Seeing Can Be Deceiving: Photographic Evidence in a Visual Age - How Much Weight Does it Deserve?

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SEEING CAN BE DECEIVING: PHOTOGRAPHIC EVIDENCE IN A VISUAL AGE—HOW MUCH WEIGHT DOES IT DESERVE?

As the prevalence of visual media in modern society has expanded,¹ the use of photographic evidence in modern courts has increased.² Litigants have introduced photographs as evidence in the United States since the mid-nineteenth century.³ With the introduction of sixteen-millimeter motion pictures in the early 1920's, the advent of color photography in the early 1940's, and the appearance of videotapes in the late 1950's, the use of photographic evidence has accelerated.⁴ Impressed by advances in photography, courts generally favor photographic evidence,⁵ often according it substantial weight.⁶ Although photographic evidence is an asset to the adept trial lawyer,⁷ neither courts nor lawyers fully

1. Scholars have devoted considerable attention to the role of the visual media in modern society. See, e.g., Carpenter, The New Languages, in EXPLORATIONS IN COMMUNICATION (E. Carpenter & M. McLuhan ed. 1960); Novak, Television Shapes the Soul, in MASS MEDIA ISSUES (L. Sellars & W. Rivers ed. 1977). A few authors highlight the psychological impact of visual advertising techniques on society. See, e.g., W. Key, SUBLIMINAL SEDUCTION (1973); T. Schwartz, The Responsive Chord (1973). Susan Sontag thoughtfully discusses the manner in which photographs affect the modern perception of reality. See S. Sontag, ON PHOTOGRAPHY (1973).

Statistics also confirm the prevalence of the visual media. For instance, 98% of American homes contain at least one television set. THE WORLD ALMANAC & BOOK OF FACTS 1983, at 432. The average television viewing time for people over 18 years old is almost 30 hours per week. See id. at 431. In addition, the motion picture industry earned record profits in 1982, selling 1.165 billion tickets for $3.449 billion, a 16% increase from the $2.966 billion earned in 1981. Beaupre & Thompson, Eighth Annual Grosses Gloss, FILM COMMENT, Apr. 1983, at 62.

2. See infra notes 10-65 and accompanying text.


4. See C. Scott, supra note 3; 2 id. § 714.

5. See infra text accompanying notes 10-65.

6. See infra text accompanying notes 56-65.

7. Several commentators discuss the utility of photographic evidence within the broader context of demonstrative evidence. See, e.g., Dombroff, Utilizing Photographs as Demonstrative Evidence, TRIAL, Dec. 1982, at 71; McCullough & Underwood, How to Prepare and Use Demonstrative Evidence in a Civil Trial, PRAC. LAW., Mar. 1982, at 19, 29-34; Moore,
understand the capacity of photographic evidence for deception or improper influence.  

This Note examines the current evidentiary status of the major categories of photographic evidence—photographs, motion pictures, videotapes and X-rays. The Note first explains the general admissibility standard for photographic evidence and then analyzes each major category, focusing on problems of deception and unjustifiable reliance. The Note concludes that factfinders often give photographic evidence more weight than the evidentiary foundation justifies. Consequently, the Note proposes a test that emphasizes greater control on the weight that factfinders accord photographic evidence. By focusing on the reliability of photographic evidence as well as its pertinence, this test ensures that the reliance placed on photographic evidence reflects more accurately its evidentiary value.

**General Standard of Admissibility for Photographic Evidence**

Under the common law, a court may admit a photograph into evidence if the photograph is relevant to a material issue and is properly authenticated. This standard also applies to motion pictures, videotapes and X-rays. The relevance and authentication of photographic evidence are matters within the trial judge’s

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8. See infra notes 66-141 and accompanying text.

9. Pertinence depends on the relationship between the weight of photographic evidence and the purpose for which the evidence is admitted. For an application of this concept to the use of photographic evidence, see infra text accompanying note 217.


PHOTOGRAPHIC EVIDENCE

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The judge's discretion is not unlimited, but only an abuse of discretion will result in reversal. The common law standard of admissibility for photographic evidence remains intact under the Federal Rules of Evidence: rule 402 imposes a relevancy requirement, and rule 901 mandates authentication. Thus, photographic material must be relevant and properly authenticated under the Federal Rules of Evidence before a court will admit it into evidence.

Authenticating photographic evidence is not difficult. The proponent authenticates photographic evidence by showing that the evidence accurately represents its subject. Authentication typi-

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17. 2 C. Scott, supra note 3, § 1030 (Supp. 1980); see also United States v. Hobson, 519 F.2d 765 (9th Cir. 1975) (rule 401 incorporates the common law relevance standard), cert. denied, 423 U.S. 931 (1975).
18. "All 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. "'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.
19. "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).
21. Compare People v. Donaldson, 24 Ill. 2d 315, 181 N.E.2d 131 (1962) (inadequate authentication when witness could not remember taking the photograph, how long the person in the photograph had been in police custody, or whether the clothes worn by the person in the photograph were identical to those worn by the defendant at the time of arrest), with Skaggs v. Davis, -- Ind. App. --, 424 N.E.2d 137 (1981) (trial court properly admitted a photograph of plaintiff's car after the defendant in a personal injury action arising from a car accident testified that the photograph accurately represented the car on the day of the accident, despite the plaintiff's earlier contrary testimony), and State v. Deering, 291 N.W.2d 38 (Iowa 1980) (adequate authentication when eyewitness to robbery explained the activation of a hidden motion picture camera, the camera's location and field of view, and its accurate portrayal of the events).

If courts required strict authentication, they could not admit X-rays or hidden surveillance photographs or films because no witness could testify that the evidence accurately
cally is provided by the testimony of a witness familiar with the subject. A similar procedure is used to authenticate photographs of objects that are either undetectable to the naked eye or meaningless to the untrained eye. Experts, for example, must validate the accuracy of photographs of microscopic fibers or fingerprints. The witness who authenticates a photograph's accuracy need not have been the photographer. Indeed, the witness need not have been present when the photograph was taken. The court's focus is not on the photographer's skill or on the integrity of the development process, but rather on the witness' impression that the photograph accurately represents its subject.

depicted its subject. Consequently, courts have modified the general standard, admitting both X-rays and unwitnessed photographic evidence if the proponent offers an alternate foundation to authenticate the evidence, such as showing the camera's reliability and operation. See infra notes 45-55 and accompanying text.

22. See, e.g., Dillon v. State, --- Ind. ---, 422 N.E.2d 1188 (1981) (photographs depicting a rape victim's facial bruises admitted after the victim's husband testified that the photographs accurately represented the victim's appearance); Moore v. Leaseway Transp. Corp., 49 N.Y.2d 720, 402 N.E.2d 1160, 426 N.Y.S.2d 259 (1980) (photograph of tractor trailer identical to one demolished in an accident admitted following testimony that the photograph accurately represented the tractor trailer in the accident). If the witness is equivocal about the accuracy of a photograph, however, the court will exclude the photograph. See, e.g., Hayes v. State, 634 S.W.2d 359 (Tex. Crim. App. 1982) (witness could not state with certainty that photograph accurately depicted intersection in question).

23. Driskell v. State, 659 P.2d 343 (Okla. Crim. App. 1983) (enlarged photographs of red cotton fibers taken with special photographic equipment attached to a microscope admitted after a forensic scientist testified that the photographs accurately represented the fibers under the microscope).


One qualification of the general authentication standard concerns subjects photographed under altered conditions. If the subject of photographic evidence changed materially before the photographer recorded it, a court will exclude the evidence because no witness could testify that the photograph accurately represents its subject at the relevant time. Typically, however, courts will admit photographic evidence that depicts changed conditions when the jury can understand the changes in appearance that occurred between the relevant time and the time the photograph was taken.

Courts admit photographic evidence under two distinct theories—the pictorial testimony theory and the silent witness theory. The pictorial testimony theory treats photographic evidence as a graphic illustration of a witness' testimony. A medical examiner's

28. See, e.g., Dugan v. Dieber, 32 A.D.2d 815, 302 N.Y.S.2d 423 (1969) (photograph depicting parking conditions improperly admitted because apartment buildings in photograph had replaced private dwellings present at the time of the accident). Photographic inaccuracies usually result from differences in external conditions at the time the photograph is taken. See People v. Vaiza, 244 Cal. App. 2d 121, 52 Cal. Rptr. 733 (1966) (photograph of crime scene taken at 7:30 p.m. improperly admitted because the crime occurred at 2:00 a.m. under different lighting conditions); People v. Schwing, 133 Ill. App. 2d 100, 272 N.E.2d 779 (1971) (October photograph of the sun's reflection in a window properly excluded because the material issue was whether the witness could have seen into the room in July, when the sun's location would have caused a different reflection); Syrowik v. City of Detroit, 119 Mich. App. 343, 326 N.W.2d 507 (1982) (photographs of a hill where a minor fractured her hip tobogganing properly excluded because they were taken during the summer).

Courts will not exclude photographic evidence, however, if the changed conditions are immaterial to the case. See, e.g., Spilotro v. Hugi, 93 Ill. App. 3d 837, 417 N.E.2d 1066 (1981) (trial court improperly excluded photograph of a sick horse on the basis of a veterinarian's testimony that he could not recognize the horse from the photograph). The appellate court in Spilotro reasoned that the photograph was admissible because "it was not offered as substantive evidence of the condition of the horse but merely as a model in order to permit [the veterinarian] to more fully explain his observations of the animal during his last examination of it." Id. at 842, 417 N.E.2d at 1070. See also Levenson v. Lake-to-Lake Dairy Coop., 76 Ill. App. 3d 526, 394 N.E.2d 1359 (1979) (photograph of building, taken 30 to 45 minutes after an airplane crashed into it, admitted to establish weather conditions at the time that the photograph was taken, not at the time of the crash); Taylor v. St. Louis-S.F. Ry., 590 S.W.2d 424 (Mo. Ct. App. 1979) (photographs showing a train approaching an intersection not offered to show the motorist's view, but to show the general visibility of the train's approach to the crossing where the accident occurred).

29. See, e.g., Saldana v. Wirtz Cartage Co., 74 Ill. 2d 379, 385 N.E.2d 664 (1978) (jury cautioned that a motion picture depicting a construction truck in operation was a general demonstration, not a reenactment of the accident); Twain v. Olson, 104 Ill. App. 3d 191, 432 N.E.2d 1244 (1982) (photograph of a wrecked car taken after removal of its engine properly admitted because counsel explained the removal to the jury).

photographic exhibit depicting the wounds about which he is testifying best illustrates this approach. Photographic displays allow an examiner to illustrate wounds that are difficult to conceptualize, such as numerous stab wounds,\textsuperscript{31} multiple bruises,\textsuperscript{32} or extensive damage resulting from a gunshot wound.\textsuperscript{33} The pictorial testimony theory does not limit photographic evidence to the conceptually obscure wound,\textsuperscript{34} although the need for photographic evidence is diminished when a medical examiner can describe the wound adequately without visual aids.\textsuperscript{35} Attorneys also frequently use photographic evidence to illustrate a witness' testimony about conditions at the scene of an accident or crime. For example, photographic evidence can illustrate a motorist's visual range at a railroad crossing,\textsuperscript{36} the victim's position at a murder scene,\textsuperscript{37} or the location of inanimate objects at a crime scene.\textsuperscript{38}

Unlike the pictorial testimony theory, the silent witness theory does not require witness authentication because the photographic evidence is treated as self-authenticating.\textsuperscript{39} The photograph consti-

tested that robbers shot at a murder victim, court admitted a photograph of the victim with his trouser pocket out because the photograph illustrated the justified inference that the robbers took the victim's pistol during the incident); Houser v. Persinger, 57 Tenn. App. 401, 419 S.W.2d 179 (1967) (in a wrongful death action, the court admitted a photograph showing the defendant's automobile in the position that the defendant claimed it was at the time of the accident). See generally 3 J. Wigmore, Evidence § 790 (Chadbourn rev. ed. 1970).

35. See People v. Jackson, 119 Mich. App. 138, 326 N.W.2d 392 (1982) (Maher, J., dissenting) (testimony of complainant and another witness that established an aggravated assault obviated the need for photographs depicting the victim five days after the assault). But see Jones v. State, 249 Ga. 605, 608, 293 S.E.2d 708, 711 (1982) ("We decline to adopt a rule which would allow the admission of photographs only when they prove facts which cannot be proved by testimony.").
39. "Even if direct testimony as to foundation matters is absent, however, the contents of a photograph itself, together with such other circumstantial or indirect evidence as bears upon the issue, may serve to explain and authenticate a photograph sufficiently to justify its
tutes substantive evidence of a material issue independent of any testimony. In practical terms, such photographic evidence assumes greater significance than photographic evidence authenticated by testimony. Instead of supplementing testimony on an issue, the photographic evidence forms an independent basis upon which the proponent may establish a fact or occurrence. Without the silent witness rationale, courts would have to exclude photographic evidence absent testimony authenticating the evidence. The theory thus enables prosecutors to initiate proceedings when photographic exhibits represent the state’s primary substantive evidence. Consistent with their reluctance to limit the use of photographic evidence, courts increasingly have admitted photographic evidence under the silent witness theory when no witness can authenticate the evidence.

admission into evidence.” United States v. Stearns, 550 F.2d 1167, 1171 (9th Cir. 1977).


41. There is no reason why a photograph or film, like an X-ray, may not, in a proper case, be probative in itself. To hold otherwise would illogically limit the use of a device whose memory is without question more accurate and reliable than that of a human witness. It would exclude from evidence the chance picture of a crowd which on close examination shows the commission of a crime that was not seen by the photographer at the time. It would exclude from evidence pictures taken with a telescopic lens. It would exclude from evidence pictures taken by a camera set to go off when a building’s door is opened at night. People v. Bowley, 59 Cal. 2d 855, 861, 382 P.2d 591, 595, 31 Cal. Rptr. 471, 475 (1963). See also Fisher v. State, 7 Ark. App. 1, 4-5, 643 S.W.2d 571, 571-74 (1982) (unwitnessed surveillance videotapes of a robbery admitted under the silent witness theory because they “obviously” were not admissible under the pictorial testimony theory, as “no person could verify that the videotape accurately represented what occurred at the store, based on personal observation”); Murry v. State, 179 Ind. App. 305, 308, 385 N.E.2d 469, 472 (1979) (automatic surveillance photographs of robbery inadmissible because the prosecution failed “to establish that the photographs were true and accurate representations of . . . the thing which they intended to portray”; the prosecution could have authenticated the photographic evidence through an alternate foundation based on camera operation and the development process); State v. Kistle, 59 N.C. App. 724, 726, 297 S.E.2d 626, 627 (1982) (“Since the photographs were introduced as evidence of the crime itself, and not as illustrative evidence, there was no need to have a witness testify that they fairly and accurately represented the scene described by testimony.”), petition denied, 307 N.C. 471, 298 S.E.2d 694 (1983).

42. See supra note 40.

43. For thorough discussions of this trend, see Fisher v. State, 7 Ark. App. 1, 643 S.W.2d
The use of photographic evidence from automatic surveillance cameras is an example of this trend.\textsuperscript{44} When a witness observes a crime while a surveillance camera records the event, the witness authenticates the photographic evidence by testifying that it accurately depicts the events of the crime.\textsuperscript{46} One of the essential functions of surveillance cameras, however, is to record unwitnessed events.\textsuperscript{48} In \textit{United States v. Taylor},\textsuperscript{47} for example, the surveillance camera had begun to film a robbery after robbers had locked the bank personnel inside a vault. The United States Court of Appeals for the Fifth Circuit held that the motion picture was admissible despite the absence of authentication by eyewitness testimony. The court reasoned that the government had established an alternate foundation for admission, including testimony about the camera's installation and the film's chain of custody and development.\textsuperscript{48}

The Regiscope photographs that many stores use to match customers' checks with their physical identities raise similar authenti-
cution problems.\textsuperscript{49} Because the cashier rarely remembers taking a particular customer's photograph, the proponent of the Regiscope photograph must offer an alternate foundation for its admission. Again, testimony regarding the reliability of the camera and the photographic process generally suffices.\textsuperscript{50}

If unwitnessed photographic evidence is the product of an ordinary camera rather than sophisticated surveillance or Regiscope equipment, courts should require a more stringent foundation because the photographic process is less reliable.\textsuperscript{51} Courts admit this evidence, however, by allowing proponents to authenticate the photographs through alternate foundations similar to those used to authenticate automatic surveillance photographs.\textsuperscript{52} Nowhere is this accommodation more apparent than with photographic evidence used in the prosecution of various sexual offenders. These photographs typically are given to authorities by third parties\textsuperscript{53} or are seized during lawful searches.\textsuperscript{54} Consequently, the time, place, and manner in which the photographs were made is often unclear. Nevertheless, courts tend to admit these photographs despite their weak evidentiary value if the proponent offers an alternate means

\textsuperscript{49} The Regiscope photograph is taken with a camera that has two lenses: one lens transmits an image of the person cashing the check; the other lens transmits an image of the check and the customer's identification. A single lever activates the camera, which makes two pictures on the same negative. Sisk v. State, 236 Md. 589, 594, 204 A.2d 684, 686 (1964).


\textsuperscript{51} For the defects associated with the ordinary camera, see \textit{infra} notes 96-97 and accompanying text.

\textsuperscript{52} See, e.g., United States v. Stearns, 550 F.2d 1167 (9th Cir. 1977) (photographs authenticated under rule 901 of the Federal Rules of Evidence by testimony that the defendant ordered and paid for the photographs and that, until seized, they were in possession of persons in privity with the defendant; time and location of the photographs inferred from their contents); State v. Holderness, 283 N.W.2d 226 (Iowa 1980) (photograph taken by Instamatic camera showing a person holding a stolen briefcase in which the camera had been left was admitted on owner's testimony that the background in the photograph accurately depicted his garage and boat, that he had a continued course of dealing with his film developer, that the camera produced reliable photographs, and that the prints accurately reproduced their negatives).


The increasing tendency among courts to apply liberal authentication standards to photographic evidence shows growing judicial reliance on the accuracy of photographic evidence. The conclusive weight that courts sometimes accord this evidence emphasizes the point. Courts have held that photographic evidence can demonstrate physical facts so conclusively that it precludes consideration of contrary testimony. These courts have found support for their reasoning under the physical-fact rule, which impeaches evidence that contradicts established scientific principles. A court should not confuse a fact's photographic representation with the fact itself, however, in deciding that photographic evidence establishes the fact conclusively under the physical-fact rule.

The pictorial testimony theory also indicates that courts readily accept the accuracy of photographic evidence. The authentication standard under this theory allows courts to presume that a witness remembers the details of a subject or scene well enough to verify a photograph's accuracy. In truth, however, most witnesses have


57. See 2 J. WIGMORE, supra note 30, § 662 (Chadbourn rev. ed. 1979).

58. Courts also cannot apply the physical-fact rule when the photographic evidence does not support a conclusive determination. See, e.g., Sprick v. North Shore Hosp., 121 So. 2d 682 (Fla. Dist. Ct. App. 1960) (photograph of the view from a nurse's chair in a hospital nursery was not conclusive of her ability to see a crib in the back row of cribs where a baby allegedly was left unattended), cert. denied, 123 So. 2d 675 (Fla. 1960); Grove v. Taulbee, 350 S.W.2d 620 (Ky. Ct. App. 1961) (photographs depicting location of a pickup truck and a coal truck after they collided did not conclusively establish the position of each on impact); Fallon v. Penn Cent. Transp. Co., 444 Pa. 148, 279 A.2d 164 (1971) (photographs of a motorist's view of an approaching train inconclusive).

59. See supra notes 30-38 and accompanying text.

60. See id.
imperfect memories. Nonetheless, by liberally admitting photographic evidence, courts implicitly have accorded substantial faith to the reliability of the photographic process.

Most jurisdictions allow the jury to determine the weight that a photographic exhibit deserves. Courts often have held that uncertainty over photographic evidence is relevant to the weight of the evidence, rather than its admissibility. Moreover, many jurisdictions prohibit judges from instructing juries on the weight of evidence. Given the jury's duty to resolve matters of evidentiary weight, and the increasing use of photographic evidence, the reliability of photographic evidence is decisively important.

CATEGORIES AND PROBLEMS OF PHOTOGRAPHIC EVIDENCE

Photographs

Despite their increasing reliance on photographic evidence, courts fail to recognize the special problems associated with its use. Because factfinders should rely on photographic evidence only to the extent justified by its evidentiary value, they must consider the various factors that diminish its evidentiary value. A photograph's evidentiary value may be diminished in two ways. First, the photographer can distort a photograph and mislead the factfinder with a deceptive representation of the photograph's subject. Second, the photograph can influence the factfinder improperly, regardless of the technical accuracy of its representation. Improper influence diminishes the evidentiary value of photographs by evoking emo-

61. But see State v. Pulphus, ___ R.I. ___, 465 A.2d 153, 161 (1983) ("We have always allowed witnesses with less than perfect eyesight to testify to what they recalled seeing, even after the eroding effect of the passage of time has advanced the process of forgetting.").
62. 2 C. Scott, supra note 3, § 1026.
65. See K. REDDEN & S. SALTBURG, FEDERAL RULES OF EVIDENCE MANUAL 27-28 (1975); see also 3 C. Scott, supra note 3, § 1582.
tional responses instead of rational ones, and causes the factfinder to give the photographic evidence more weight than it deserves.

Photographic Deception

Photographic deception receives less attention than it deserves. Contrary to popular belief, photography remains an inexact science; photographs can and do lie. A photograph can distort a subject through the interplay of many variables. Lens type, camera position or perspective, lighting, film type and speed, lens filters, camera quality, length of exposure, and the development process can create distortion. For several reasons, the greatest potential for distortion arises from the first two variables—lens type and camera position or perspective.

Both variables present practical problems. The possibility of deception through lens variation and camera position arises whenever a photographer takes a photograph. Neither possibility depends on conscious deception. Because those who view a photograph usually are unfamiliar with the subject’s details, they also cannot perceive misleading results produced by lens variation and camera position.

Lens variations can produce strikingly different results even if the photographer takes the photographs from the same position.

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66. Photographs have received a public acceptation for extreme accuracy and verity which is excessive under the facts. It is demonstrably true that pictures may be made to lie. And [it is also true] that many types of entirely unplanned misrepresentations are the natural product of the nature of the photographic process, which makes inaccuracies inevitable. It does not detract from the extreme usefulness of photographic evidence to discount such statements as “pictures don’t lie,” nor to disown as question-begging inanity “a picture is worth ten-thousand words.”
68. See infra text accompanying notes 72-86.
69. See id.
70. Variations in lenses and camera position can be inadvertent. Other variables, such as changes in lighting, can create deceptive images that are even less likely to result from conscious deception. Indeed, photographic deception probably is due more to ignorance of the variables that affect photographic quality than to conscious manipulation of the photographic process. See Heilpern & Schatz, Responsibilities of the Legal Profession to the Forensic Sciences: Responsibilities of the Courtroom Photographer, 6 J. Forensic Sci. 207, 207-08 (1961).
71. See infra text accompanying notes 77-78.
This phenomenon occurs because every lens has a specific focal length. The focal length is the distance between the surface of the film and the point near the lens at which the incoming light rays converge to form an image. Lenses with long focal lengths tend to shorten lines, narrow the width of an area, and make objects appear closer. These lenses are called telephoto or long focus lenses. Conversely, lenses with short focal lengths tend to elongate lines, broaden the width of an area, and make objects appear farther away. Photographers refer to these lenses as wide-angle or short focus lenses.

The danger of distortion due to lens variation is present in photographs of any subject. The danger is most significant, however, with photographs of places and objects. A photographic expert can detect distortion in photographs taken through telephoto or wide-angle lenses, but the average person cannot. A layman may detect the distortion if the subject of the photograph is a human figure because people know how a human figure should look. The average person unfamiliar with an object or place that is the subject of a photograph, however, has no preconceived idea of the subject’s appearance. As diverse as the appearance of human beings may be, the appearance of places and objects is infinitely more variable. The likelihood of undetected photographic distortion, therefore, is much higher.

Photographs in railroad crossing cases exemplify the potential for deceptive representation of a place. Topography, foliage, and the angle of the intersection all add to the distinctive appearance of any crossing. When the automobile driver’s field of view is disputed, the jurors resolve the issue on the basis of photographs of a
scene that they probably have not observed and for which they have no standard of reference. The possibilities for distortion, therefore, abound. Suppose, for example, that the outcome of a case depended on whether a motorist was contributorily negligent in failing to heed a warning sign at a railroad crossing, and the location of the sign was disputed. A photograph taken with a telephoto lens from a distant viewpoint would make the sign appear much closer to the crossing than it actually was. A photograph taken with a wide-angle lens from a close viewpoint would have the opposite effect, suggesting that the sign was much farther from the crossing than it actually was. In either case, the lens type would combine with the camera position to distort the distance between the sign and the crossing, which could affect the jury's determination of the motorist's contributory negligence.

Camera position presents a further threat to photographic accuracy because it can cause distortion even if the lens does not distort the photograph. As with lens variation, variation in camera position affects the perspective of a photograph. Suppose the issue of the motorist's contributory negligence in the previous example depended on his ability to see a train approaching the crossing. Assume also that trees and brush are situated to the south of the crossing, the direction from which the train approached. A photograph taken from just above ground level would depict an obscured view; a photograph taken several feet higher, however, would show much better visibility.

80. This effect occurs because telephoto lenses have long focal lengths. See supra note 73 and accompanying text.
81. This effect occurs because wide-angle lenses have short focal lengths. See supra note 75 and accompanying text.
82. See C. Scott, supra note 3, § 80. An early case noted the potential for this type of deception: "It is a matter of almost common knowledge that photographs may be taken from different angles so as to exaggerate certain distances, or, on the other hand, to make space more compact. . . ." Puleo v. Stanislaw Holding Corp., 126 Misc. 372, 372, 213 N.Y.S. 601, 602 (1926).
83. Perspective is the depiction of objects on a plane surface in such a manner that the impression approximates the relative positions of the objects as they would appear to a person at a given point. C. Scott, supra note 3, § 80.
84. See Silvey v. Missouri Pac. R.R., 445 S.W.2d 354 (Mo. 1969) (both plaintiff trucker's photographs and defendant railroad's photographs excluded because the trucker's photographs showed considerable obstruction by trees, and photographs taken by the railroad company showed a less obscured view, but appeared as though the camera was positioned
pective would have to be taken from the position of the motorist's eyes as he approached the crossing.\textsuperscript{85} Any photographic evidence offered to prove visibility should be from such a position.\textsuperscript{86}

Other variables that affect a photograph's accuracy are nevertheless noteworthy. Lighting, for example, can make a subject appear either lighter or darker than it was at the time in issue. Courts generally recognize this possibility and exclude misleading photographs unless the changed lighting conditions are obvious or irrelevant.\textsuperscript{87} Courts do exclude photographs taken under different lighting conditions if offered to prove visibility.\textsuperscript{88} Because photographs taken under different lighting conditions are not misleading when offered to show the general conditions of a scene, however, courts generally admit them if the jury is aware of the altered lighting conditions.\textsuperscript{89}

Subtle changes in the lighting of scenes can produce significant differences in certain types of photographs, such as photographs of above some trees and brush that obscured the plaintiff's photos).\textsuperscript{85} See, e.g., Zumault v. Wabash Ry., 302 S.W.2d 861 (Mo. 1957).  
87. See Avery v. Scott, 216 So. 2d 111, 113 (La. Ct. App. 1968) (photographs and motion pictures taken at approximately the same time of year as the accident and offered to show the lighting at the time of the accident properly excluded because of "the susceptibility of error or manipulation in the photographic process to either increase or decrease the darkness of the photo negative and thus produce a misleading picture"), cert. denied, 253 La. 313, 217 So. 2d 410 (1969); see also Sparks v. State, 242 So. 2d 403 (Ala. Crim. App. 1970) (night photograph of robbery scene offered to show lighting conditions at the time of the nighttime robbery excluded), cert. denied, 286 Ala. 738, 242 So. 2d 408, cert. denied, 402 U.S. 909 (1971); State v. McNew, 353 S.W.2d 571 (Mo. 1962) (night photograph properly excluded because offered to show that a witness was unable to see the nighttime attack); Fox v. City of Kansas City, 343 S.W.2d 200, 202 (Mo. Ct. App. 1960) ("It is recognized by science and legal authority that when a casualty occurs at night it is doubtful that lighting conditions can be reproduced photographically as they appeared to the participant.").
88. See supra note 87.
89. See, e.g., Morales v. Toye Bros. Yellow Cab Co., 246 So. 2d 52 (La. Ct. App. 1971) (photograph of scene where a taxicab hit a pedestrian at night admissible although taken during the day because the policeman who took the photograph testified that he intended to show the general surroundings and not to portray actual lighting conditions), cert. denied, 258 La. 772, 247 So. 2d 867 (1972); State v. McNew, 353 S.W.2d 571 (Mo. 1962) (photograph of nighttime manslaughter scene taken during the day admissible because jury was aware of when the photograph was taken); State v. Hackney, 261 N.W.2d 419 (S.D. 1978) (photograph of motorcycle accident scene taken the morning after a 7:30 p.m. accident admissible to show the conditions of the scene because the deputy who took the photograph explained changes in the scene, including altered lighting conditions).
holes and depressions. Courts should recognize, therefore, that changes in lighting can affect an object's apparent dimensions or depth. Insufficient lighting minimizes the dimension of an object or the depth of a hole, for example, whereas enhanced lighting emphasizes both dimension and depth.

Variations in film and lens filters present fewer possibilities for distortion. These variations can be used to accentuate or to minimize contrasts, making wounds appear deeper or shallower than they actually are. Because only black-and-white photographs are subject to this type of distortion, the increasing use of color photography has reduced the potential for distortion. Color photographs are less subject to distortion by filters and generally portray their subjects more accurately than comparable black-and-white photographs.

Similarly, because photographers can purchase reliable cameras at economical prices, problems caused by camera quality have de-

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90. See C. Scott, supra note 3, § 204.
91. Id.
92. See id., §§ 91, 574.
93. Color photographs are not subject to contrast exaggeration or minimization because contrast filters, which cause this distortion, cannot be used with color film without obviously distorting the results. 2 C. Scott, supra note 3, § 752.
94. Contrary to general understanding color is the one attribute of most ordinary subjects that can be nearly reproduced rather than merely represented photographically. Whether in black-and-white or in color, a photograph can only suggest the forms and shapes of solid objects, their relative sizes, and the distances between them, but if it is taken on the right type of color film and is properly exposed and correctly developed, a picture can so nearly reproduce the colors of the subject that it appears natural. Therefore, good color pictures are suitable for almost every evidential purpose except those requiring the exact matching of colors. . . .

. . . It is true that a color photograph cannot reproduce colors exactly but it can come so close to doing so that it can safely be said that of all the attributes of a solid object that can be represented photographically, color is the only attribute that can be almost correct. Therefore a good color photograph is superior to a black-and-white picture for almost every evidential subject except those in which color is not important or not involved.

3 C. Scott, supra note 3, § 1353.

Courts also recognize the superiority of color photographs. See, e.g., Wilkins v. State, 155 So. 2d 129, 131 (Fla. 1963); Sotelo v. State, 264 Ind. 298, 307, 342 N.E.2d 844, 850 (1976); State v. Hayward, 114 N.H. 792, 794, 330 A.2d 445, 446 (1974). A legitimate objection arises, however, when a photograph's color rendition arguably is erroneous and prejudicial. See infra notes 130-31 and accompanying text.
creased. Although the reliability of any camera varies with the particular photographic situation, only inexpensive box cameras are inherently deceptive. The drawback of box cameras lies primarily in their unsophisticated lenses, which are subject to every identifiable lens defect. Nevertheless, many courts admit snapshots taken with inferior cameras. Judicial unwillingness to restrict the use of photographic evidence probably explains this tendency.

Improper exposure is another insignificant source of distortion. Improper exposure may produce a misleading photograph if matters of detail, tone, or contrast are important. Overexposed and underexposed photographs are conspicuous, however, and courts generally exclude them as misleading or admit them subject to the jury’s discretion regarding weight.

Reversing the photographic negative during the development process presents a subtle danger of deception. Reversing the negative reverses the right and left sides of a photograph, and produces

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95. Traditionally, the more reliable cameras were bulky and expensive. Perhaps the most reliable camera for evidentiary purposes, the view camera is unwieldy because it is designed for use on a tripod. C. Scorr, supra note 3, § 124. Similarly, the technical camera, which combines the precision of the view camera with the compactness of smaller cameras, is too expensive for general use. Id. § 125. The advent of smaller cameras that are generally reliable, particularly 35-millimeter cameras, has diminished problems of bulk and expense. Id. § 128. The superiority of 35-millimeter cameras in color photography makes them an even greater asset to the forensic photographer. Id. Instamatic cameras also are convenient and economical, but their reliability varies greatly. Id. §§ 129, 130.

96. A box camera is “[a] relatively simple camera of box shape usually equipped with a mediocre lens but often provided with automatic photo-electric exposure control for daylight and synchronization for flashbulbs.” 3 id. at 442.

97. 1 id. § 75. The principal lens defects include spherical aberration, coma, astigmatism, curvature of field, distortion, chromatic aberration, and chromatic difference of magnification. Id. § 74.


99. See supra text accompanying notes 56-62.

100. Exposure depends on the amount of light that strikes the film thereby producing the negative. Too little light produces an underexposed negative; too much light produces an overexposed negative. C. Scorr, supra note 3, § 94.

101. Underexposed photographs will cause a loss of detail, shadowy tones, and dull contrasts; overexposed photographs also will cause a loss of detail and dull contrasts, but tones are typically pale. Id. §§ 95-96.


a clear but deceptive print.\textsuperscript{104} Deception by reversing the negative occurs infrequently and is probably inadvertent. If it occurs, however, the photograph should be excluded.\textsuperscript{105}

Retouching\textsuperscript{106} constitutes the final form of photographic distortion. Retouching is potentially the most blatant form of deception, but is also the most infrequent.\textsuperscript{107} Judicial decisions reveal few instances of such intentional distortion.\textsuperscript{108} Indeed, courts appear to have adopted tacitly the presumption that photographs have not been retouched.\textsuperscript{109} If a photograph has been retouched before a lawsuit is filed, the retouching is not considered an intentional distortion, and courts will admit the photograph if the proponent lays a foundation showing that the photograph accurately represents its subject.\textsuperscript{110}

In addition to technical qualities affecting the accuracy of photographic evidence, viewers also make perception errors. A catalogue of optical illusions is unnecessary to establish that one image may convey different ideas to different people.\textsuperscript{111} Perceptual error results not so much from defects in the human optical system as from the process through which the mind interprets visual stimuli.\textsuperscript{112} The mind interprets stimuli according to past experiences\textsuperscript{113}

\begin{footnotes}
\item[104] C. Scott, supra note 3, §1051; see also 1 id. § 291.
\item[106] Retouching is “the alteration of the photographic image, negative or positive, by means of handwork usually done with a pencil, pen, brush, airbrush or etching knife.” 2 C. Scott, supra note 3, § 1050.
\item[107] See id.
\item[108] See id.
\item[109] Such a presumption follows from the rule that a photograph need be authenticated only by a witness who is familiar with the subject rather than by the photographer or developer who prepared the photograph. See supra notes 21-27 and accompanying text; see also State v. Kennedy, 135 N.J. Super. 513, 343 A.2d 783 (1975) (counsel need not call the photographer if another witness testifies that the photograph is accurate).
\item[111] See J. MARSHALL, LAW AND PSYCHOLOGY IN CONFLICT, 9-25 (2d ed. 1980).
\item[112] Id. at 10-12; see also Gregory, Visual Illusions, Sci. Am., Nov. 1968, at 66 (analyzing various optical illusions as manifestations of the human information-processing mechanism). \item[113] For example, when researchers place a person in a room with no standard of reference and show the person a playing card twice the size of a standard one, the person will assume that the playing card is twice as close as it actually is, rather than assume that the playing card is twice as large. See Kilpatrick & Cantril, The Constancies in Social Percep-
\end{footnotes}
and prejudices, both of which are unique to the individual. Because of this subjective perception process, jurors can misinterpret the contents of an undistorted photograph.

**Improper Influence**

If a photograph improperly influences the viewer, the influence impairs the photograph's evidentiary value although the photograph may be technically accurate. This problem normally arises when the proponent offers into evidence gruesome photographs of corpses or injured persons. The problem of determining the...
weight that the factfinder should give to this photographic evidence implicitly centers on the admissibility decision.

Rule 403 of the Federal Rules of Evidence,\textsuperscript{117} which codifies the common law rule,\textsuperscript{118} provides that relevant evidence "may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice." After balancing probative value against possible prejudice, however, courts that admit photographs into evidence do not eliminate or even diminish the prejudicial impact of the photographs. Gruesome photographs, therefore, continue to have a prejudicial impact.\textsuperscript{119} Despite this fact, courts generally admit gruesome photographs whenever the proponent can show the photographs' relevance to a material issue.\textsuperscript{120} Ordinarily, demonstrating relevance is a perfunctory matter. Courts admit gruesome photographs for a variety of purposes, allowing the proponent to prove corpus delicti,\textsuperscript{121} identify a victim,\textsuperscript{122} show the lo-

\textsuperscript{117} Fed. R. Evid. 403.

\textsuperscript{118} See K. Redden & S. Saltzburg, \textit{supra} note 65, at 101 (3d ed. 1982). The drafters of the Federal Rules of Evidence designed rule 403 to ensure that decisions are based on rational, rather than emotional responses. Commonwealth v. Batty, 482 Pa. 173, 177, 393 A.2d 435, 437 (1978) ("This evidentiary rule is not designed to protect an accused from the \textit{per se} use of photographs of a victim of a homicide; its purpose is to protect an accused from a conviction based upon a jury's emotional reaction, rather than a careful deliberation of the facts of the case."); see also State v. Beers, 8 Ariz. App. 534, 539, 448 P.2d 104, 109 (1968) (photographs of murdered child showing massive bruises, coupled with prosecutor's rhetoric, "may have inflamed the jury into acting out of passion rather than logic"); State v. Banks, 564 S.W.2d 947, 952 (Tenn. 1978) (responding to the prosecution's argument that photographs of the murder victim's battered head and body were relevant to the degree of punishment, the court stated: "Shocking and horrifying the jury emotionally does not assist them in making a reasoned determination of how serious the crime is, how much deterrence is necessary to prevent like crimes in the future, or what danger the defendant poses to society.").

\textsuperscript{119} The admission of prejudicial photographs can lead to the infliction of excessive punishment. In State v. Banks, 564 S.W.2d 947 (Tenn. 1978), for example, the jury recommended the death penalty rather than a life sentence, primarily because of gruesome photographs of the victim. Photographs, however, can serve a legitimate function in the sentencing process. See Foster v. State, 369 So. 2d 928 (Fla.) (photograph introduced during sentencing hearing showed that defendant delivered a blow with a knife sufficient to sever the incapacitated victim's spinal cord, thus constituting one of the aggravating circumstances justifying the death penalty), cert. denied, 444 U.S. 885 (1979).

\textsuperscript{120} See, e.g., Bucyrus-Erie Co. v. Van Haden, 416 So. 2d 698 (Ala. 1982); Robinson v. F.W. Woolworth & Co., 420 So. 2d 737 (La. Ct. App. 1982).


\textsuperscript{122} State v. Jackson, 200 Neb. 827, 265 N.W.2d 850 (1978); Scott v. State, 92 Nev. 552,
PHOTOGRAPHIC EVIDENCE

ocation and extent of wounds,\textsuperscript{123} show the atrociousness of the crime,\textsuperscript{124} corroborate and clarify a witness’ testimony or the prosecution’s theory of the crime,\textsuperscript{125} illustrate expert testimony about the victim’s wounds,\textsuperscript{126} refute a claim of self-defense,\textsuperscript{127} or shed light on such subjective matters as intent, malice, or premeditation.\textsuperscript{128}

Opponents typically do not dispute the accuracy of gruesome photographs. In the event of a dispute, claims of color distortion represent the most likely challenge. In \textit{Faught v. Washam},\textsuperscript{129} for example, the Missouri Supreme Court held that the trial court improperly admitted photographs of a victim’s injured thigh and foot because the injuries were “not portrayed in their natural color,” but rather in “‘high and unrealistic colors.’”\textsuperscript{130} More often, discrepancies arise from the color of bruises in photographs and testimony describing the bruises.\textsuperscript{131} These discrepancies, however, usu-

\begin{itemize}
  \item \textsuperscript{123} 554 P.2d 735 (1976); cf. People v. Harris, 38 Ill. 2d 552, 232 N.E.2d 721 (1967) (photograph admitted to show the difficulty of visual identification).
  \item \textsuperscript{127} Pilon v. Commonwealth, 544 S.W.2d 228 (Ky. 1976); State v. Oveross, 18 Or. App. 300, 525 P.2d 176 (1974); Cagle v. State, 507 S.W.2d 121 (Tenn. Crim. App. 1977).
  \item \textsuperscript{130} 329 S.W.2d 588 (Mo. 1959).
  \item \textsuperscript{131} Id. at 600. The court concluded that the photographs’ “probable inflammatory and prejudicial effect far outweighed their potential evidentiary or probative value. . . .” \textit{Id.}
  \item \textsuperscript{132} See, e.g., Seyle v. State, 584 P.2d 1081 (Wyo. 1978); cf. Sage v. State, 87 Wis. 2d 783, 275 N.W.2d 705 (1979) (photographs admitted to show bruises although some of the discoloration depicted in the photographs may not have resulted from the crime).
\end{itemize}
ally do not prevent the admission of photographs.\textsuperscript{132}

Courts often have ignored the defendant’s objections to gruesome photographs by focusing on the nature of the defendant’s alleged act, rather than the capacity of the photographs to influence the jury improperly.\textsuperscript{133} Especially in the criminal context, a standard reply to an objection based on the prejudicial nature of a gruesome photograph has been that the accused has no right to complain about offensive photographic evidence because the accused committed the gruesome act or because the crime is inherently gruesome.\textsuperscript{134} These replies do not respond to the prejudice problem, however, and may threaten constitutional safeguards.\textsuperscript{135}

Courts sometimes justify admitting gruesome photographs by analogizing to verbal testimony. Because courts do not exclude forceful oral testimony, they reason that they cannot exclude forceful photographic evidence.\textsuperscript{136} This reasoning is specious, however, because fundamental differences exist between oral and photographic evidence. Jurors are more likely to believe physical evidence than oral testimony.\textsuperscript{137} The potential prejudice of photo-

\textsuperscript{132} See \textit{supra} note 131.

\textsuperscript{133} See, e.g., State v. Seehan, 258 N.W.2d 374, 378 (Iowa 1977) (“Evidence of this nature tends to be gruesome because murder is gruesome.”); State v. Burnfin, 606 S.W.2d 629, 630 (Mo. 1980) (“Insofar as Exhibit 11 tends to be shocking or gruesome it is because the crime is one of that sort.”); State v. Johnson, 25 Utah 2d 46, 50, 475 P.2d 543, 546 (1970) (“There is some sort of paradox involved where one commits a heinous act and then complains that the very sight of what he has done is so revolting to the sensibilities of [the jurors] that it would so distort their judgment that they could not fairly determine his guilt or innocence of crime.”); State v. Jackson, 22 Utah 2d 408, 410, 454 P.2d 290, 291 (1969) (“If an accused does not wish the jury to see the blood which his criminal hand has caused to flow, then he should choose some method other than bloodshedding to commit his murder.”). This reasoning appears to presume guilt, at least when directed against the accused, thus ignoring due process and the presumption of innocence.

\textsuperscript{134} See \textit{supra} note 133.

\textsuperscript{135} See \textit{id}.

\textsuperscript{136} If a Thomas Gray, a William Shakespeare or an Edgar Allan Poe had witnessed the accident, their descriptions of it would as aptly and inflamatorily have described [the victim’s] condition as do the pictures in this record. And while appellants would agree that the eloquence of a Gray, a Shakespeare or a Poe would not help their cause, we do not believe that they would argue that their word description would not be legitimate or proper to go to the jury. Consequently we do not find the pictures, which show what words would have described, to have been improperly admitted.


\textsuperscript{137} A recognition that physical evidence is inherently more credible than oral testimony
graphic evidence, therefore, is enhanced.

Other courts have attempted to dismiss the problem of gruesome photographs by emphasizing the jurors' ability to evaluate the photographs properly.\textsuperscript{138} Courts taking this approach suggest that gruesome photographs will not influence jurors unfairly because jurors are more detached, experienced, and unimpressionable than the legal profession normally assumes.\textsuperscript{139} This approach, however, fails to recognize that people naturally respond to gruesome photographs with revulsion.\textsuperscript{140} Jurors rarely observe the type of wounds and injuries typically portrayed in gruesome photographs. Realistically, corpses clothed in bloody garments and partially decomposed bodies are not part of the average person's everyday experience.\textsuperscript{141}

\textit{Motion Pictures}

Courts generally subject motion pictures\textsuperscript{142} to the same admissi-
bility standard as photographs. A motion picture must be relevant to a material issue and properly authenticated to be admissible.\textsuperscript{143} A motion picture's portrayal of a visual image differs significantly from a photograph's portrayal of a visual image. The special attributes of film presentation—action, lifelikeness, and susceptibility to manipulation—present unique problems regarding the motion picture's evidentiary value.\textsuperscript{144} Advocates typically use motion pictures to reenact an event\textsuperscript{145} or refute a disability claim by secretly filming a person performing activities inconsistent with the claimed disability.\textsuperscript{146}

\textit{Reenactments}

Courts admit reenactments as long as they do not materially alter the events or objects that they are supposed to portray.\textsuperscript{147} Even if a reenactment does not contain a material alteration, however, it can be misleading. A reenactment of one party's version of an incident, for example, can lead the viewer to accept that party's version.\textsuperscript{148} A reenactment also can mislead the viewer by creating an unwarranted impression of certainty. Because any event involves numerous variables, many of which are uncertain, exact duplication of an event may be impossible. In \textit{Pittman v. Mississippi Power &

\textsuperscript{143} See supra notes 10-11 and accompanying text.
\textsuperscript{144} See 2 C. Scott, supra note 3, § 712; 3 id. § 1298.
\textsuperscript{147} American State Bank v. County of Woodford, 55 Ill. App. 3d 123, 133, 371 N.E.2d 232, 239 (1977); see also Summit County Dev. Corp. v. Bagnoli, 166 Colo. 27, 441 P.2d 658 (1968) (motion picture excluded because it did not depict accurately the conditions at the time of the accident); Owens v. Thornton, 349 So. 2d 431 (La. Ct. App. 1977) (motion picture reenactment improperly admitted because it did not depict accurately the vehicles in an accident). Courts may admit motion pictures that contain altered conditions if the pictures are not offered as reconstructions of the event in question. See, e.g., Hueper v. Goodrich, 263 N.W.2d 408 (Minn. 1978).
\textsuperscript{148} French v. City of Springfield, 65 Ill. 2d 74, 82, 357 N.E.2d 438, 442 (1976).
Light Company, for example, the defendant offered a motion picture showing that no telephone pole could withstand the pressure generated when the plaintiff's decedent hit the guy wire of a telephone pole with his tractor. The Supreme Court of Mississippi held that the trial court erred in admitting the motion picture because material variations existed between the events in the motion picture and the circumstances of the accident, and also because some factors could not be duplicated. The court noted, for example, that the speed of the tractor, the gear in which it was operating, and the point of impact were all unknown.

Using a party's own actors to stage a reenactment also raises questions of manipulation. "[A]ny movie is a manufactured, self-serving piece of evidence. It is true, of course, that all evidence may be said in one sense to be self-serving. However, not all evidence is a staged production whose finale is not only hoped for but very much part of the script.

Wilson v. Piper Aircraft involved a self-serving motion picture with a particularly dramatic impact. In Wilson, the plaintiffs alleged that an aircraft's shoulder harnesses were not crashworthy. To support their allegation, the plaintiffs offered to supplement their expert testimony with motion picture evidence. Although the Federal Aviation Administration had prepared the motion pictures before the events that led to the lawsuit, the plaintiffs' expert had supervised the production of one of the motion pictures. Entitled "Restraints for Survival," the motion picture was designed to impress viewers with the need for upper torso restraints to protect aircraft occupants. The film included "dramatic music, repeated

149. 368 So. 2d 238 (Miss. 1979).
150. Id. at 240; see also 3 J. Wigmore, supra note 30, § 798a.
151. 368 So. 2d at 240.
152. Ballan v. General Motors, 121 N.J. Super. 118, 128, 296 A.2d 317, 322 (1972); see also Psel v. Stamford Hosp., 180 Conn. 314, 324, 430 A.2d 1, 8 (1980) ("When a film represents a staged reproduction of one party's version of the facts it should be examined with care because of the danger that the filmmaker's art may blur reality in the minds of the jury.") (citing McCormick, supra note 10, § 214); 3 J. Wigmore, supra note 30, § 798a ("[T]he party's hired agents may so construct [a reenactment] as to go considerably further in his favor than the witnesses' testimony has gone, And yet, any motion picture is apt to cause forgetfulness of this and to impress the jury with the convincing impartiality of Nature herself.").
views of what appear[ed] to be a dead body beside the wreckage of a small airplane, and closeups of dummies used in test crashes, their faces smeared with red to simulate blood. 154 Rather than focusing on the relevance of the motion picture, the Oregon Supreme Court identified the picture's emotional appeal as the basis for holding that the trial court had properly excluded the evidence. 155

Refutation of Disability Claims

Motion pictures used to refute disability claims also raise questions of distortion and reliability. Courts generally admit these motion pictures if relevant in personal injury actions involving disability claims, 156 workmen's compensation cases, 157 and suits involving disability benefits under an insurance policy. 158 The dramatic impact of these motion pictures is not objectionable in itself. Their potential for deception, however, deserves closer attention.

The speed of a motion picture can misrepresent an allegedly disabled person's physical capabilities. In Powell v. Industrial Commission, 159 for example, an employer offered motion pictures depicting the claimant at work in a gas station to refute a claim of lost earning capacity. The referee admitted the motion pictures over the claimant's objection, but stated in his summary to the Arizona Industrial Commission that the motion picture depicted the claimant moving faster than he actually was moving at the time. Holding that the admission of the motion picture constituted reversible error on the issue of lost earning capacity, the Arizona Court of Appeals recognized that few forms of evidence could damage a compensation suit more than a motion picture showing the claimant working faster than he was actually capable of working. 160

154. Id. at 77, 577 P.2d at 1331.
155. Id.
160. It is difficult to imagine any evidence more damaging to a compensation claimant than the motion pictures as shown, which were taken or projected so as to
Similarly, a motion picture showing a series of separate actions in a rapidly accelerated succession also would decrease a disability claimant’s chance of recovery.\(^{161}\)

**Videotapes**

Videotapes,\(^{162}\) which are subject to the same admissibility standard that courts apply to photographs and motion pictures,\(^{163}\) present many of the same problems. To the extent that a proponent uses videotapes for the same purpose as motion pictures, videotapes present the same problems. Videotaped reenactments, for example, can contain material alterations in the events or objects portrayed.\(^{164}\) Videotapes of the activities of disability claimants also can be misleading because they can make actions that occurred at different times or over a long period of time appear to occur within a short, uninterrupted time period.\(^{165}\)

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show the claimant working at a rate of speed different from the speed under which he actually worked when the picture was taken.

4 Ariz. App. at 180, 418 P.2d at 610. *See also* Utley v. Heckinger, 235 Ark. 780, 362 S.W.2d 13 (1962) (motion picture that accelerated personal injury plaintiff’s movements inadmissible). A motion picture that decelerates a person’s movements also would tend to mislead. *See* Snyder v. American Car & Foundry, 322 Mo. 147, 157, 14 S.W.2d 603, 607 (1929) (dicta).

161. [E]vidence in the form of moving pictures must be used with great caution, because such pictures show only very brief intervals of the activities of the subject, they do not show rest periods, they do not reflect whether the subject is suffering pain, and they do not show the after effects of his activities. Lambert v. Wolf’s, Inc., 132 So. 2d 522, 527 (La. Ct. App. 1961). *See also* Powell v. Industrial Comm’n, 4 Ariz. App. 172, 180, 418 P.2d 601, 610 (1966) (despite admitting motion picture of compensation claimant working at a gas station, referee’s report noted that it showed the claimant “only when he was moving, and not during periods when he was resting”), vacated, 102 Ariz. 11, 423 P.2d 348 (1967).


163. *See supra* notes 10 & 12 and accompanying text; *see also* 3 C. Scott, *supra* note 3, § 1294 (Supp. 1980) (emphasizing the absence of any admissibility distinction between videotapes and motion pictures).


165. Niles Police Dep’t v. Industrial Comm’n, 83 Ill. 2d 528, 416 N.E.2d 243 (1981); Orgeron v. Tri-State Rd. Boring, 454 So. 2d 65, 68 (La. 1983) (“[E]vidence in the form of moving pictures or videotapes must be approached with great caution because they show only intervals of the activities of the subject, they do not show rest periods, and do not reflect whether the subject is suffering during or after the activity.”).
Videotapes are used for a variety of other purposes as well.\textsuperscript{168} The increasingly popular filmed deposition is almost exclusively recorded on videotape.\textsuperscript{167} Police departments use videotapes to record and preserve sobriety tests\textsuperscript{168} and confessions.\textsuperscript{169} They also use videotapes to monitor criminal activity in undercover fencing operations.\textsuperscript{170} Courts\textsuperscript{171} and commentators\textsuperscript{172} alike have given over-

One fault that videotapes do not share with motion pictures is the deceptive representation of movement when the speed of a motion picture is altered. If the speed of a videotape is not uniform, the picture will distort horizontally, a phenomenon known to technicians as "video tape breakup." Case Comment, Evidence—Admission of Video Tape: Hendricks v. Swenson, 38 Mo. L. Rev. 111, 116 & n.42 (1973).

166. Lawyers and police officers prefer videotapes to motion pictures for many reasons. Videotapes offer such advantages as instant replay, immediate results without processing delays, tape reusability, and the ability to monitor both picture and sound as they are recorded. 2 C. Scott, supra note 3, § 714 (Supp. 1980); 3 id. § 1333. Videotape recorders can record action and sound simultaneously, without the accessory equipment needed to make a simultaneous sound recording for a motion picture. See 2 id. § 714. Videotape recorders are also much easier to use than motion picture cameras. 3 id. § 1333; see also Cunningham, Videotape Evidence: Technological Innovation in the Trial Process, 36 Ala. Law. 228, 230 & n.9 (1970). Finally, videotapes are less expensive than motion pictures. 2 C. Scott, supra note 3, § 714 (Supp. 1980).


whelming approval to the use of such videotaped evidence.

Several criticisms may be levelled at the use of videotaped depositions. Consciously or inadvertently, the cameraman can present a biased view of a witness' testimony by altering the camera's perspective.\(^1\) Focusing exclusively on the witness during a deposition, for example, emphasizes his testimony more than the examining attorney's questions.\(^2\)

Another problem concerns the jury's perception of the witness' demeanor. Courts and commentators have stressed that videotaped depositions are superior to written transcripts because videotapes can show the witness' demeanor.\(^3\) When jurors see a videotape of a witness, however, they cannot perceive the witness' demeanor; they can perceive only the videotape's rendition of the witness' demeanor.\(^4\) Lens variations and camera positions may lead jurors to

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\(^{173}\) See Doret, supra note 172, at 234-35; Kosky, supra note 172, at 237.

\(^{174}\) Comment, Videotape Deposition, supra note 172, at 224. But cf. McCrystal, First Videotape Trial: Experiment in Ohio, 21 Dep. L.J. 287, 276 (1972) (recognizing the capability of videotapes to emphasize or subordinate roles, but considering this capability an advantage in a prerecorded videotape trial).


\(^{176}\) Stores v. State, 625 P.2d 820, 828 (Alaska 1980) ("Significant differences exist between testimony by videotape and testimony face-to-face with the jury. Videotapes may affect the jurors' impressions of the witness' demeanor and credibility."); Brakel, supra note 172, at 957 ("[T]he medium cannot capture the total psychological and physical essence of a witness—persuasiveness, credibility, hesitancy, and forcefulness are indicated through arm, hand or eye movements or other bodily changes."); Kosky, supra note 172, at 237.
miss subtle nuances that ordinarily would change their evaluation of the witness’ credibility.177

Videotaped confessions raise more troubling questions, some of which involve the constitutional rights of the accused. In Hendricks v. Swenson,178 for example, the police had videotaped the defendant’s confession to a first-degree murder charge and the defendant then appealed his conviction on the ground that the confession was involuntary. The United States Court of Appeals for the Eighth Circuit held that the defendant voluntarily made the videotaped confession, and that the district court properly admitted the confession into evidence.179 Although the Eighth Circuit’s narrow holding in Hendricks focused on voluntariness, the majority and the dissenting opinions extended their analyses to related questions. The majority noted that rule 15(a) of the Federal Rules of Criminal Procedure permits depositions in criminal trials and that courts likewise should permit confessions because no relevant distinction exists between depositions and confessions.180 The court stressed that videotaped confessions protect an accused, rather than endanger him, because they prevent the police from overreaching, and because they corroborate the accused when he gives his confession involuntarily.181

The court also summarily addressed whether the videotaped confession violated the defendant’s fifth amendment privilege against self-incrimination. Because the state does not violate an accused’s privilege against self-incrimination by presenting a photograph or a blood sample at trial, the court reasoned that the use of a videotaped deposition likewise did not violate the privilege.182

Concluding its analysis, the court endorsed videotaped confessions as “a forward step in the search for truth.”183

Reasoning that the confession was involuntary, the dissent argued that the videotape was inadmissible.184 Assuming that the de-

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177. Comment, Criminal Videotape, supra note 172, at 574-76.
178. 456 F.2d 503 (8th Cir. 1972).
179. Id. at 504-05.
180. Id. at 505.
181. Id. at 506.
182. Id. at 506-07.
183. Id.
184. Id. (Heaney, J., dissenting).
fendant did confess voluntarily, the dissent nevertheless would have excluded the videotape unless safeguards were established to prevent the inherent problems created by videotapes in the confession context.\(^{185}\) The dissent recognized at least three distinctions between videotaped confessions and videotaped depositions. First, voluntariness typically is not an issue in a deposition situation. Second, the entire transaction is videotaped in a deposition but the entire interrogation of a suspect is not. Third, the witness at a deposition generally has counsel to represent his interests.\(^{188}\)

The dissent was concerned primarily with the potential for deception in videotaped confessions. Although the procedure for charging an accused involves many stages, including the reading of \textit{Miranda} warnings, the videotape shows only a final step in the process—the confession.\(^{187}\) The appearance of the accused on videotape also can be deceiving. Videotape tends to roughen the appearance of the subject, emphasizing physical characteristics such as scars, blemishes, and beards,\(^{188}\) as well as unpleasant behavioral characteristics.\(^{189}\) The dissent added that, “[i]n order to present even a normal appearance on videotape, most persons must be made up or otherwise prepared.”\(^{189}\)

A videotape probably will have a more dramatic effect than a written statement because the fleeting nature of visual images on a videotape leaves less time for critical analysis.\(^{191}\) Because of this phenomenon, and because of “the quality of ‘liveness’ in a video-

\(^{185}\) Id. at 507-09.
\(^{186}\) Id. at 508.
\(^{187}\) Id. at 507-08; cf. Paramore v. State, 229 So. 2d 855 (Fla. 1969) (videotaped confession that was an accurate reproduction of the entire interview between the officer and defendant obviated the state’s need to show a chain of custody of the videotape), vacated and remanded, 408 U.S. 935 (1972).
\(^{188}\) 458 F. 2d at 508 (Heany, J., dissenting) (citing H. ZETTL, TELEVISION PRODUCTION HANDBOOK 370 (2d ed. 1968)). The exaggerated unshaven appearance of Vice President Nixon in the televised 1960 Nixon-Kennedy debates exemplifies the unexpected distortions that result from peculiarities in the videotape process. See T. WHITE, THE MAKING OF THE PRESIDENT, 1960, at 289-90 (1961); cf. McMenomin, \textit{Was McLuhan Right?}, EDUC. INDUS. TELEVISION, Oct. 1975, at 45 (students who viewed their teacher on television were more critical and displayed less empathy toward him than students who viewed the same teacher in person).
\(^{189}\) 456 F. 2d at 508 (Heaney, J., dissenting) (citing H. ZETTL, supra note 188, at 342).
\(^{190}\) 456 F.2d at 508 (Heaney, J., dissenting) (citing H. ZETTL, supra note 188, at 369-87).
\(^{191}\) 456 F.2d at 508 (Heaney, J., dissenting).
taped confession," the dissent argued that admission of the videotape essentially compelled the defendant to take the stand and incriminate himself.192 Moreover, without knowing the full implications of a videotaped confession, the accused could not voluntarily waive his rights.193 The dissent in Hendricks acknowledged the distortive capabilities of videotaped confessions, although the majority skirted the issue by assuming disputed facts.194 Nevertheless, most courts have followed the approach adopted by the majority in Hendricks.195

X-Rays

X-rays196 are the least objectionable form of photographic evidence because of their overall reliability and accuracy.197 Because X-rays are photographic representations of internal body structures, testimony that the X-ray accurately represents a subject would be absurd.198 Instead, testimony regarding the X-ray process and hospital identification procedures is used to lay the foundation necessary to authenticate an X-ray.199 Several courts have suggested that the silent witness theory, which would treat X-rays as self-authenticating evidence, is the best theory for admitting X-rays into evidence.200 The admissibility standard for X-rays, therefore, has become increasingly liberal.

192. Id. at 509.
193. Id.
194. If a proper foundation is laid for the admission of a video tape by showing that it truly and correctly depicted the events and persons shown, and that it accurately reproduced the defendant's confession, we feel that it is an advancement in the field of criminal procedure and a protection of defendant's rights. 456 F.2d at 506.
196. The light-sensitive materials used in photography also respond to the radiation transmitted by X-rays. Thus, when transmitted through a subject, the X-rays will reveal on film a black and white image created by the subject's varying resistance to the passing radiation. D. CHEsTY & M. CHEsNEY, RADIOGRAPHIC PHOTOGRAPHY 3-4 (2d ed. 1969).
197. 2 C. ScoTT, supra note 3, § 631.
199. 3 C. ScoTT, supra note 3, § 1263.
200. See supra note 198.
Some courts, for example, have tacitly presumed the reliability of a hospital’s X-ray and identification procedures.\textsuperscript{201} Courts also have allowed testimony by physicians who were not present at the taking of the X-rays to establish authenticity,\textsuperscript{202} and other courts have admitted X-rays under the business documents exception to the hearsay rule.\textsuperscript{203} Although these liberal approaches raise questions of potential misidentification,\textsuperscript{204} X-rays are less likely to deceive than other forms of photographic evidence.\textsuperscript{205} Thus, X-ray evidence that has been properly authenticated deserves substantial weight.

\textsuperscript{201} Modern day hospital practice is such that the radiologist very likely does not see the patient, the treating doctor is not present when the X-rays are exposed or read, and he may well rely heavily upon the radiologist's report in diagnosing and treating his patient's condition. X-rays are made with proper identifying marks and the trained radiologist can determine from the film itself as to whether the exposure is proper and the film diagnostic. When these safeguards are accepted in the hospital, we see no reason why they should not be similarly accepted in court.


\textsuperscript{204} Cf. Smith v. Smith, 125 Ga. App. 257, 259, 187 S.E.2d 330, 333 (1972) ("[X]-rays [taken before an accident that was the subject of a personal injury action] prove only that some person or persons . . . had x-rays made of various parts of the body at various times prior to the date of [the accident].").

\textsuperscript{205} See 2 C. Scott, supra note 3, § 631. Potentially, lost detail through improper exposure or other variables could render an X-ray deceptive, or at least reduce its overall evidentiary value. Underexposing X-rays causes lost detail in the film's transparent parts; overexposure causes lost detail in the film's dark parts. 2 id. § 638. Other factors that generally could cause poor detail include "movement of the subject, too short a distance between X-ray tube and film . . . and use of an X-ray tube having too large a focal spot." Id. § 637. In practice, however, the expertise of X-ray technicians minimizes these potential distortions. See id. § 638. Unlike other photographic evidence, X-rays always are taken by a professional under controlled conditions. "Furthermore, X-ray films often are developed while the patient waits so that the picture can be retaken if an examination of the film proves that it has been exposed faultily." Id.
DETERMINING THE APPROPRIATE EVIDENTIAL WEIGHT OF PHOTOGRAPHIC EVIDENCE: A PROPOSED TEST

Despite its general utility, photographic evidence has numerous potential deficiencies that affect not only its admissibility, but also its evidentiary weight. Variations of lenses and camera position can render a photograph dangerously deceptive.\textsuperscript{206} Other variables, such as lighting, film type, lens filters, camera quality, exposure, development techniques, and perceptual errors, also can render a photograph misleading.\textsuperscript{207} Regardless of technical accuracy, a photograph may influence the factfinder improperly.\textsuperscript{208} Although the prejudicial impact of a gruesome photograph may not outweigh substantially its probative value, the photograph's gruesome nature almost ensures that the photograph will induce some prejudicial effect. Finally, motion pictures\textsuperscript{209} and videotapes\textsuperscript{210} add distinct problems to the question of how much evidentiary weight photographic evidence deserves.

Existing case law indicates that photographic evidence has received increased acceptance from the legal profession.\textsuperscript{211} The silent witness theory of admissibility\textsuperscript{212} and the willingness of some courts to give photographs conclusive weight\textsuperscript{213} are concrete examples of this trend. The implicit rationale for the liberal admissibility standard is that photographic evidence is an inherently reliable product of a scientific process.\textsuperscript{214} The scientific nature of the process, however, justifies liberal admissibility standards only to the extent that the process is reliable. Consequently, courts should use an evidentiary test that focuses on the reliability of photographic evidence to minimize unjustified reliance on unworthy evidence.

In determining admissibility, courts should recognize the potential for deception and prejudice in the use of photographic evidence and should exclude the evidence if it could deceive or un-

\textsuperscript{206} See supra text accompanying notes 69-86.
\textsuperscript{207} See supra text accompanying notes 87-115.
\textsuperscript{208} See supra text accompanying notes 116-41.
\textsuperscript{209} See supra text accompanying notes 142-61.
\textsuperscript{210} See supra text accompanying notes 162-95.
\textsuperscript{211} See supra text accompanying notes 30-62.
\textsuperscript{212} See supra text accompanying notes 39-55.
\textsuperscript{213} See supra text accompanying notes 56-58.
\textsuperscript{214} See supra notes 59-62 and accompanying text.
duly prejudice the jury. If courts continue to liberally admit photographic evidence under the pictorial testimony theory and the silent witness theory, however, they should look to other indicia of its reliability to determine the appropriate evidentiary weight that the factfinder should accord such evidence. Allowing the jury to determine evidentiary weight without judicial guidance encourages unprincipled reliance on photographic evidence simply because of the scientific nature or dramatic effect of the evidence. An evidentiary test should prevent unprincipled reliance by examining the reliability and pertinence of photographic evidence.

One commentator has suggested that photographic evidence should receive as much weight as its authentication justifies. This proposition is an essential premise in constructing an effective test for photographic evidence, but falls short of complete effectiveness. Cases arise in which photographic evidence creates unjustified reliance but goes undisputed. Although a gruesome photograph may be technically reliable, it can influence jurors improperly. To mitigate the inevitable prejudice resulting from the admission of a gruesome photograph, the Maine Supreme Judicial Court in *State v. Stackpole* offered the following effective jury instruction:

This picture is going to be shown to the jury for whatever assistance it may be to you in understanding the testimony of Dr. Goodof. You will recall that his testimony was that death resulted from a combination of asphyxia by ligature and exposure to the elements. And it’s hard for a doctor . . . to describe the condition of the neck. So this is being shown to you for only that purpose. Now, pictures of this sort are repulsive to look at, but you are supposed to be like doctors. You are supposed to look at it calmly and in a detached way, and only for the purpose that I am permitting you to see it, to see the condition of the neck.

This instruction is effective for several reasons. Aside from its overall reasonableness, the instruction mitigates the prejudicial effect of gruesome photographs in two ways. First, it skillfully places jurors in an objective role. By telling jurors to assume a doctor's

216. 349 A.2d 185 (Me. 1975).
217. Id. at 189 n.3.
role, the instruction urges the jurors to reject their natural subjective responses. Because gruesome photographs are sometimes necessary to the factfinding process, courts must encourage the jury to show extraordinary objectivity. Second, the instruction focuses the jurors’ attention on the photograph’s pertinent features. The court is showing the photographic evidence to the jury because the testimony is difficult to conceptualize. Unnecessary prejudice would be more likely if the jury received the photograph without the instruction. The pertinence aspect of the instruction tells the jury to consider the gruesome photograph only for a specific purpose, thus mitigating potential prejudice.

The ideal evidentiary test for photographic evidence focuses not only on the varying reliability of photographic evidence, but also on its limited pertinence. For the test to be effective, the court must adequately instruct the jury on both elements. To ensure reliability, the court should emphasize that, although the trial court admitted the photographic evidence on the basis of a witness’ testimony or its own foundational basis, many factors affect the reliability of photographic evidence. Admission represents merely a minimal showing of reliability. Courts should emphasize the critical nature of lens variation and camera position. Lighting, film and lens filter variations, camera quality, exposure, and the development process also could be mentioned as relevant factors.\textsuperscript{218}

If motion picture evidence is offered, the court should caution the jury that the reliability of motion pictures also depends on camera position and lens variations, as well as such distinct factors as film speed, editing, and continuity of filming. Similarly, courts

\textsuperscript{218} The following instruction provides a good example:

I am asked to mention the subject of the photographs to you. I have admitted these photographs in evidence, and they are put before you. You ought to look at them with a great deal of caution. I suppose all of you know that a photograph of natural scenery may be more or less misleading as to distance, because of what photographers call perspective or want of perspective. You can hardly judge accurately of distance from a mere inspection of these photographs. Therefore, do not be misled by these photographs in an estimate of distance. These photographs tend to make the distances between near and far objects appear ([greater] or [less]) than they are in fact. In that respect it is fair to say that they are unavoidably misleading.

3 C. Scott, \textit{supra} note 3, § 1565 (adapted from McLean v. Erie R. Co., 69 N.J.L. 57, 54 A. 238 (1903), aff’d, 70 N.J.L. 337, 57 A. 1132 (1904)).
PHOTOGRAPHIC EVIDENCE

should instruct jurors that motion pictures and videotapes cannot convey fully a witness’ demeanor and that they may have peculiar effects on a witness’ appearance.

The pertinence standard applies primarily to gruesome photographs, although courts need not confine the standard to that context. The proper approach depends on the subject of the gruesome photograph and the issue upon which the court admits the evidence. Courts should mitigate unnecessary prejudice by emphasizing to the jury the need for objectivity, and by focusing the jury’s attention on the pertinent features of the photograph.219

The proposed test provides a flexible framework from which to determine the evidentiary value of photographic evidence and, ultimately, the weight that it deserves.220 The test is flexible because it offers a sliding scale, rather than a rigid formula for assigning evidentiary value. The weight deserved by photographic evidence increases as the number of reliability indicia increase. Even unwitnessed photographic evidence from automatic surveillance equipment deserves substantial weight, for example, because other reliability indicators justify that weight.221 To mitigate unnecessary prejudice, however, the pertinence standard limits otherwise reliable evidence, according to the subject of the photographic evidence.

CONCLUSION

The current practice of allowing the jury unbridled discretion to determine the weight given to photographic evidence is unsound. The potential of photographic evidence to deceive or influence the

219. The instruction offered by the Maine Supreme Judicial Court in State v. Stackpole, 349 A.2d 185 (Me. 1975), provides a useful model. See supra text accompanying note 217.

220. Although some states prevent charges on the weight of the evidence, the proposed test would remain useful. Courts could apply the test through objective instructions that allow the jury to determine independently the weight to accord photographic evidence. The instructions would inform the jury of the general properties of photographic evidence that make it potentially misleading, without discussing the specific evidence in issue. Courts in these jurisdictions could avoid commenting to the jury about the weight that it should give photographic evidence, yet ensure that the jury considered the evidence for the appropriate purpose. Furthermore, the pertinence strand of the test is effectively a limiting instruction, which is not equivalent to commenting on the weight of the evidence. 3 C. Scott, supra note 3, § 1562.

221. See supra note 48 and accompanying text.
jury improperly, combined with the increasing reliance on photographic evidence, requires courts to exercise greater control over the reliability and weight accorded photographic evidence. The proposed test enables courts to achieve this control.

The admission of photographic evidence does not indicate the trial court’s unqualified approval of its evidentiary value. Properly administered through instructions, the proposed test alerts the jury that photographic evidence may deserve less weight than it initially appears to merit. Under this test, the weight given to photographic evidence will reflect more accurately its evidentiary value.

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