

The Admissibility of Digital Photographs in Criminal Cases

By DAVID P. NAGOSKY

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Representing today's trend in photography, digital cameras continue to rapidly replace traditional film-based models. As prices keep dropping, consumer ownership will become even more prevalent. Similarly, law enforcement agencies have begun to favor digital cameras—just the latest in a long line of technological innovations used by departments to collect and document evidence. Digital photography offers law enforcement numerous benefits, including instant access to images, rapid transportability of pictures

within a department or to outside agencies, and decreased cost and time as these cameras require no film development.

Of course, photographs—which generally hold substantial weight—serve as one of the most effective forms of evidence in court. However, many individuals in the legal community fear the potential abuse and manipulation of digital images. Therefore, they consider these pictures inadmissible under current evidentiary rules.

To this end, an examination of the admissibility of film-based photographs and an

analysis of cases, legislation, and legal commentary pertaining to digital pictures can provide valuable insight. Further, agencies can follow recommendations as to how they can help ensure the admissibility of their digital photographs under the law as it develops in the United States.

FILM-BASED PHOTOGRAPHS

People can manipulate film-based pictures. Throughout the photographic process, an individual skilled in photography can alter the image.¹ For

instance, while taking a picture, a person can use a narrow f-stop and a fast shutter speed to make a photograph taken during the day appear as if someone took it at night.

Individuals also can alter a photograph during the development stage. “Through the judicious selection of exposure times for the paper emulsions and filters to screen selective color wavelengths, a skilled photographer can produce a different image from the one... viewed through the camera’s eyepiece. This image could appear to the untrained eye to be...perfectly legitimate...yet in subtle ways could be misleading in the jurisprudential context.”² Also, during development, a technique known as crop and splice can change the picture. Using this method, a person combines two negatives by cropping out a portion of one and splicing in its place part of another.³

Modifications of film-based photographs have presented problems for years.⁴ “The forensic ramifications...are obvious. A skilled photographer could artfully assemble through either pre- or postphotographic processing a photograph that could either be highly incriminating or exculpatory. Litigants could then offer that photograph as evidence in support of their cause. Under the Rules of Evidence, to authenticate a

photograph, a witness need only to say that the photograph accurately depicts the scene, object, or person. In this scenario, if a witness were willing to deceive the court with a manipulated photograph, discovery of such perjurious intent would be problematic.”⁵ However, someone suspecting manipulation of a picture always can ask for the negative to trace its origin.

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Any party seeking to introduce a film-based photograph into evidence must demonstrate its relevancy (i.e., add to the likelihood that an event did or did not occur) and authenticity (i.e., a knowledgeable person must verify the image’s accuracy).⁶ For example, a detective photographs a drug deal. The picture depicts two individuals exchanging a package. The prosecutor wants to enter the photo into evidence at the criminal trial of the individual who received the drugs. The picture is relevant because it

shows the person present at the scene where the deal occurred and in receipt of the package. To authenticate the photograph, the prosecutor can place on the stand the detective who took the picture or any officer who witnessed the transaction and elicit that the image actually represents the person, package, place, and time. After establishing the photograph’s relevancy and authenticity, the prosecutor can move to admit it into evidence.

One additional rule exists that pertains to the admissibility of all photographs. Under the Best Evidence Rule, to prove the content of a picture, courts generally require the original—defined as the negative or any print therefrom.⁷ Therein lies a major *perceived* problem with digital images: the absence of a traceable origin to rely upon (i.e., no negative).⁸

DIGITAL PHOTOGRAPHS

Digital photographs include pictures processed by computer. They consist of picture elements, or pixels—computer codes consisting of bits of information representing specific colors, intensities, and locations. More pixels result in a sharper and clearer image.

A digital camera works similarly to a film-based model. However, instead of using light-sensitive film, it employs a light-sensitive chip—a charged

coupled device (CCD). The CCD records the picture electronically as its light sensors capture, convert, and store the image as blue, green, and red pixels, which then become saved in the camera as a computer-readable data file. Using specialized software, a computer can reconstruct the image and display it on a monitor and route it to a printer.

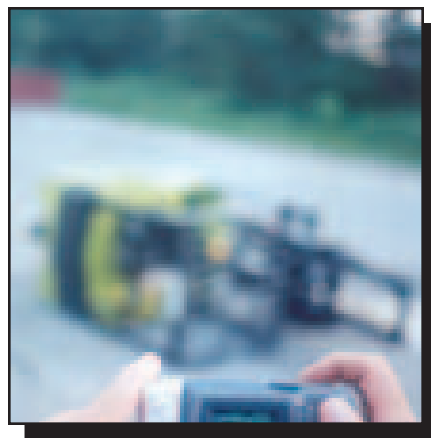
Concerning admissibility, people mainly fear that digital photographs can become altered more easily than film-based images “to fabricate evidence for improper purposes.”⁹ Some in the legal community feel that such dangers in digital photography overall necessitate different treatment under the Rules of Evidence.

Certainly, software used to create digital photographs allows alteration of the picture. “At worst, objects...not in the original image can be added and those that were there can be removed.”¹⁰ However, detection of a manipulated digital picture does not prove difficult. “Factors such as the density of the image (based on light exposure), the shadows in the picture, existence or nonexistence of splice lines, and continuity of the image” can be scrutinized.¹¹

Compression represents a secondary concern pertaining to digital photographs. While the amount of film limits the quantity of pictures taken with

a traditional model, “digital cameras allow users to choose the number of images they want to capture and store.”¹² The compression of data files allows digital camera users to save more pictures, resulting in lower-quality photos because when “the user wants to view the image, the decompression process ‘guesses’ what information was discarded to produce a complete image.”¹³

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ADMISSIBILITY OF DIGITAL IMAGES

Cases

Few cases directly address the admissibility of digital photographs in courts of law. In fact, the author found only one court in the U.S. federal and state systems that tackled the issue head-on. The many courts that have yet to address the subject largely must extrapolate from opinions pertaining to other issues concerning digital imaging.

The Georgia Supreme Court case of *Almond v. State* dealt directly with the admissibility of digital photographs.¹⁴ In that case, a jury found Mastro Almond guilty of malice murder and the sale of cocaine. On appeal, Almond raised the issue of digital images as evidence at his trial. The court stated that because the record showed “that the pictures were introduced only after the prosecution properly authenticated them as fair and truthful representations of what they purported to depict,” they were properly admissible.¹⁵ The Georgia Supreme Court did not provide any other guidelines for determining the admissibility of digital photographs. In fact, the court went on to say that “[w]e are aware of no authority, and appellant cites none, for the proposition that the procedure for admitting pictures should be any different when they were taken by a digital camera.”¹⁶

Although no other court has dealt directly with the admissibility of digital photographs, opinions exist that can offer insight as to where many will stand on the issue. For example, in *People v. Rodriguez*, the New York Supreme Court, Appellate Division, stated that the trial “court properly exercised its discretion in admitting bank surveillance videotapes, and photographs made from those tapes, without expert testimony

about the digitizing process used at the FBI laboratory to slow the tapes down and make still photos from them, since a bank employee responsible for making the original tapes at the bank testified that he compared the original and slowed-down tapes and that what was represented therein was identical except for speed.”¹⁷ The *People v. Rodriguez* holding indicates that the court seeks to ensure that an individual with first-hand knowledge of the photographed scene attests to the picture’s accuracy. Again, this demonstrates that for admissibility, photographs must be relevant and authenticated.

The Washington Court of Appeals case of *State v. Hayden* represents an additional example that provides insight into how another state may rule on the admissibility of digital photographs.¹⁸ The case mainly focused on the admissibility of digital imaging used to enhance latent fingerprints and palm prints. The court held that “[b]ecause there does not appear to be a significant dispute among qualified experts as to the validity of enhanced digital imaging performed by qualified experts using appropriate software, we conclude that the process is generally accepted in the relevant scientific community.”¹⁹

Although *State v. Hayden* dealt with the admissibility of

digital enhancement technology under the *Frye Test*—used to determine the admissibility of novel scientific evidence—the court made four important points that support the admissibility of digital photographs in general: 1) digital photography is not a novel process;²⁰ 2) the high cost may have contributed to the delay of digital image enhancement in forensic science;²¹ 3) the court opined that digital photographs have an advantage over analog film

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photographs because they “can capture approximately 16 million different colors and can differentiate between 256 shades of gray”;²² and 4) like film photographs, digital images work with light sensitivity, except that the “computer uses a chip and a hard drive in place of the camera’s film.”²³ Based upon the dicta provided, Washington courts seemingly would rule on the side of admissibility concerning digital photographs.

Recently, the Court of Appeals in California addressed

the use of digital imaging to enhance a shoe print in a criminal case.²⁴ In *People v. Perez*, the court of appeals accepted the trial court’s statement that a particular brand of software “is not a scientific technique” but represents “just an easier way of developing film, developing a picture. And it does it by means of digital imaging of pixels. Digital imaging...is accepted scientifically and has been for decades.”²⁵ After reading *People v. Perez* and in light of the previous cases mentioned, courts in California seemingly would consider digital photographs admissible.

Legislation

Alternatively, a legislator sponsored Wisconsin Assembly Bill 584, which “prohibits the introduction of a photograph... of a person, place, document... or event to prove the content... if that photograph...is created or stored by data in the form of numerical digits.”²⁶ The legislator apparently “became upset when high school students manipulated a digital photograph by putting heads on bodies of the opposite sex.”²⁷ If this bill becomes law, digital photographs will not be admissible in Wisconsin courts.

Legislators in Hawaii also have concern about the admissibility of digital photographs. However, rather than taking the extreme position of seeking a

ban in courts, the legislature directed the Hawaii Supreme Court to establish written procedures governing police use of digital photography in traffic accident reconstructions. The directions to the Hawaii Supreme Court are contained in Hawaii House Bill 1309, which states, “[a]lthough current rules do not preclude the admission of digital photographs as evidentiary material, such admissibility is contingent upon the basic data and collection technique meeting a threshold requirement of reliability that has not yet been established by the Hawaii Supreme Court’s Standing Committee on the Rules of Evidence.”²⁸

Legal Commentary

Many individuals in the legal community remain largely unreceptive to allowing the admission of digital photographs under the current rules of evidence. One author stated that “[a]lthough photographs may be manipulated, the potential for making subtle but significant alterations to digital images gives cause for concern that digital images may be unfit for use as evidence in a court of law”²⁹ and proposed amending the current evidentiary system specifically to deal with digital imaging.

In another article voicing concern over the admissibility of digital photographs under

current evidentiary systems, the authors stated, “As noted, current principles of authentication have developed partly in response to certain assumptions about the inherent limitations of traditional media technologies. The degree to which these assumptions are appropriate in the context of today’s highly sophisticated multimedia tools is an open question posing challenges for advocates, judges, experts, and legislative bodies alike.”³⁰ And, another



author noted that “[w]hile advances in technology are generally viewed as positive within society as a whole, the potential for incredible abuse associated with electronic photography is, or should be, troubling to the legal profession in particular.”³¹

A final author nicely summed up such concerns among those in the legal community by saying, “As the conventional photograph goes

the way of the horse-drawn carriage and the vinyl phonograph record, courts and legislatures will have to establish procedures to assure the accuracy and integrity of visual evidence admitted into legal proceedings. If existing doctrines cannot rise to the task, new doctrines will have to develop.”³²

As evidenced by these statements, not everyone in the legal community agrees with any court decision admitting digital photographs under the current Rules of Evidence. At its October 18, 2002, meeting in Seattle, Washington, the Advisory Committee on the Federal Rules of Evidence considered the concerns of commentators who argue that digital photographs should not be admitted under current evidentiary rules. The committee held a preliminary discussion on whether to amend Rule 901, the authentication requirement, or if a new rule proved necessary to deal with digital photographs. Ultimately, the committee members were skeptical of the necessity of a new rule and felt that Rule 901 “was flexible enough to allow the judge to exercise discretion to assure that digital photographs are authentic and have not been altered.”³³ However, the committee did direct its reporter to “prepare a background memorandum on the use of digital photographs as evidence” so that it could

consider changes to the rules in the future due to its “interest in assuring that the rules are updated when necessary to accommodate technological changes.”³⁴

As for the requirements of the Best Evidence Rule, a logical reading indicates that digital photographs are admissible under that rule. Generally, it requires the original to prove the content of a writing, recording, or photograph.³⁵ Under the Best Evidence Rule, “[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.’”³⁶ Therefore, a digital image downloaded to a computer and subsequently printed would seem to qualify.³⁷

RECOMMENDATIONS

At a minimum, agencies should establish standard operating procedures that focus on two goals that will ensure the admissibility of their digital photographs in court: 1) preserve the original and 2) follow a reliable process demonstrating the integrity of the image. Ideally, departments will concentrate on “chain of custody, image security, image enhancement, and release and availability of digital images.”³⁸

When attempting to preserve the original, unmanipulated image, agencies should

store it on a compact disc that can be written to only once and then is only readable (i.e., a CD-R, rather than a CD-RW). This ensures that no one can remove or alter the data without copying the original. After capturing an image, agencies should immediately transfer it to a CD-R and label the disc with the date, time, and place the picture was taken; the individual who captured the image; and other important information associated with the photo.

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Additionally, agencies should preserve the digital image in its original file format,³⁹ rather than compressing it for storage. This allows the camera to capture and store the most information possible. When departments must enhance a picture, they should create a new image file, saving it separately and not writing over the original.

When establishing reliable procedures that demonstrate the integrity of images from creation to admission into evidence, agencies must limit access to the files. As one commentator stated, “[i]mage handling procedures should be standardized and access to digital images should be strictly controlled.”⁴⁰ The process used “should be able to demonstrate: who took the picture and when, where and how the image was stored, who had access to the image from the time it was taken through the time it is introduced in court, and any details on whether or not the image has been altered and how.”⁴¹

In this regard, reliable procedures will help prevent challenges to admissibility by defense counsel. Also, they will allow agencies to track who had access to the photographs and what, if anything, was done with them. Of course, any reliable procedures must begin with preserving the original.

Also worthy of note, some law enforcement agencies use commercial photo labs for developing and processing film. Following such a procedure opens up possible challenges when departments seek to admit these pictures in court.⁴² In this regard, digital images prove superior to film-based photographs because no one outside the department handles them.

CONCLUSION

Digital photographs serve as powerful, efficient tools for law enforcement. The ability to take a picture and instantly view and distribute it helps officials in their efforts to serve and protect their communities. Agencies should not become hindered by those in the legal system reluctant to stay in step with advances in technology. As one commentator stated, "Fear about manipulation of digital images is exaggerated, perhaps because of the perceived novelty of the technology. We often fear what is or seems new.

Certainly, this fear has made many forget a secret of analogue photography [traditional film-based photographs], namely that conventional photographs may be manipulated to alter reality and at worst to fabricate false evidence."⁴³

The trend in case law points to the admissibility of digital photographs as evidence, although many in the legal community rightfully suggest that digital photographs are subject to abuses. To alleviate those fears, law enforcement agencies should attempt to establish standard operating procedures that, at least, include the preservation of and accountability for the original image from creation to admission into evidence. Like so much in law enforcement, the admissibility of digital photographs will

depend on the veracity and integrity of the authenticating official.

Ultimately, to help prevent the abuse of digital photographs, judges and attorneys on both sides of the courtroom must become aware of the potential abuses and familiar with the associated technology. As a result, the underlying fears will dissipate, and, in those rare cases where a dishonest person may falsely alter an image, the judicial system will recognize and effectively address the problem.

Endnotes

¹ Judge Victor E. Bianchini and Harvey Bass, Perspective, *A Paradigm for the Authentication of Photographic Evidence in the Digital Age*, 20 T. Jefferson L. Rev. 303, 306 (1998).

² *Id.* at 303, 308.

³ *Id.*

⁴ "Suggested Procedures for Preservation of Digital Crime Scene Photographs"; retrieved from <http://www.policecentral.com/wp-crimescene.htm>.

⁵ *Supra* note 1 at 303, 309.

⁶ See, e.g., Federal Rules of Evidence Rule 401, Rule 402, and Rule 901; see also M. L. Cross, Annotation, *Authentication or Verification of Photograph as Basis for Introduction in Evidence*, 9 A.L.R. 2d 899.

⁷ See, e.g., Federal Rules of Evidence Rule 1001 and Rule 1002.

⁸ *Supra* note 1 at 303, 311-312 ("However, modern technology has tossed another monkey wrench into the evidentiary gearbox. Traditional emulsive photography always had a traceable origin to rely upon. The courts or opposing counsel could always demand, 'Show me the negative.' However, it is now possible

to create a photograph digitally without a negative and no traceable parentage.").

⁹ Wesley M. Baden, "Digital Photographs as Evidence in Utah Courts"; retrieved from http://www.utahbarjournal.com/html/march_2004_2.html.

¹⁰ *Id.*

¹¹ Christina Shaw, "Admissibility of Digital Photographic Evidence: Should It Be Any Different Than Traditional Photography," *American Prosecutors Research Institute* 15, no. 10 (2002); retrieved from http://www.ndaa-apri.org/publications/newsletters/update_volume_15_number_10_2002.html.

¹² Jill Witkowski, *Can Juries Really Believe What They See? New Foundational Requirements for the Authentication of Digital Images*, 10 Wash. U. J.L. & Pol'y 267, 270 (2002); see also William W. Camp, *Practical Uses of Digital Photography in Litigation*, 2 Ann. 2000 ATLA-CLE 1463 (2000). ("Image quality in digital photography commonly refers to the amount of compression, if any, that is used to store the electronic digital image.")

¹³ *Supra* note 12 (Witkowski).

¹⁴ 274 Ga. 348, 553 S.E. 2d 803 (2001).

¹⁵ 274 Ga. 348, 349, 553 S.E. 2d 803, 805 (2001).

¹⁶ *Id.* (citing *Ray v. State*, 266 Ga. 896, 897(1), 471 S.E. 2d 887 (1996) (video-tapes admissible with the same limitations and on same grounds as photographs)).

¹⁷ 264 A.D. 2d 690, 691, 698 N.Y.S. 2d 1 (1st Dept., 1999).

¹⁸ 90 Wash. App. 100, 950 P.2d 1024 (Wash. Ct. App. 1998).

¹⁹ 90 Wash. App. 100, 109, 950 P.2d 1024, 1028 (Wash. Ct. App. 1998).

²⁰ 90 Wash. App. 100, 106, 950 P.2d 1024, 1027 (Wash. Ct. App. 1998).

²¹ *Id.*

²² 90 Wash. App. 100, 108, 950 P.2d 1024, 1028 (Wash. Ct. App. 1998), but see Michael Cherry, *Informal Opinion*, 27-JUL Champion 42 (July 2003) ("The Iowa International Association for Identification (IAI) Web site highlights *State v. Hayden*, 950 P.2d 1024 (Wash. App. 1998), where the Washington Court of Appeals noted experts' claims that digital photographs

are superior to regular film photographs because digital photographs can pick up and differentiate between many more colors and shades of gray than film photographs. Unfortunately this is not true, forensic quality film offers at least as many colors and more shades of gray than digital images.”).

²³ 90 Wash. App. 100, 108, 950 P.2d 1024, 1028 (Wash. Ct. App. 1998).

²⁴ 2003 WL 22683442 (Cal. Ct. App. 2003) (not an officially published opinion).

²⁵ *Id.* at 4.

²⁶ 2003 WI A.B. 584; and *supra* note 9.

²⁷ *Supra* note 9.

²⁸ Hawaii House Bill 1309; and *supra* note 9.

²⁹ *Supra* note 12 (Witkowski) at 267, 273.

³⁰ William Sloan Coats and Gabriel Ramsey, *Fair, Accurate, and True? Authenticating Evidence in the Age of Digital Manipulation*, 11 No. 1 Prac. Litigator 31, 32 (2000).

³¹ Christine A. Guilshan, *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, 373-374 (1992).

³² Roderick T. McCarvel, “You Won’t Believe Your Eyes: Digital Photography as Legal Evidence”; retrieved from <http://www.seanet.com/~rod/digiphot.html>.

³³ Advisory Committee on Evidence Rules, *Minutes of the Meeting of October 18, 2002*, 11; retrieved from <http://www.uscourts.gov/rules/Minutes/1002EVMIn.pdf>.

³⁴ *Id.*

³⁵ *See, e.g.*, Federal Rules of Evidence Rule 1002.

³⁶ *See, e.g.*, Federal Rules of Evidence Rule 1001(3).

³⁷ *Supra* note 12 (Camp) (“Arguably, a photograph taken by a digital camera of a particular event...is an ‘original’ photograph as defined by Federal Rules of Evidence 1001(3)...”); *but see* Roderick T.

McCarvel, “You Won’t Believe Your Eyes: Digital Photography as Legal Evidence,” retrieved from <http://www.seanet.com/~rod/digiphot.html> (“Worse yet is any incarnation of the best evidence rule, which follows the Federal Rules of Evidence in defining a printout as an ‘original’ for purposes of the rule.”).

³⁸ Steven B. Staggs, “The Admissibility of Digital Photographs in Court”; retrieved from <http://www.crime-scene-investigator.net/admissibilityofdigital.html>.

³⁹ *Id.*

⁴⁰ *Supra* note 11.

⁴¹ *Supra* note 11.

⁴² “Digital Camera Considerations for Crime Scene Investigations”; retrieved from <http://www.policecentral.com/wp-digicam.htm>.

⁴³ *Supra* note 9.

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