹See Beard, *supra* note 668, at 120.

⁸⁷²See, e.g., *Grand Upright Music v. Warner Brothers Records*, 780 F. Supp. 182 (S.D.N.Y. 1991).

⁸⁷³See Robert M. Szymanski, *Audio Pastiche: Digital Sampling, Intermediate Copying, Fair Use*, 3 UCLA ENT. L. REV. 271, 284 (1996).

⁸⁷⁴See *id.*

⁸⁷⁵See *id.*

⁸⁷⁶See *id.*

of an existing, if passed on, celebrity.⁸⁷⁷ Certain parts of the human face are powerful recognition cues: The Lone Ranger covered his eyes and not his forehead for a reason.⁸⁷⁸ No reported decision yet has addressed digital sampling in the context of visual works, much less moving images, but some guidance may be provided by the abortive *FPG Int’l v. Newsday, Inc.*⁸⁷⁹ The plaintiff alleged that Newsday had taken a photograph managed by FPG, depicting a pair of suited, clock-faced businessmen sprinting through a desert, and scanned it into a computer.⁸⁸⁰ Newsday then allegedly edited out parts of the landscape, and introduced new elements from another FPG photograph.⁸⁸¹ The resulting image was used to illustrate a lead article on virtual reality.⁸⁸² The case was settled, without a published opinion.⁸⁸³ But under the settlement reached, FPG received \$20,000 in licensing fees from Newsday—ten times what the agency would have normally charged for the use of the photographs.⁸⁸⁴ To err is expensive.

But in analyzing legal issues regarding reanimation one can now look to decisions in related areas of copyright law for guidance, most notably the digital sampling of audio works.⁸⁸⁵ The most notable example is that of 2 Live Crew’s rap parody *Pretty Woman* of Roy Orbison’s copyrighted hit song *Oh Pretty Woman*.⁸⁸⁶ In producing its parody, 2 Live Crew apparently digitally sampled the Orbison song and incorporated a portion of the original into its own “less pristine”

⁸⁷⁷*Cf.* *Cliff Notes, Inc. v. Bantam Doubleday Dell Publishing Group, Inc.*, 886 F.2d 490, 495 n.3 (1989) (“parody . . . must evoke the original”).

⁸⁷⁸*See* Johnson-Laird, *supra* note 230, at 18.

⁸⁷⁹No. 94-1036 (S.D.N.Y., filed Feb. 16, 1994).

⁸⁸⁰*See* Rafter & Coats, *supra* note 212, at 145-46.

⁸⁸¹*See id.*

⁸⁸²*See id.*; Joshua Quittner, *Far Out Welcome to Their World Built of MUD*, *NEWSDAY*, Nov. 7, 1993, at 3.

⁸⁸³*See* Rafter & Coats, *supra* note 212, at 145-46..

⁸⁸⁴*See id.*

⁸⁸⁵*See* Seecof, *supra* note 240, at 397-98.

⁸⁸⁶*See* *Campbell v. Acuff-Rose*, 510 U.S. 569 (1994).

version.⁸⁸⁷ The Supreme Court’s decision indicates that by sufficiently altering a digitized “intermediate copy,” one may capture the essence of an artist’s work, yet not infringe the artist’s copyright.⁸⁸⁸ The implications are far-reaching. The original artist is not compensated for the use of his work, even though much of his creative effort may be reflected/exploited in a later digital manipulation.⁸⁸⁹ Moreover, digital manipulations could damage or even devastate the market for his work by making less expensive, stylistically evocative works available.⁸⁹⁰ Indeed, if artists are as a result deprived of economic rewards for their efforts, the incentives for even the very creation of original works may decline.⁸⁹¹

So far this does not appear to have happened, however. Perhaps art in a digital era will prove different than before, a cooperative endeavor like the early days of the computer industry that made it possible.⁸⁹² But this may be unlikely, especially in the long term, given the effort currently being put into developing methods to protect intellectual property in a digital era.⁸⁹³ Indeed, if the digital era proves to be different than those that have become before, it may be one in which *stricter* protections are required. Some commentators argue that the key difference to focus on is intermediate copying.⁸⁹⁴ Digital works are distinct in that they are inherently processable and transformable.⁸⁹⁵ In order to prepare a digital manipulation, an individual must first transfer a copyrighted work into a computer’s memory, creating a new work that is neither the final work nor the

⁸⁸⁷See Coats & Kramer, *supra* note 846, at 608.

⁸⁸⁸See *id.* at 611.

⁸⁸⁹See *id.*

⁸⁹⁰See *id.*

⁸⁹¹See *id.*

⁸⁹²See *generally* ANNALEE SAXENIAN, REGIONAL ADVANTAGE: CULTURE AND COMPETITION IN SILICON VALLEY AND ROUTE 128, 30-34 (1994).

⁸⁹³See, e.g., *In the picture*, ECONOMIST, Jan. 10, 1998, at 67 (discussing digital watermarks).

⁸⁹⁴See Coats & Kramer, *supra* note 846, at 612.

⁸⁹⁵See MITCHELL, *supra* note 34, at 53.

original.⁸⁹⁶ Historically, it rarely has been necessary to contemplate intermediate copying because works that draw upon such copies were likely themselves to infringe a copyrighted original.⁸⁹⁷ But technology has made it much more likely that final works will not be infringements, because they are either a fair use, as above, or because the final product is sufficiently dissimilar from the original.⁸⁹⁸

One possible solution would be to view all works based on digital samples of another work as infringements, based on the fact that the sampler certainly had to have made a copy of the original work as a preliminary step in the process of creating his work.⁸⁹⁹ Such a regime could be mediated by a compulsory licensing program: Some commentators urge that such a system is in fact imperative, the only means by which to ward off the hazards of digital technology.⁹⁰⁰ Indeed, some of them observe that a licensing scheme could take advantage of the same technology that makes it necessary, allowing for online registration and pattern matching to determine if works are similar.⁹⁰¹ One proposal would allow for some licensing requests to be denied, to allow performers some control over their works, but with a statutorily set price and minimum number or percentage of requests that must be granted, in order to ensure some public access to them.⁹⁰²

But whether such a program would be effective for even audio works has been intensely scrutinized; video likely would pose even more complications.⁹⁰³ For example, at the beginning, one must determine who has rights in a work; the

⁸⁹⁶See Coats & Kramer, *supra* note 846, at 624.

⁸⁹⁷See *id.* at 614.

⁸⁹⁸See *id.* at 617.

⁸⁹⁹See Rafter & Coats, *supra* note 212, at 146.

⁹⁰⁰See Kunath, *supra* note 719, at 902-03; Saez, *supra* note 772, at 295; Seecof, *supra* note 240, at 399.

⁹⁰¹See Silver, *supra* note 667, at 432.

⁹⁰²See Kunath, *supra* note 719, at 904-05.

⁹⁰³*Cf.* Jonathan A. Franklin, *Digital Image Reproduction, Distribution and Protection: Legal Remedies and Industrywide Alternatives*, 10 SANTA CLARA COMPUTER & HIGH TECH. L.J. 347, 372 (1994).

Copyright Office has suggested that all the creators of a reanimation should, including not just directors but cinematographers, art directors, editors, and actors and actresses.⁹⁰⁴ Furthermore, a right to refusal if partial might not allow a celebrity to effectively protect their image—or depending on its terms could allow excessive protection, such as delaying any uses beyond the time at which it would have a market.⁹⁰⁵ Many of the same criticisms applied to a suggested audio licensing regime also here apply. Licensing proposals usually fail to take account of the fact that samples vary drastically in terms of their qualitative value.⁹⁰⁶ But deploying a multi-tiered, multi-factor test in order to take these differences into consideration would undercut the simplicity of licensing, requiring subjective judgments.⁹⁰⁷ Indeed, because there is a relatively small bargaining community for works, and each instance of sampling presents a unique set of considerations, some commentators have stated that legislative solutions may be inappropriate, if not detrimental.⁹⁰⁸ A purpose of sampling is to change the fundamental character of a work by dislocating it from its original context;⁹⁰⁹ imposed rigid compulsory licensing could counterproductively interfere with an artist granting permission to a manipulation of which they approve, or allow an artist to in the end block a manipulation over which they should have no control based on moral rights.⁹¹⁰

Further, like many other expansions of copyright, a rule of strict liability for digital intermediate copies would be a drastic shift in the balance of power, justified only to compensate for a previous shift due to digital technology; but there

⁹⁰⁴See United States Copyright Office, *supra* note 668, at 107.

⁹⁰⁵See Giacoppo, *supra* note 695, at 625.

⁹⁰⁶See Szymanski, *supra* note 873, at 295.

⁹⁰⁷See *id.*

⁹⁰⁸See *id.* at 298.

⁹⁰⁹See *id.* at 296.

⁹¹⁰See *id.*

is currently no social policy rationale that so demands.⁹¹¹ If all works based on intermediate copies were defined as infringements, “[s]ociety will be unable to recognize digital technology’s limitless potential for generating new works.”⁹¹² “Piggybacking” should be tolerated if the end result is sufficiently original;⁹¹³ and indeed, there is support for holding interim copies of art nonactionable.⁹¹⁴ One commentator postulates that if a copyrighted painting by Piet Mondrian were digitized, an artist/engineer could rearrange its precise color combinations and shapes to form a work which, while evocative of Mondrian, would yet appear dissimilar from any of his work: The resulting manipulation would not merely be Mondrianesque, but also would embody the artist/engineer’s creative expression, a valuable contribution to society—a contribution that would be denied life by a strict intermediate copying rule.⁹¹⁵ An additional problem is how to determine when a final image is based on another image, absent a paper—or, if one will, an electron—trail.⁹¹⁶ Many in the computer industry are said to presume that the dividing line falls when an image is not recognizable as the descendent of another image.⁹¹⁷ But recognizable by whom: The creator of an image? The reasonable man? The factfinder?⁹¹⁸ Alternatively, the arbiter could be how much data is shared

⁹¹¹See Coats & Kramer, *supra* note 846, at 618. A bill which would have explicitly extended copyright law to works transmitted by the Internet or other mediums such that a copy “is fixed beyond the place from which it was sent” died in committee in 1996, for example. H.R. 2441, 104th Cong. (1996); S. 1284, 104th Cong. (1996). See also *supra* text accompanying notes 837-838.

⁹¹²Coats & Kramer, *supra* note 846, at 624.

⁹¹³See Seecof, *supra* note 240, at 396-97.

⁹¹⁴See, e.g., *Knickerbocker Toy Company, Inc. v. Azrak-Hamway International, Inc.*, 668 F.2d 699 (2d Cir. 1982) (sample blister card utilizing artwork of competitor’s trademarked product held noninfringing).

⁹¹⁵See Rafter & Coats, *supra* note 212, at 139.

⁹¹⁶See *supra* text accompanying note 646.

⁹¹⁷See Johnson-Laird, *supra* note 230, at 18.

⁹¹⁸See *id.*

among the images. But again critical questions are left unanswered; e.g., what percentage of commonality among the dots in images is too much?⁹¹⁹

Another possible solution to re-establish a balance of rights is to permit an author to seek redress for intermediate copying alone.⁹²⁰ The law has recognized that this is possible; *Sega Enterprises, Ltd. v. Accolade, Inc.*⁹²¹ reaffirmed that intermediate copying could be an infringement,⁹²² although it did not find liability in that particular case.⁹²³ But, in the end, this approach might prove no better and no worse than a strict rule for all works based on digital intermediate copies. An intermediate copy is unlikely to create any *financial* injury for the original artist, unless the effects of any final work based on it are taken into account;⁹²⁴ liability for intermediate copies thus likely would be meaningless, or indistinguishable from liability for works based on a digital intermediate copy. What is necessary instead is a means by which to provide artists with a remedy when a final digital manipulation only nominally adds to the societal store of creative works.⁹²⁵ But this is by no means a likely prospect either, given the historical admonishment by Justice Holmes that jurists are ill-suited to judge the worth of artistic works.⁹²⁶

A further alternative to be considered is whether the historical protection of fictional characters by copyright could be extended to address reanimation.⁹²⁷ Because the Supreme Court has not ruled on the issue, the federal appeals circuits

⁹¹⁹*See id.*

⁹²⁰*See Coats & Kramer, supra* note 846, at 614.

⁹²¹977 F.2d 1510 (9th Cir. 1993).

⁹²²*See id.* at 1518.

⁹²³*See id.* at 1518, 1527-28.

⁹²⁴*See* Karen E. Georgenson, Comment, *Reverse Engineering of Copyrighted Software: Fair Use or Misuse?*, 5 ALB. L.J. SCI. & TECH. 291, 311-12 (1996).

⁹²⁵*See Coats & Kramer, supra* note 846, at 618.

⁹²⁶*See* *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 251 (1903) (“It would be a dangerous undertaking for persons trained only to the law to constitute themselves final judges of the worth of pictorial illustrations, outside of the narrowest and most obvious limits”).

⁹²⁷*See generally* Leslie A. Kurtz, *The Independent Legal Lives of Fictional Characters*, 1986 WIS. L. REV. 429 (1986).

have differed on how much protection fictional characters should be granted; the Second Circuit,⁹²⁸ for example, has been less generous than the Ninth Circuit.⁹²⁹ DC Comics' efforts to protect its character of Superman are a notable example, spanning more than five decades.⁹³⁰ In a digital world, one means by which to prevent the expropriation of the identity of dead celebrities might be to grant their on-screen personas that same type of protection. The mannerisms celebrities adopt once on camera is not necessarily their true identity, the subject of publicity rights, nor limited to a particular production, which would itself be protected by copyright. But celebrities are often identified by—and with—their public film roles.⁹³¹ Eastwood, for example, is known for his portrayal of rough-and-ready characters;⁹³² one usually does not need to know the plot and/or setting of an Eastwood film to have a feel for the type of character he will portray in it.⁹³³ This similarly has been noted to be true for other stars, such as Al Pacino.⁹³⁴

⁹²⁸See *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d Cir. 1930) (“the less developed the characters, the less they can be copyrighted”).

⁹²⁹See *Walt Disney Productions v. Air Pirates*, 581 F.2d 751, 754-55 (9th Cir. 1978) (distinguishing comic book and literary characters; for the former, there need not be plot similarities to find infringement).

⁹³⁰See *DC Comics Inc. v. Unlimited Monkey Business, Inc.*, 598 F. Supp. 110 (N.D. Ga. 1984) (holding “Super Stud” to infringe Superman); *Warner Bros., Inc. v. American Broadcasting Companies, Inc.*, 720 F.2d 231 (2d Cir. 1983) (holding “The Greatest American Hero” not to infringe Superman); *Detective Comics, Inc. v. Bruns Publications, Inc.*, 111 F.2d 432 (2d Cir. 1940) (holding “Wonderman” to infringe Superman). More than a decade of litigation was generated by Fawcett Publications’ *Captain Marvel*, which outsold Superman in the 1940s, until Fawcett settled and ceased publication in 1953. See, e.g., *National Comics Publications, Inc. v. Fawcett Publications, Inc.*, 191 F.2d 594 (2d Cir. 1951). See generally Andrew Smith, *SHAZAM! A new life begins for Captain Marvel*, COM. APPEAL (Memphis, TN), Jan. 16, 1994, at F1.

⁹³¹See Giacoppo, *supra* note 695, at 621.

⁹³²See, e.g., Miles Corwin, *Eastwood No ‘Dirty Harry’ in Last Scene as Mr. Mayor*, L.A. TIMES, April 10, 1988, at 3 (Eastwood is “best known as Dirty Harry Callahan, the surly police detective who carried a pistol the size of a dachshund. Dirty Harry was unaccustomed to patiently articulating his point of view and explaining his actions. If anyone disagreed with him he could simply whip out his oversized .44-caliber pistol and blow them away.”).

⁹³³But that is not so for Eastwood the man. See, e.g., John Anderson, *The Man Behind Dirty Harry / Separating Eastwood the actor from Eastwood the person isn’t easy and may actually be impossible, given how long he’s played the part*, NEWSDAY, Nov. 17, 1996, at C31 (“[I]f you’re

The value of a celebrity therefore lies not in who they *really* are, but in who they appear to be: A celebrity is as much a fictional character as Superman or Sam Spade.⁹³⁵ The parallels between celebrities and characters are numerous. Characters, despite their lack of tangible form, can take on a life beyond the works in which they are depicted.⁹³⁶ Further, a character is more than just an idea but a fully depicted individual; unlike a hypothetical “evil bear,” they possess a distinct protectable quantity.⁹³⁷ Further, treating celebrities as characters would therefore not prohibit all depictions of them; currently, for example, physical attribute and physiognomy are unprotectable quantities,⁹³⁸ and would not amount to infringement standing alone.⁹³⁹ But it would grant performers greater rights than they now possess. Already it appears that the producers of a television show do not own the elements of a character that are the contribution of an actor,⁹⁴⁰ but it is presently unclear who does. Further, the protection would not be frozen in time;

thinking about Eastwood the image, rather than Eastwood the man, [they are] flat-out contradictory”). Eastwood described his romantic role in *The Bridges of Madison County* as “closer to the real me than anything I’ve done.” James Verniere, *At Long Last Love After 40 years as a tough guy, Clint Eastwood becomes a romantic hero*, BOSTON HERALD, May 28, 1995, at 51. His governing style as mayor of Carmel, California was one of “moderation and fairness.” *Philosophy of a small-town mayor*, TAMPA TRIB., Dec. 25, 1997, at 18.

⁹³⁴See, e.g., Robin Eggar, *Pacino—Devil in disguise Drug baron, corrupt cop, killer—Al Pacino has always submerged himself into the roles from hell. Yet none compare to his latest incarnation: Satan. The star of ‘The Devil’s Advocate’ bares his soul to Robin Eggar*, DAILY TELEGRAPH (London), Jan. 10, 1998, (Magazine), at 30 (“All his career Al Pacino has been exploring the evil that men do”).

⁹³⁵Further, celebrities typically derive their fame from audiovisual performances; as such, although their characters would be hybrids, they would more closely resemble pictorial than literary characters, and therefore merit a greater measure of legal protection. Cf. Kurtz, *supra* note 927, at 467.

⁹³⁶See *id.* at 430.

⁹³⁷See Silver, *supra* note 667, at 419.

⁹³⁸See Beard, *supra* note 668, at 117.

⁹³⁹See *id.* at 129.

⁹⁴⁰See Kurtz, *supra* note 927, at 470 (noting appearance of Bruce Weitz, “Mick Belker” of *Hill Street Blues*, in character in a Burger King commercial despite producers’ objection). Humphrey Bogart, for example, presumably was unfettered even after *Casablanca* from appearing in film or television as a trenchcoated detective. *see id.*

characters can evolve. Mickey Mouse, for example, started off as a slightly sadistic adventurer, before later assuming a more milquetoast identity.⁹⁴¹

The protection of celebrities' images as if they were characters would draw together many of the concerns addressed above; heirs and rightsholders would not be granted complete control over a dead celebrity, but would via copyright have an enhanced ability to prevent the tarnishing of the celebrity's image. Again, a balance is required; characters, such as Superman, are used as a tool to discuss issues ranging from religion to the economy; they live in the public imagination, as part of the language.⁹⁴² One commentator has noted that there is a distinction between reanimating a celebrity to play a role, as they would in life, or to play themselves.⁹⁴³ This principle might embody the best possible solution as it would allow for some but not all uses; John Wayne, for example, could not be cast in a new cowboy movie, but could be cast against type, such as Genghis Kahn.⁹⁴⁴

In addition, one commentator has suggested that although reanimating a celebrity in an unsavory context strictly would raise questions under copyright law, elements of the questions would resemble problems under defamation law.⁹⁴⁵ Indeed, as for the colorization of films, many of the objections raised to digital technology seem to be less about money than about creative control. Protests after Ted Turner's purchase of the MGM film library were directed towards his claim that "I can do anything I want with them."⁹⁴⁶ George Lucas astutely recognized that colorization was only the tip of the iceberg: Films could be "recast with stars we never directed, uttering dialogue we never wrote, all in support of goals and

⁹⁴¹*See id.* at 432.

⁹⁴²*See id.* at 434.

⁹⁴³*See* Beard, *supra* note 668, at 164.

⁹⁴⁴A role Wayne actually played—less than convincingly—in the 1956 film *The Conqueror*.

⁹⁴⁵*See* DeStephano, *supra* note 693, at A20.

⁹⁴⁶*See* MITCHELL, *supra* note 34, at 53.

masters we never imagined we would serve.”⁹⁴⁷ But if celebrities were to also be characters, they would have added opportunity to control their depiction, without the potentially cumbersome problems that would accompany many of the possible solutions discussed above. But, of course, any solution should receive careful evaluation before implementation, as the unexpected may always transpire.⁹⁴⁸

Further, as noted previously, none of the solutions proposed above may actually prove necessary; the problem is that no one has attempted to determine whether they will, or even has tried to start practitioners and academics thinking about these issues. The challenges digital imaging poses for the law are vast; the current law that would apply to digitally resurrected characters is a patchwork of state and federal law, unpredictable and inefficient.⁹⁴⁹ Indeed, thinking about these problems may itself be much of the solution; as for evidence, voluntary codes of conduct may offset needs for legal action, for example—but only if they actually are developed and implemented. Media circles, in contrast, already have seen the potential pitfalls of image manipulation. “The software is so seductive,” said Craig Denton, associate professor of communications at the University of Utah.⁹⁵⁰ Examples abound of magazines altering photographs for “infotainment.” *Sports Illustrated*, in a feature on the Salt Lake Trappers’ 29-game winning streak in 1987, made the sun set in the *east* over the Wasatch Mountains.⁹⁵¹ The New York tabloid *Newsday* put Tonya Harding and Nancy Kerrigan on the same ice rink when no such incident occurred.⁹⁵² But although complete consensus is yet to emerge, many have realized that “[i]f everyone begins to doubt the veracity of images, either documentary or persuasive, then even advertisers in the long run

⁹⁴⁷*See id.*

⁹⁴⁸*See infra* text accompanying note 949.

⁹⁴⁹*See* Martin, *supra* note 694, at 133.

⁹⁵⁰Means, *supra* note 1, at B1.

⁹⁵¹*See id.* *See also supra* text accompanying note 265-266.

⁹⁵²*See* Means, *supra* note 1, at B1. *See also supra* text accompanying notes 264, 272.

lose.”⁹⁵³ A similar realization in the context of law would at least be a first step towards a solution, and head off a need for radical legal measures to counter the uncircumscribed use of digital technology—for celebrities, and in other contexts.

Conclusion

Historically, technological advancement has provided substantial challenges for the law, challenges to which, with the wisdom of hindsight, law often has not responded well. The protection of the First Amendment has been denied to many new mediums: Censorship is the “bastard child of technology.”⁹⁵⁴ “[F]ear of a new medium’s potential for evil has been a consistent rationale for either denying new media first amendment recognition or circumscribing their first amendment freedom.”⁹⁵⁵ For nearly fifty years, for example, as a matter of “common sense,” motion pictures were excluded from the First Amendment.⁹⁵⁶ The Supreme Court held in 1915 that the new medium of film posed as a special danger as a “a prurient interest may be excited and appealed to.”⁹⁵⁷ Not until the early 1950s was this decision reversed.⁹⁵⁸ Laurence Tribe has summarized the interaction between law and new mediums as revealing “a curious judicial blindness, as if the Constitution has to be reinvented with the birth of each new technology.”⁹⁵⁹

⁹⁵³See Means, *supra* note 1, at B1 (quoting Craig Denton). *But see* text accompanying notes 271-272.

⁹⁵⁴Corn-Revere, *supra* note 419, at 264.

⁹⁵⁵Lively, *supra* note 421, at 1072-73.

⁹⁵⁶See *Mutual Film Corp. v. Indust. Comm. of Ohio*, 236 U.S. 230, 244 (1915); *see also* *Mutual Film Co. v. Indust. Comm. of Ohio*, 236 U.S. 247 (1915); *Mutual Film Corp. of Missouri v. Hodges*, 236 U.S. 248 (1915).

⁹⁵⁷*Mutual Film Corp.*, 236 U.S. at 242. *See also* *RD-DR Corp. v. Smith*, 89 F. Supp. 596, 598 (N.D. Ga. 1950), *United Artist Corp. v. Board of Censors*, 225 S.W.2d 550, 551-52 (Tenn. 1949).

⁹⁵⁸See *Joseph Burstyn, Inc. v. Wilson*, 343 U.S. 495 (1952).

⁹⁵⁹Laurence H. Tribe, *The Constitution in Cyberspace*, HUMANIST, Sept./Oct. 1991, at 21. Tribe proposed an amendment to the Constitution that would state:

The manipulability of photographic images, now facilitated by computers, is not strictly a new medium, but the same pattern may be at work, particularly if current developments in regard to child pornography are to serve as a guide. The law of evidence is at a polar extreme—demonstrating a lack of concern about the consequences of the digital era—hardly a model to be emulated either. A solution presumably should lie somewhere in between them; the context of the control of images of past celebrities provides a proving ground. The potential of digital forgery should be acknowledged. It was not entirely without reason that new mediums have been feared as having improper or indecent tendencies and powers of persuasion that previous mediums had lacked.⁹⁶⁰ Digital forgery weakens the evidentiary value of photographs, and few deny that simulated child pornography is capable of some evil. But the Supreme Court for three decades has made clear that expression no longer may be regulated based on a remote harm or ill-defined evil.⁹⁶¹ “[A] big difference [exists] between the danger of an abuse and the abuse

This Constitution’s protections for the freedoms of speech, press, petition, and assembly, and its protections against unreasonable searches and seizures and the deprivation of life, liberty, or property without due process of law, shall be construed as fully applicable without regard to the technological method or medium through which information content is generated, stored, altered, transmitted, or controlled.

See id. at 39. But contrast the comments made by First Lady Hilary Clinton, when asked about the Internet:

Anytime an individual or an institution or an invention leaps so far out ahead of that balance and throws a system, whatever it might be—political, economic, technological—out of balance, you’ve got a problem, because then it can lead to the oppression people’s rights, it can lead to the manipulation of information, it can lead to all kinds of bad outcomes which we have seen historically. So we’re going to have to deal with that.

See Transcript of the First Lady’s Press Briefing on Millennium Project (Part 2 of 5), U.S. NEWSWIRE, Feb. 11, 1998, available in Westlaw, 1998 WL 5682960.

⁹⁶⁰*See* Lively, *supra* note 421, at 1075.

⁹⁶¹*See* *Brandenburg v. Ohio*, 395 U.S. 444, 447 (1969).

itself.”⁹⁶² If digital forgery is to be regulated, that regulation must be justified, and extend no farther. Such a solution may lack elegance—but elegance should not be preferred to justice, as well as to a welcome of a new means of discourse.

The next challenge for the law, as above, may be what regime emerges to respond to the power of digital technology to resurrect dead celebrities. There should not be a rush to judgment based on bogeymen: As Justice Breyer observed in a different but related context, “aware as we are of the changes taking place in the law, the technology, and the industrial structure . . . we believe it unwise and unnecessary definitively to pick one analogy or one specific set of word now.”⁹⁶³ But nor should courts as in the context of evidence do little in response to known hazards. The courts can adapt⁹⁶⁴—and it is important that they do so, rather than quickly settle on a maxim, whether or not it is the right maxim.⁹⁶⁵ The Court’s decision in *Reno v. ACLU*⁹⁶⁶ offers hope that, even as the pace of technological change accelerates, courts will be responsive. As Robert O’Neil of the Thomas Jefferson Center for the Protection of Free Expression observed, “[t]his is the first time the court has taken a new and unfamiliar medium and put aside its concerns to totally vindicate free speech rights.”⁹⁶⁷ But still, in the digital context, the score is so far 2-0 against a well-reasoned response to the potential of digital forgery.

⁹⁶²See *Omega Satellite Prods. Co. v. City of Indianapolis*, 694 F.2d 119, 128 (7th Cir. 1982).

⁹⁶³*Denver Area Educational Telecommunications Consortium, Inc. v. Federal Communications Commission*, 116 S.Ct. 2374, 2385 (1996).

⁹⁶⁴See Frederick Schauer, *Free Speech and the Demise of the Soapbox*, 84 COLUM. L. REV. 558, 572 (1984).

⁹⁶⁵See *Corn-Revere*, *supra* note 419, at 284-85. *Cf.* *Sony Corp. of America v. Universal City Studios*, 464 U.S. 417 (1984).

⁹⁶⁶117 S.Ct. 2329 (1997).

⁹⁶⁷Tony Mauro, *Scenes From a Historic Week*, LEGAL TIMES, June 30, 1997, at 8.

“We don’t know what all these changes are going to mean. But we’re going to find out sooner than any of us are really prepared to.”⁹⁶⁸

⁹⁶⁸Daviss, *supra* note 238, at 58 (*quoting* David Zeltzer).