ARTICLE

THE APPELLATE DIGITAL DELUGE: ADDRESSING CHALLENGES FOR APPELLATE REVIEW POSED BY THE RISING TIDE OF VIDEO AND AUDIO RECORDING EVIDENCE

Judge Jack M. Sabatino[*]

As surveillance cameras and other ubiquitous devices record more events in the world, appellate courts are being flooded with video and sound recordings, usually in digital form, as part of the record below. Such digital evidence offers substantial potential benefits in proving or disproving facts at trial. But that evidence can also pose associated challenges for appellate courts. Among other things, technological barriers, poor labels, and briefing inadequacies may hinder access to the recordings. In addition, the recorded footage may be incomplete, blurry, poorly lit, inaudible, skewed, or otherwise lacking. Those who watch and hear such digital evidence may be influenced by implicit or confirmation bias in interpreting its contents. And the recordings may take considerable time for judges and clerks to review.

The rising tide of digital evidence also can have a profound effect upon the nature of appellate review. Customary deference may be inappropriate when recordings clearly contradict the lower tribunal's factual findings on matters of consequence. And the interpretation of such evidence can provoke strong disagreements among the jurists

---

[*] Presiding Judge, Superior Court of New Jersey, Appellate Division, 2005–present, temporarily assigned to the New Jersey Supreme Court, September 2022–July 2023. The author taught Evidence Law for over twenty years at Rutgers Law School, where he was formerly an associate dean, and lectures frequently on evidence law issues in continuing education programs for judges and bar associations. This Article was prepared as a thesis for the Master of Judicial Studies Program of the Bolch Judicial Institute at Duke Law School.

The author expresses his great appreciation for the insights and other contributions to this article provided by Professors John Beckerman, Brandon Garrett, Jules Epstein, and Rayman Solomon, Associate New Jersey Supreme Court Justice Douglas Fasciale, Judge Adam Jacobs, librarians Katheryn Spalding and Peter J. Egler, and John Zen Jackson. Abundant thanks also must be extended to the author's wonderful secretary Susanne Rodriguez and his amazing teams of law clerks who worked in succession on this project, including Rob Bentlyewski, Elena Cicognani, Hanna Feldman, Kevin Simpson, Vanessa Sorrentino, and Rebecca Van Voorhees, plus intern Peter Angelica. Finally, the author expresses his deep gratitude to his faculty advisor, Professor Marin K. Levy, and Professor Jack Knight of Duke Law School, for their wise suggestions that enhanced the thesis. The research and ideas expressed in this Article should not be misconstrued to reflect any official policies of the New Jersey Judiciary, nor should they be used to forecast how the author or any other jurist will rule on legal issues in any case.

within a reviewing court, as illustrated by two famous cases highlighted in this Article: Arnstein v. Porter *and* Scott v. Harris.

Authored by a longtime state appellate judge and evidence professor, this Article explores, in depth, the challenges posed by the "Appellate Digital Deluge." It offers three resources to address the Deluge: (1) a proposed model rule to manage the appellate submission of video and audio recordings, (2) a checklist of factors to consider when courts of appeal review such evidence, and (3) a chart displaying an analytic framework of characteristics that bear upon the scope of appellate review in different procedural and evidentiary contexts.

INTRODUCTION

It's late in the day. In preparing for a calendar listing several appeals to be argued the next morning, an appellate judge has meticulously read each of the briefs from cover to cover. She has combed through the trial transcripts from start to finish. She has reviewed the many documentary exhibits reproduced in volumes of appendices. She has closely scrutinized the trial court's decisions. And she has studied, in detail, the applicable statutes and case law.

Thinking she was ready for the arguments, the judge then remembers the trial records in some of the appeals contain video- or audio-recorded evidence. She recognizes that she should consider these recordings, too.

The judge locates the recorded evidence, either remotely via the court's electronic docket or by playing a DVD or thumb drive. When she opens the files, she discovers the recordings can't be accessed without downloading extra software or surmounting some computer firewalls. Also, some of the files are poorly labeled with unintelligible letters and numbers. The judge reaches out to her dedicated information technology staff, who, after some troubleshooting, succeeds in giving her access.

The judge considers having her law clerks watch the videos instead, but she decides she must do it herself as a responsible appellate jurist. Besides, the law clerks went home a few hours ago after a long day of legal research.

The judge opens the digital files. She discovers in one of the appeals a robbery case with ten surveillance videos, all of which were presented to the trial court and which depict events at various times and camera angles. To her frustration, the time

counters displayed on the videos don't match up with the events or the real times. The persons, places, and objects in the videos often look blurry or dim. The voices on the recordings, none of which are transcribed, are sometimes hard to identify and understand.

The judge repeatedly toggles her playback device to fast forward and rewind to what seem to be the important places on the recordings. She reflects on whether the videos are consistent or in conflict with the facts found by the tribunals below.

The judge contemplates what her appropriate role and scope of review is in considering the videos. She wonders how firmly she needs to be convinced that the videos contradict the lower court's findings, to enable her court to grant relief to appellant, or how consequential any disparities must be to the issues posed on appeal. By this point, it is past midnight, and the judge retires for the evening.

The next morning, the judge shows the videos to her law clerks, who offer her differing opinions about various segments. The oral arguments proceed, and the lawyers spend a good amount of time quarreling about what is proven or disproven on the recordings.

The judge confers with her colleagues on the appellate panel about the cases, and they ponder whether the appeals should be affirmed, reversed, or remanded. As part of their conference, the judges discuss the contents of the videos and debate their significance. They disagree over what the videos prove or disprove, and also disagree over whether the outcome below needs to be overturned. The judge is assigned to write the panel's opinion in the robbery appeal. She plans to look carefully at the videos, once again, in chambers.

Meanwhile, the judge learns she has been assigned a dozen more appeals for the next calendar. Those cases likewise contain not only briefs, exhibits, transcripts, and court orders to read, but also video and audio recordings that were part of the trial record.

The judge sighs and wonders how the work will all get done. She ponders how her reactions to these many recordings should affect her appellate review. She muses that appellate judges in past eras probably did not have to grapple so often—if at all—with such problems.

****

Bearing in mind that not-so-imaginary vignette, this Article examines the impact of the increasing presence of video-recorded and audio-recorded evidence as part of the record on appeal.

As digital technology continues to permeate our lives, trial court proceedings more frequently include the presentation of video-recorded and audio-recorded evidence. Common examples of such "digital evidence"[1] include videos of motor vehicle stops by police; surveillance footage of crime scenes or accidents (including the video footage of the infamous homicide of George Floyd); recorded police interrogations; recorded eyewitness identifications; undercover wiretaps or videos;

1. This Article will intermittently use the term "digital evidence" to refer to video- and audio-recorded evidence, with occasional stylistic variations in the terminology.

voicemail messages; tweets or texts containing YouTube or other video or audio clips; videotaped deposition testimony played at trial; filmed expert inspections of property, machinery, or buildings; "day-in-the-life" films of injured plaintiffs; and so on.[2]

On appeal, lawyers and self-represented litigants across the nation are increasingly filing various forms of video-recorded and audio-recorded evidence, often stored in assorted digital formats. This abundant recorded material can often be enlightening to judges reviewing cases on appeal and can help them understand the factual record. But there are drawbacks to this "Deluge" of digital evidence.

In some instances, the recordings may confirm the facts determined in the trial court. The recordings may illuminate the relevant events. They may also discourage perjury and frivolous claims. And if the recordings are truly conclusive, they may save judicial review time.

But before those potential benefits can be realized by the appellate court, a host of administrative hurdles may need to be surmounted. Some of the pertinent recordings may be missing from the parties' appellate filings. Or the recordings may be so voluminous that they cannot be easily stored, physically or digitally. Or the technology used in making the recordings is incompatible with the appellate courts' computer systems. Or the recordings are poorly organized or labeled. Or playing them may require special software programs or equipment. And so on. Also, as a very practical matter, it can be time-consuming—perhaps infeasible—for appellate judges to watch or listen to such recordings in their entirety, in real time.

Assuming these storage, technology, and time allocation problems are managed, other difficulties may be posed by the content of the recordings. Sometimes the recordings may flatly contradict the factual findings below. At times the video evidence is ambiguous and inconclusive. Or the recordings may be inconsequential to the legal issues raised on appeal. The digital evidence may be of poor quality. Or it may portray the facts from a skewed or incomplete vantage point. It may be accorded undue weight in comparison to other forms of proof, such as transcribed witness testimony. As this Article will underscore, research has shown that video- and audio-recorded evidence may be less definitive than it may seem at first blush.

Further, a multimember appellate court may have disagreements within it about the import of the digital evidence. Some jurists on the panel may regard the digital evidence as being clearly conclusive of certain facts, while one or more colleagues examining that same recording may regard the proof as clearly conclusive of contrary facts. This was exemplified by the divided United States Supreme Court in its majority and dissenting opinions in *Scott v. Harris*,[3] involving video evidence, and decades earlier by the divided Second Circuit Court of Appeals in *Arnstein v. Porter*,[4] involving audio recordings—two important and controversial cases this Article will explore in more detail in Section III.

---

2. The topic is particularly timely because of the widespread use of remote technology during the COVID-19 pandemic, and the proliferation of video recordings of depositions and other recorded evidence that now can be presented in virtual form to the trial court and then on appeal.

3. 550 U.S. 372 (2007).

4. 154 F.2d 464 (2d Cir. 1946).

What weight should these recordings be given? The trial judge, hearing officer, or jury is the finder of fact. True, but what if, as an appellant may argue, one or more of the factfinder's determinations are contradicted by what appears on the recordings? What are the appropriate standards of review?

To envision this problem in more concrete terms, here is a hypothetical police dashcam scenario that will be explored further in this Article.

Imagine a criminal judge holds an evidentiary hearing to adjudicate a defendant's motion to suppress evidence seized by the police from his vehicle. Suppose a police officer who conducted the search testifies that she approached the defendant's vehicle from the passenger side and without her gun drawn. Imagine, further, the motion judge finds the officer credible, adopts those facts as the officer recalled and described them under oath, and denies the suppression motion. The defendant appeals.

Suppose, further, that a video recording, which is part of the record on appeal, shows that the officer instead approached the vehicle from the driver's side and with her gun drawn. Are the factual contradictions revealed by the video sufficient or mandatory grounds for reversal? As this Article will discuss, the answer to that query depends on many things.

To address these important subjects, this Article is organized as follows. Section I briefly traces the historical development of video- and audio-recorded evidence, stemming back to the use of still photography exhibits in court cases in the mid-1800s. That history places in context the benefits and challenges of appellate review posed by current recording technology.

Section II then examines, as a threshold subject, the operational problems that can make the filing and review of video- and audio-recorded evidence more difficult. This Section includes a proposed Model Rule the author has developed for appellate courts to consider adopting, which may ease the access, use, and storage of such video and audio evidence. Presently, no such comprehensive uniform rules squarely address the subject.

Section III turns to the factors that may affect the probative value of such digital evidence. Section III also addresses the applicable standards of review of such digital evidence, the varying articulation of those standards in illustrative appellate decisions, and the procedural and evidential contexts in which such digital evidence might be reviewed.

The Article concludes in Section IV by offering two tools that may aid in appellate review of cases with digital evidence. First, it presents a Checklist of considerations that may be helpful to both appellate judges who weigh and lawyers who advocate the impact of those recordings. The considerations include such things as admission or exclusion of the recordings in the trial court, authentication, method of presentation, narration, expert testimony, and use in summations and deliberations. Second, Section IV presents a Chart that provides an analytic framework for the standards of review in different settings.

I. HISTORY OF RECORDED EVIDENCE AND HOW COURTS HAVE ADAPTED TO IT

We've been down this road before.

Courts long have had to adapt to technological advances affecting the creation, presentation, and review of various new forms of evidence. The history briefly discussed here will focus on photographic technology as well as video- and audio-recorded technology.

A. Still Photographs

The use of recorded visual images as court evidence in the United States stems back to the development of still photography in the early 1800s. References to photographic evidence in judicial opinions appear as early as the mid-1800s.

For example, in 1857, in *United States v. Fossat*, a trial court in California considered a photograph of an oak tree in determining the boundaries of a real property conveyance.[5] The photograph was key evidence in this case.[6] The district judge's opinion specifically commented that "[t]he photograph exhibited in court shows that its size and isolated situation are such as to strike the eye and arrest the attention of the most casual observer."[7]

Three years later in 1860, in *Luco v. United States*, a land grant case, the United States Supreme Court concluded from photographic copies that the Mexican governor's official seal and signatures on the disputed grant were forgeries.[8] In its exercise of appellate review, the Court itself examined the photographic copies of the signatures on the pertinent documents.[9] Having done so, the Court "fully concur[red]" with the findings of the "[m]any excellent judges [who] have carefully scrutinized and compared the[] signatures, and [who] declare[d] the signatures in question are forgeries."[10]

These early evidential uses of photographs in court proceedings were momentous. In the past, litigants might have needed to rely on the testimony of eyewitnesses, or perhaps sketches of a scene. Photographs offered the potential to provide, for the first time, seemingly unbiased and possibly definitive proof of what a person, place, or thing involved in a court case actually looked like.

As time passed, the use of still photographs as exhibits in court cases became more commonplace. This historical development was described at length in Professor Jennifer Mnookin's 1998 seminal article on the subject.[11] The history was also noted in

---

5. 25 F. Cas. 1157, 1159 (C.C.N.D. Cal. 1857) (No. 15,137), *rev'd on other grounds*, 61 U.S. (20 How.) 413 (1858).

6. *Id.* at 1158–59.

7. *Id.* at 1159.

8. 64 U.S. (23 How.) 515, 541 (1860).

9. *Id.*

10. *Id.* The manner in which the Supreme Court Justices scrutinized and analyzed the photographic images in *Luco* was replicated a century later in how the federal appellate judges in *Arnstein v. Porter* personally listened to the sound recordings to evaluate their alleged similarities and how a later generation of Justices watched and analyzed the video-recorded car chase in *Scott v. Harris*. *See infra* Part III.C.3.

11. Jennifer L. Mnookin, *The Image of Truth: Photographic Evidence and the Power of Analogy*, 10 YALE J.L. & HUMANS. 1, 1–14 (1998) (detailing the history of photographic evidence).

law review articles published in the early twentieth century.[12] Mnookin observed that "the history of the legal use of photography is intimately intertwined with the history of photographic technologies."[13] As those techniques advanced, so did the legal uses. However, despite their potential evidential value, still photographs lacked both the capacity to record continuous movement (excepting the kineographs or "flip books" of still photos that became popular in the late 1800s[14]) or sounds.

B. Sound Recordings

Through the ingenuity of Thomas Edison and other inventors, sound recordings were developed in the late nineteenth century and began to flourish thereafter.[15] These early technologies had the drawback of requiring fixed locations to set up equipment to record; they did not enable the spontaneous recording of events.[16] As time passed, the technology improved to allow more timely and less cumbersome recording methods.[17] Trial lawyers learned how to use those recordings as evidence more effectively as the technology improved.[18]

As one early example of sound recording used in civil litigation, in 1906, a plaintiff who claimed the noise of trains going by his hotel was diminishing his property's value successfully moved into evidence recordings he had made of the noise.[19] He won his case against the railroad, relying on that proof.[20] Years later, dictograph recordings were used by the government as evidence in a famous 1912 bribery case against Clarence Darrow, over his strenuous objection.[21] By 1960, sound

---

12. *See generally* John H. Anderson, Jr., *Admissibility of Photographs as Evidence*, 7 N.C. L. REV. 443 (1929); W.C. Rodgers, *The Value and Admissibility of Photographs as Evidence*, 73 CENT. L.J. 241 (1911).

13. Mnookin, *supra* note 11, at 4.

14. Julie L. Mellby, *Graphic Arts: Kineographs*, PRINCETON UNIV. (Feb. 10, 2010), https://www.princeton.edu/~graphicarts/2010/02/kineographs.html [https://perma.cc/3WJL-HNLW].

15. Peter P. Roper, *Sound Recording Devices Used as Evidence*, 9 CLEV.-MARSHALL L. REV. 523, 523 (1960); *see also History of the Cylinder Phonograph*, LIBR. OF CONG., https://www.loc.gov/collections/edison-company-motion-pictures-and-sound-recordings/articles-and-essays/history-of-edison-sound-recordings/history-of-the-cylinder-phonograph/ [https://perma.cc/LB7C-KD4P] (last visited Oct. 30, 2023).

16. *See* Merrill Fabry, *What Was the First Sound Ever Recorded by a Machine?*, TIME (May 1, 2018, 11:00 AM), https://time.com/5084599/first-recorded-sound/ [https://perma.cc/TL59-BBT9] (depicting the cumbersome apparatus used to record sound vibrations in the late nineteenth century).

17. *See* Roper, *supra* note 15, at 523.

18. It is beyond the scope of this Article to discuss how well courthouses and courtrooms were historically equipped to enable lawyers to present such recordings. The author simply will attest from his personal experience from decades as a lawyer and judge that the technology customarily available in courthouses to present video and audio recordings has vastly improved. Years ago, lawyers needed to lug into the courtroom many sorts of devices and equipment, and court personnel wheeled things like televisions and VCR players in front of juries.

19. Boyne City, Gaylord & Alpena R.R. Co. v. Anderson, 109 N.W. 429, 430 (Mich. 1906).

20. *Id.* at 430 (cited in Roper, *supra* note 15, at 523). The court allowed the plaintiff to play a phonograph before the jury to reproduce the trains' sounds passing in proximity to his hotel. *Id.*

21. Roper, *supra* note 15, at 523 (citing CLARENCE DARROW, ATTORNEY FOR THE DAMNED: CLARENCE DARROW IN THE COURTROOM 516 (Arthur Weinberg, ed., 1957)). The dictograph recordings were made of eavesdropped conversations in a hotel room between Darrow and John Harrington, an investigative lawyer, during which Darrow allegedly discussed bribing jurors and witnesses in a high-profile criminal case he was

recordings had been widely used as trial evidence in diverse criminal and civil case types.[22]

"The admissibility of sound recordings . . . was aided largely by the rules of evidence governing telephone conversations."[23] The standards for admission were also likened to those for admitting still photographs.[24]

By the 1960s, "virtually all courts which ha[d] considered sound recordings offered in evidence ha[d] accepted them with relatively minor reservations," mainly concerning authenticity.[25] Courts recognized that the admissibility of sound recordings as evidence "depend[ed] entirely on the circumstances of the particular case."[26] This newer technology naturally created issues for judges. Those challenges were eventually addressed through various provisions within the Federal Rules of Evidence, state court rules, and case law.[27]

C. Films and Video Recordings

Films and video recordings took longer to become technologically and commercially widespread. They became more prevalent as forms of trial evidence during the twentieth century. As reflected in the 1923 edition of Professor Wigmore's seminal treatise on evidence law, the admissibility of motion pictures had, by that point, become a topic of discussion.[28] According to an article canvassing that history,

---

then handling. Michael Hannon, *Bribery Trials of Clarence Darrow (1912 & 1913)*, UNIV. OF MINN. L. LIBR. 16–17 (2010), https://librarycollections.law.umn.edu/documents/darrow/trialpdfs/Darrow_Bribery_trials.pdf [https://perma.cc/DZ22-MPYS]. The sound on the recordings was almost impossible to hear due to the primitive technology used for the eavesdropping. *Id.* at 16. However, the prosecution apparently had been able to use the recordings to ask impeaching questions of Darrow on cross-examination when he testified. *Id.* at 16–17. In his summation, "Darrow denounced the prosecution's use of the dictograph trap." *Id.* at 25. He further claimed the recordings "distort[ed]" his conversation. *Id.* (quoting CLARENCE DARROW, PLEA OF CLARENCE DARROW IN HIS OWN DEFENSE TO THE JURY THAT EXONERATED HIM OF THE CHARGE OF BRIBERY AT LOS ANGELES AUGUST, 1912, at 44 (1912)). According to one source, this was the first time dictograph evidence had ever been used in a Los Angeles courtroom. *Id.* at 17 (citing SIDNEY FINE, "WITHOUT BLARE OF TRUMPETS": WALTER DREW, THE NATIONAL ERECTORS' ASSOCIATION, AND THE OPEN SHOP MOVEMENT 1903-57, at 127 (1995)). The jury acquitted Darrow. *Id.* at 27.

22. *See* Roper, *supra* note 15, at 523–24 (citing to sound recordings admitted in evidence in cases involving "an attempted bribery of a draft board official, treasonous radio broadcasts, conspiracy to obstruct justice in a federal narcotics case, illegal short-wave radio transmissions aiding the illegal entry of Mexican nationals, disturbance to a motel by barking dogs in an adjoining pet hospital, and noises made by trains, planes, and a cement factory" (footnotes omitted)).

23. *Id.* at 524 (citing 5 JOHN HENRY WIGMORE, A TREATISE ON THE ANGLO-AMERICAN SYSTEM OF EVIDENCE IN TRIALS AT COMMON LAW 195 (3d ed. 1940) (making that comparison)).

24. *Id.* at 525. For example, a dubbed or rerecorded audio was held to have the same relationship to the original sound recording as a photographic print has to the negative. *Id.* (citing State v. Lyskoski, 287 P.2d 114, 117–18 (Wash. 1955)).

25. *Id.*

26. D. Cragg Ross, *Sound Recordings as Evidence*, 14 CHITTY'S L.J. 83, 83 (1966).

27. Roper, *supra* note 15, at 524 (citing F.M. English, Annotation, *Admissibility of Sound Recordings in Evidence*, 58 A.L.R.2d 1024, § 3 (1958)) (noting case law on the subject in "[s]lightly more than half the states").

28. 44 AM. JUR. *Trials* 171, § 50 & n.69 (1992 & Supp. 2022) (citing 2 JOHN HENRY WIGMORE, A TREATISE ON THE SYSTEM OF EVIDENCE IN TRIALS AT COMMON LAW § 798 (2d ed. 1923)).

and citing Professor McCormick's own treatise on evidence, "[m]otion pictures were at first often objected to, and sometimes excluded, because they were said to provide ample opportunity for fabrication, falsification, or distortion."[29] "By the 1930s, however, courts regularly held that it would be an abuse of discretion and reversible error to exclude relevant motion pictures which were properly identified and authenticated."[30] When moving pictures with sound (commercially known as "the talkies") were created during that era, courts extended similar principles of admissibility to that new medium.[31]

Amateur video recordings also became more prevalent and were used as evidence more frequently. Perhaps one of the most famous amateur video recordings during the last century was Abraham Zapruder's footage of President John F. Kennedy's passing motorcade in Dallas on November 22, 1963, as he was shot.[32] The footage was part of the evidence considered by the Warren Commission in its post-assassination investigation.[33] Another tragic and historic encounter that was spontaneously filmed by an amateur civilian, and used as evidence, was the beating of Rodney King by Los Angeles police officers in 1991.[34]

Meanwhile, case law developed to govern the admissibility of video recordings, particularly in criminal trials.[35] Over time, the evidence in criminal cases more frequently included footage from law enforcement stakeouts, outdoor surveillance cameras, bank and other private security cameras, station house interrogations, and so on.[36]

---

29. *Id.* § 50 n.70 (citing MCCORMICK ON EVIDENCE § 214 (Edward W. Cleary, ed., 3d ed. 1984)).

30. *Id.* § 50 n.71 (citing 40 AM. JUR. *Trials* 249, § 9 (1992 & Supp. 2023)).

31. *Id.* § 50 n.72 (citing Commonwealth v. Roller, 100 Pa. Super. 125 (1930)). The somewhat clunky transition from silent films to "talkies" has been best depicted and dramatized in the Academy Award-winning film *Singin' in the Rain.* As that film shows, audiences quickly developed a taste and preference for "talking pictures," and silent movies soon became obsolete. A similar change of audience expectations is posing challenges today for trial lawyers, as jurors have come to expect "*CSI*-style" advanced technology to be presented to them routinely at trials. Donald E. Shelton, Young S. Kim & Gregg Barak, *A Study of Juror Expectations and Demands Concerning Scientific Evidence: Does the "*CSI *Effect" Exist?*, 9 VAND. J. ENT. & TECH. L. 331, 362–65 (2006).

32. Nicholas R. Mack, *The Use of Amateur Videotapes as Evidence in Criminal Prosecutions: Citizen Empowerment or Little Brother's New Silver Platter?*, 15 HASTINGS COMMC'NS & ENT. L.J. 797, 799 (1993). Zapruder had filmed the events with an eight-millimeter camera, hoping to record the parade. *Id.*

33. JUSTICE EARL WARREN ET AL., REPORT OF THE PRESIDENT'S COMMISSION ON THE ASSASSINATION OF PRESIDENT JOHN F. KENNEDY 49, 63, 97–98, 100, 102–03, 105, 108–10, 112, 114–15, 453, 500 (1964).

34. Mack*, supra* note 32, at 802. The King video recording was "replayed countless times by almost every television station across the nation," and was a key piece of evidence admitted by the prosecution at the ensuing criminal trials. *Id.* at 803–04. When the first trial resulted in acquittals of four of the officers, the "verdicts . . . sparked outrage and riots." *Id.* at 804.

35. *See generally* Carl T. Drechsler, Annotation, *Admissibility of Videotape Film in Evidence in Criminal Trial*, 60 A.L.R.3d 333 (1974) (noting, among other things, common issues in case law from various jurisdictions regarding authentication, audibility, and visibility, and claimed misleading aspects of video recordings offered into evidence).

36. *See* Mack, *supra* note 32, at 801–02.

Video recordings became popular forms of evidence in civil litigation as well.[37] Common examples included surveillance films of personal injury claimants taken by defendants and insurance companies to undermine the claimants' allegations of severe physical limitations,[38] and video recordings of alleged conduct by spouses in divorce cases.[39]

As scholars have noted, video has become "a staple in a variety of areas of legal practice. The video camera not only passively records but actively shapes the civil law practices of wills, torts, patents and copyrights, contracts, insurance, and other substantive fields."[40]

The videotape process, which records and stores images through other means rather than photographically, was first used "on a practical scale by the television industry" in the 1950s.[41] By the 1970s, it was being used in court cases.[42]

By 1975, provisions within the new Federal Rules of Evidence were adopted to regulate the admission of recordings.[43] In the ensuing four decades, cases in the federal and state courts have frequently addressed both the admissibility and evidential weight of recorded proofs. Within that case law, "it is well established that motion pictures and video [recordings], when properly authenticated and relevant to the issues in the case, are admissible in evidence, within the discretion of the trial court."[44] Such recordings

37. The author can personally attest to this, having presided over more than one hundred civil jury trials and reviewed countless civil trial transcripts as an appellate judge.

38. *See, e.g.*, West v. Lake State Ry. Co., 321 F.R.D. 566, 571 (E.D. Mich. 2017) (stating that "'courts have uniformly ordered the discovery of surveillance videos' in personal injury cases because they have 'recogniz[ed] that video or film can sometimes be misleading or incomplete,'" and establishing that "the current weight of authority suggests that representations contained in videotape are indeed substantive evidence [of impeachment]" and thus discoverable (first alteration in original) (first quoting Roa v. Tetrick, No. 13-cv-379, 2014 WL 695961, at *5 (S.D. Ohio Feb. 24, 2014); and then quoting Fisher v. Nat'l R.R. Passenger Corp., 152 F.R.D. 145, 153 (S.D. Ind. 1993))); Diamond Offshore Servs. Ltd. v. Williams, 542 S.W.3d 539, 543, 551 (Tex. 2018) (holding that the exclusion of surveillance video depicting a personal injury plaintiff using his body "to maneuver a large 'monster wheel' onto his truck" following the underlying accident was harmful error); Sgambelluri v. Recinos, 747 N.Y.S.2d 330, 333 (Sup. Ct. 2002) (holding that a wedding video allegedly showing a personal injury plaintiff dancing after the underlying accident is "quite clear[ly] . . . relevant to the claim" that plaintiff sustained permanent injuries and could be compelled).

39. *See, e.g.*, Graev v. Graev, 848 N.Y.S.2d 627, 630 (App. Div. 2007) (man hired a private investigator to conduct video surveillance of his ex-wife's summer residence for sixty-three days to establish her cohabitation with another partner, generating "photos and videos of the driveway area" showing the partner's car parked there in the early morning and late evening hours), *rev'd on other grounds*, 898 N.E.2d 909 (N.Y. 2008).

40. Ronald K. L. Collins & David M. Skover, *Paratexts*, 44 STAN. L. REV. 509, 510 (1992).

41. Drechsler, *supra* note 35, § 1(a).

42. *See id.*

43. *See, e.g.*, FED. R. EVID. 901(b)(5) (stating that "[a]n opinion identifying a person's voice—whether heard firsthand or through mechanical or electronic transmission or *recording*—based on hearing the voice at any time under circumstances that connect it with the alleged speaker" satisfies the requirement of addressing the authentication of voice recordings (emphasis added)); FED. R. EVID. 1001(b) ("A 'recording' consists of letters, words, numbers, or their equivalent *recorded in any manner*." (emphasis added)); FED. R. EVID. 1002 ("An original writing, *recording*, or photograph is required in order to prove its content unless these rules or a federal statute provides otherwise." (emphasis added)).

44. 29A AM. JUR. 2D *Evidence* § 974 (2023) (footnotes omitted).

have been deemed, "on balance, a reliable evidentiary resource, and they should be admissible as evidence if they are relevant, they provide a fair representation of that which they purport to depict, and they are not otherwise barred by an exclusionary rule."[45]

As a general matter,

> [i]n ruling upon the admissibility of a video [recording], a trial court must determine whether: (1) the video [recording] is a reasonable representation of that which it is alleged to portray, and (2) the use of the video [recording] would assist the jurors in their determination of the facts of the case or serve to mislead them. The admissibility of a video depends on whether it is practical, instructive, and calculated to assist the jury in understanding the case.[46]

D. Recent Proliferation of Video/Audio Recordings in Society and in Litigation

Today, recording technology is more portable and user-friendly with the advent of smart phones and other devices. As a result, far more persons, places, things, and actions are now being recorded every moment of the day.[47] Accordingly, such recordings have proliferated in recent years as evidence in court proceedings,[48] some of them historic and high profile.[49]

This dramatic escalation of digital evidence presented in trial courts and hearing rooms has naturally led to a commensurate increase in the frequency with which such digital evidence has been submitted on appeal. For example, in the author's own

---

45. *Id.*

46. *Id.* (footnote omitted).

47. *See* Yael Granot, Neal Feigenson, Emily Balcetis & Tom Tyler, *In the Eyes of the Law: Perception Versus Reality in Appraisals of Video Evidence*, 24 PSYCH., PUB. POL'Y & L. 93, 94 (2018) (noting data showing that, within the United States, "there are approximately 30 million surveillance cameras shooting about 4 billion hours of footage each week").

48. *See, e.g.*, Mary D. Fan, *Justice Visualized: Courts and the Body Camera Revolution*, 50 U.C. DAVIS L. REV. 897 (2017); *Developments in the Law: Considering Police Body Cameras*, 128 HARV. L. REV., chap.4, 1794, 1805–08 (2015); Naomi Mezey, *The Image Cannot Speak for Itself: Film, Summary Judgment, and Visual Literacy*, 48 VAL. U. L. REV. 1, 1–2 (2013) ("Video images saturate our public and private lives. . . . [T]hey have become ubiquitous within the law, presented in litigation and other law-related contexts . . . .").

49. At the 2021 criminal trial of former police officer Derek Chauvin, the State of Minnesota introduced surveillance video from inside and outside of the store George Floyd had frequented immediately before he was killed. Janelle Griffith, *New Video Shows What Happened Before George Floyd's Deadly Encounter with Police*, NBC NEWS (March 31, 2021, 7:35 PM), https://www.nbcnews.com/news/us-news/new-videos-show-what-happened-george-floyd-s-deadly-encounter-n1262670 [https://perma.cc/2EHB-LUDZ]. The State also introduced the body-worn camera footage of the four responding officers in addition to several bystander videos. *Id.* One bystander, Darnella Frazier, who was seventeen at the time, recorded a nine-minute and twenty-nine-second video of the encounter, which was widely circulated and became regarded as the most important video for the State's prosecution of Chauvin. *See* Rachel Treisman, *Darnella Frazier, Teen Who Filmed Floyd's Murder, Praised for Making Verdict Possible*, NPR (April 21, 2021, 11:15 AM), https://www.npr.org/sections/trial-over-killing-of-george-floyd/2021/04/21/989480867/darnella-frazier-teen-who-filmed-floyds-murder-praised-for-making-verdict-possib [https://perma.cc/6YPP-LWFC]; Steve Karnowski & Amy Forliti, *Jurors Shown Video at Ex-Officer's Trial in Floyd's Death*, ASSOC. PRESS (March 29, 2021, 8:01 PM), https://apnews.com/article/derek-chauvin-trial-live-updates-7423d17dfc00daa660fce0b35b87a163 [https://perma.cc/XH5X-7J5L].

appellate court in New Jersey, the number of recordings of video evidence filed in direct criminal appeals increased nearly tenfold in the five-year span from the 2016–2017 court term to the 2021–2022 court term.[50] Similarly, in the Massachusetts Court of Appeals, the number of audiovisual exhibits filed with that court "is increasing every year."[51] Unfortunately, those audiovisual exhibits "are not automatically supplied" by appellate counsel as part of their filings, and they "present a variety of technology problems."[52] An estimated threefold increase in video evidence has occurred in appeals in Utah over the past five or six years.[53] The Michigan Court of Appeals likewise has experienced an increase in video submissions in both criminal and civil cases.[54] The Ohio Court of Appeals similarly reports growth in video evidence in criminal cases.[55]

One legal research database reveals that the number of federal and state court cases mentioning the term "video evidence" increased more than sevenfold in the decade between calendar year 2009 and calendar year 2019.[56] References to "audio recording(s)" during that time span doubled.[57] That rising volume has created extra work for appellate court staff in handling the digital evidence, and for appellate judges in reviewing it.

---

50. *See* E-mail from John K. Grant, Deputy Clerk, N.J. App. Div., to author (July 13, 2022, 14:29 EST) (on file with author). The majority of criminal appeals in New Jersey do not yet involve recorded evidence. Even so, the sharp rise in such cases in recent years may be attributed in part to law enforcement policies requiring greater use of police dashcams and bodycams and recording of station house interrogations. *See* Seth W. Stoughton, *Police Body-Worn Cameras*, 96 N.C. L. REV. 1363, 1376 (2018); James S. Arrabito, *Out of Focus: Zooming In on Body Cameras, Privacy, and Medical Emergencies*, 69 RUTGERS U. L. REV. 741, 743–44 (2017); Courtney A. Lawrence, Note, *Criminal Law: Too Much of a Good Thing: Limiting the Scope of the* Scales *Recording Requirement to Custodial Interrogations Conducted in Minnesota*—State v. Sanders, 37 WM. MITCHELL L. REV. 325, 331–32 (2010).

51. E-mail from Terrence D. Pricher, First Assistant Clerk, Mass. App. Ct., to author (July 13, 2022, 09:45 EST) (on file with author).

52. *Id.* Among other things, Mr. Pricher noted in his email that the technological difficulties include (1) differences in platforms making the downloading and playing of the audiovisual exhibits a challenge; (2) storing the exhibits, particularly larger files; (3) the fact that software licenses expire; (4) court equipment not meeting the minimum technology requirements to play some exhibits; and (5) the fact that many lawyers are not technologically savvy. *Id.*

53. E-mail from Gregory Orme, J., Utah Ct. App., to author (Feb. 14, 2023, 17:53 EST) (on file with author). Most of that increase was attributed to dashcam footage in criminal cases. *Id.*

54. E-mail from Christopher M. Murray, J., Mich. Ct. App., to author (Feb. 8, 2023, 11:52 EST) (on file with author). In consultation with the court's chief clerk and one of his deputies, Judge Murray roughly estimates a 25% increase in video submissions in criminal and civil appeals in the past five to seven years. *Id.*

55. E-mail from Pierre Bergeron, J., Ohio Ct. App., to author (Feb. 13, 2023, 15:03 EST) (on file with author). Judge Bergeron estimates that some video evidence is in the record in about half of his court's criminal appeals. *Id.*

56. Specifically, a Boolean search on Westlaw of all federal and state court cases mentioning "video evidence" for the year 2009 revealed 140 total; in 2022, that number sharply rose to 1,050. The raw number of cases in which video—or more broadly, digital—evidence was admitted are likely much higher; the search was limited to the specific use of the term "video evidence."

57. Applying the method described above, federal and state court cases mentioning "audio recording(s)" during the 2009 calendar year numbered 361; for the 2019 calendar year, that number roughly doubled to 737. *See supra* note 56.

In considering this growth trend, we must bear in mind that it might be tempered by an advantage: the possible conclusiveness of such evidence. Presumably in some instances the clarity of a video proving a criminal defendant's culpability ("she was caught red-handed") or a civil defendant's liability ("he admitted on the recording that he caused the accident") provokes a guilty plea or a settlement. Hence, the case is resolved in those situations and no appeal is taken. And, consequently, the video evidence that is at issue in an appeal may be relatively more complex and contestable.

In any event, the number and complexity of appeals with digital evidence is surely on the rise.

II. OPERATIONAL ISSUES AND SOLUTIONS IN COPING WITH THE APPELLATE DIGITAL DELUGE

This "Digital Deluge" of video- and audio-recorded evidence presents major operational issues for appellate courts. Those operational concerns include such things as submission and access issues; storage and handling issues; incomplete information about the recordings' dates, times, sources, and places of origin; omitted or unhelpful references in briefs; enhancement issues; untranscribed audio tracks and transcript discrepancies; and issues concerning delegation of review.

Here are several dimensions of those issues.

A. Submission and Access

It is not this author's intention, nor his expertise, to suggest uniform technological requirements for submitting digital evidence on appeal.[58] Nonetheless, the author respectfully suggests that specific requirements adopted by an appellate court should be attentive to four general goals: (1) ease of submission, (2) ease of access by court users,[59] (3) affordable file conversion and storage costs, and (4) durability.

---

58. Indeed, if the author tried to do so in this article, the technological specifications would soon become obsolete, like court rules adopted in the 1980s that still refer to fax machines. *See, e.g.*, KAN. S. CT. R. 119; TEX. CT. APP. 2D DIST. R. 5; N.Y. UNIF. CIV. CT. R. § 202.5-a(a).

59. In some instances, such as digital evidence of pornographic recordings and other highly sensitive materials, access may be restricted to judges and a limited number of designated internal and external court users, pursuant to sealing orders. *See* IND. ACCESS CT. REC. R. 5(B)(11) (excluding from public access "[p]hotographs, film, video recordings, or other similar mediums showing a live individual's uncovered genitals, pubic area, buttocks, or female post-pubescent nipple"); *id.* 5(B)(12) (excluding from public access "[p]hotographs, film, video recordings, or other similar mediums showing a live individual engaging in or being subjected to sexual conduct"). At least one court adopted procedures for the internal use of visual evidence in child pornography cases. *See* NEB. CT. R. § 6-1801(A)(2) (providing that this type of evidence "shall be clearly and conspicuously identified" as such and "shall be placed in a separate sealed envelope or container"); NEB. CT. R. APP. P. § 2-116(B) (following provisions established in NEB. CT. R. § 6-1801).

Issues may also arise about whether the record should be sealed, or whether persons or organizations not involved in the appeal may have external access to the appellate record in general, including any digital evidence recordings. *See, e.g.*, ME. R. ELEC. CT. SYS. 4(B) (excluding from public access mental health civil commitment proceedings, medical malpractice screening panel proceedings, sterilization proceedings; proceedings for extreme weapon protection orders, HIV/AIDS testing proceedings, and minor settlement proceedings); N.J. CT. R. 1:38-3 (excluding from public access records relating to child victims of sexual assault or abuse, search warrants, names and addresses of domestic violence victims, records relating to

Optimally, appellate courts should promulgate technical specifications that standardize the formats of recordings when they are submitted for review on appeal. Those specifications should be periodically updated to keep pace with technological change. If feasible, the computerized docketing applications used at the trial court or agency level should be integrated, so that recordings are automatically accessible to all appellate tribunals within the same court system.

It is vital that video and audio recordings be filed with the appellate court in a way that enables judges and staff, as well as adversaries, to access the recordings in an efficient and convenient manner. The technology or format used for storing the digital evidence should be widely accessible without imposing undue burdens or expense. The court or opposing parties should not have to purchase any uncommon software application to view or listen to the recordings.

The recorded evidence should be accessible by multiple users (such as two or three appellate judges working in separate chambers, or a judge and a law clerk, or counsel) at the same time. Remote access to the recordings is similarly important, especially in times of a public health crisis such as COVID-19, when the number of persons who can be present within a courthouse is limited.

To date, the appellate rules of state and federal courts do not fully or uniformly specify such filing requirements. The jurisdictions that have adopted pertinent rules have wide-ranging requirements. Some of them call for the physical delivery of a CD, DVD, thumb drive, or other media storage device,[60] rather than providing a less cumbersome means for the digital evidence to be filed electronically.[61] A few of the state rules mandate that recordings be playable on specific software applications, such as MP3 format for audio files and MP4 format for video files.[62] Regardless of the software used, the recordings ought to be free of computer viruses or malware that could infect the court's files.

B. Staff Handling Burdens and Judicial Review Time

A practical consideration that burdens both appellate judges and staff is dealing with the sheer quantum of recordings presented as part of an appeal. When more recordings are filed with appeals, more staff time and resources must be expended in docketing and handling those digital exhibits. And judges must spend more time reviewing them.

Presumably, the advocates in the trial court or agency have exercised strategic judgment in prioritizing the recordings (or portions of them) to offer into evidence at a

---

marijuana offenses, records relating to family part proceedings, medical, psychiatric, and psychological records, drug dependency records, juvenile delinquency records, and records of civil commitment proceedings); N.M. R. APP. P. 12-314 (excluding from public access appeals in proceedings for HIV testing, appeals in proceedings to detain a person due to public health concerns, appeals in proceedings for abuse and neglect, appeals in proceedings for mental health and developmental disabilities, and appeals in proceedings related to outpatient treatment services).

60. *See, e.g.*, ARK. R. SUP. CT. R. 3-1(k); IND. R. APP. P. 29(B); IOWA R. ELEC. P. 16.412(7)(a)–(b); MISS. R. APP. P. 11(d)(1)(iii); NEB. CT. R. APP. P. § 2-105.02(C)(3)–(4).

61. *See, e.g.*, TECH. STANDARDS § 3 (TEX. JUD. COMM. ON INFO. TECH. 2021).

62. *See, e.g.*, CAL. R. CT. 8.74(a)(6)(B).

bench hearing or jury trial. For instance, events on a public street at a crime scene might be filmed by a host of surveillance cameras from many buildings and at varying heights and distances, but only a few of the recordings are clear enough to provide relevant visual information. The prosecutor or defense attorney at trial will be reluctant to bombard the jury or factfinder with extraneous footage. Rather, counsel would likely focus on the most probative and clear video segments.

Nevertheless, in some cases a party may want the appellate court to consider very lengthy or numerous recordings. If those recordings were not proffered or admitted into evidence below, the appellate court may rightly refuse to consider them because they are outside of the record. If, on the other hand, the voluminous recordings were all supplied to the trial court or agency and are thus part of the record (or proffered record[63]), the appellate court might need to consider taking measures to cope with that volume.

C. Some Measures To Address Staff Burdens and Assist in Judicial Review

1. Requiring the Designation of Dates, Times, Sources, and Places of Origin

One way to address these operational problems is to insist that the party presenting digital evidence designate—to the extent reasonably feasible—the dates, times, sources, and places at which each recording was created. These details will help the appellate judges readily know what they are looking at on the particular video or are hearing in the audio.

Sometimes the digital files supplied by counsel are labeled with nonsensical computer file names that are practically useless in identifying and locating their contents. As the author has experienced firsthand, this can stymie judicial review.

If the recording has a time counter displayed on or otherwise associated with it, the party referring to such evidence should disclose to what extent, if any, the displayed time may vary from the actual time of the events recorded. Possibly, the time shown on a video is inaccurate because the recording camera was incorrectly synced to the actual time or was affected by an intervening power failure or other cause. Requiring this corrective information is important to prevent misleading the court and opposing parties.

2. Mandating Pinpointed References in Briefs

If a brief on appeal discusses segments of video or audio evidence, it should cite with specificity the relevant time counters or other reference points. Otherwise, appellate judges can waste precious time trying to locate the critical spots being discussed in the brief. The briefs should pinpoint exactly what portions of the recordings the advocate wishes to have viewed or heard.

This obligation to pinpoint is essential because, unlike the written text of documents and trial transcripts, a recording cannot be as readily "skimmed."

63. *See, e.g.*, N.J. CT. R. 1.73 (regarding offers of proof and the need for a proponent to make a record of the evidence that the trial court has declined to admit).

Recordings often may have to be played in real time, perhaps repeatedly. Appellate judges do not have unlimited time to watch or listen to recordings. They must also devote their attention to the other evidence in the cases, the parties' briefs, and the applicable statutes and case law. So, the video evidence must be viewable easily and efficiently. Appellate review cannot be tantamount to the forced binge-watching of a television series.

If certain elements of the video are indisputable, counsel should be encouraged to stipulate to those elements to save the appellate judges' time. For instance, if a surveillance video clearly shows that no person entered the premises between 2:00 a.m. and 5:00 a.m., counsel should advise the court whether they concede that fact if it is relevant to the appeal.

3. Denoting Enhancements and Facilitating Comparisons with Original Versions

Sometimes, a recording has been enhanced by an advocate to aid the viewer or listener. A video may be played in slow motion, or an image on the video may be enlarged to create a close-up. If such enhancements are presented, it is often useful to also provide the court with a nonenhanced version of the recording for comparative purposes.

For instance, if the State charges a defendant with resisting arrest, or the defendant contends the officer used excessive force, a slow-motion recording of the interaction between the officer and the defendant might not fairly depict what they each personally experienced at the scene in real time. Similarly, in a slip-and-fall case, a magnification of a surveillance video showing a foreign object or puddle on the floor of a retail store may be deceptive by not accurately showing how large or obvious the hazard actually appeared to the store employees when viewed from a normal distance.

The appellate court should be informed of the nature and extent of such visual enhancements. The court should have the opportunity to compare the enhanced version with the original, if it wishes to do so.

4. Requiring Transcribed Audio Tracks of Videos

A point of operational concern that arises more often for appellate courts is the prevalent use of police dashcams and bodycams that have both a video component and an audio track. Although the audio track sometimes is indistinct or incomplete, it may contain important conversations that took place at the scene between the police officers and the defendant or other persons. If the parties dispute what was said, the appellate court should be supplied with a transcript of the audio track, prepared by a court-designated neutral transcriber.

The transcript of the in-court proceedings might not always contain a transcription of the exhibit's audio track. Or the audio transcript might be of inferior quality because it was prepared from a "second-generation" recording (i.e., one created in court derived from another recorded source played in court). If the video was not played in open court and was instead viewed by a trial judge in chambers as part of a motion record, the audio portion may not have been transcribed at all. Even if it was, the audio track may contain ambiguities. The words spoken (e.g., did the person say "could" or

"would" or "should"?) or who was speaking at a particular moment (e.g., was it a backup officer or was it a passenger in the stopped vehicle?), may be unclear on the audio track.[64]

A professional transcriber is likely better skilled at deciphering what a judge may consider indiscernible or understanding a speaker's thick accent. Further, the audio track may require an interpreter's services when speakers are communicating in a language other than English (e.g., a stopped motorist conversing with a passenger).

Given this variety of scenarios, if what was said on the audio track is relevant to the appeal, it is preferable that it be transcribed for the benefit of the appellate panel and counsel.

5. Imposing Presumptive Overall Recording Duration Limits

For unusual cases in which especially voluminous recordings were provided to the trial court or agency, the appellate court may wish to consider imposing presumptive limits on the duration of recordings presented on appeal.[65] Such duration limits may be analogized to page or word limits for appellate briefs.

All state and federal appellate courts have rules limiting the length of briefs that parties may submit, by either page limits or word counts.[66] These rules often allow

64. The New Jersey Supreme Court encountered this very issue in *State v. Miranda*, 292 A.3d 473, 476 n.1 (N.J. 2023). During oral argument before the court, counsel for both the State and the defendant "acknowledged discrepancies between conversations recorded on the police bodycam video and the transcript of those conversations that was created after the video was played in the courtroom at the suppression hearing." *Id.* The court "ordered a limited remand, directing the parties to agree on revisions to the transcript to the extent possible." *Id.* The court relied on this revised transcript in its ultimate opinion. *Id.*

65. This has not yet become a critical problem in the author's own appellate court, as we only occasionally have lengthy digital recordings, or we are provided with multiple recordings taken from a variety of locations and camera angles. Even so, with the proliferation of recordings generated in society at large, and the ubiquitous placement of outdoor surveillances cameras mounted on buildings and utility poles, it is not far-fetched to imagine that courts will soon be swamped with lengthy recordings. *See* Bennett Capers, *Policing, Technology, and Doctrinal Assists*, 69 FLA. L. REV. 723, 740 (2017).

66. With respect to limits on merits briefs filed by appellants (disregarding miscellaneous exceptions for certain case categories), *see, e.g.*, SUP. CT. R. 33(g)(v) (13,000 words); FED. R. APP. P. 32(a)(7) (30 pages, but subject to local circuit court rules); ALASKA R. APP. P. 212(c)(4) (50 pages); ARIZ. R. CIV. APP. P. 14(a)(1) (14,000 words); ARIZ. R. CRIM. P. 31.12 (14,000 words); ARK. R. SUP. CT. & CT. APP. 4-2(d)(1) (8,600 words); CAL. R. CT. 8.360(b)(1) (25,500 words) (criminal); CAL. R. CT. 8.204(C) (14,000 words) (civil); COLO. R. APP. P. 28(g) (9,500 words); CONN. R. APP. P. § 67-3A (13,500 words); DEL. R. SUP. CT. 14(d)(i) (10,000 words); D.C. R. APP. CT. 32(a)(6) (50 pages); FLA. R. APP. P. 9.210(a)(5)(B) (50 pages); GA. CT. APP. R. 24(f) (14,000 words criminal or 8,400 words civil); HAW. R. APP. P. 28(a) (35 pages); IDAHO APP. R. 34(b) (50 pages); ILL. SUP. CT. R. 341(b)(1) (50 pages or 15,000 words); IND. R. APP. P. 44(D), (E) (30 pages or 14,000 words); IOWA R. APP. P. 6.903(g)(1), (3) (14,000 words typed or 50 pages handwritten); KAN. R. APP. P. 6.07(c)(1) (50 pages); KY. R. APP. P. 31(G) (20 pages); LA. UNIF. R. CT. APP. 2-12.2(C)(1) (31 pages); ME. R. APP. P. 7A(f)(1) (40 pages or 10,000 words, whichever is greater); MD. R. REV. CT. APP. & SPEC. APP. 8-503(d)(1) (13,000 words); MASS. R. APP. P. 20(a)(2)(A) (50 pages or 11,000 words); MICH. CT. R. 7.212(B) (50 pages); MINN. R. CIV. APP. P. 132.01(3)(a)(1) (45 pages or 14,000 words); MINN. R. CRIM. P. 28.02(10) (adopting civil page limit for criminal briefs); MISS. R. APP. P. 28(h) (50 pages); MO. R. CIV. P. 84.06(b) (31,000 words); MO. R. CRIM. P. 30 (adopting civil page limit for criminal briefs); MONT. R. APP. P. 11(4)(a) (10,000 words); NEB. CT. R. APP. P. § 2-103(C)(3)(a) (15,000 words); NEV. R. APP. P. 32(a)(7)(A)(i) (30 pages); N.H. SUP. CT. R. 16(11) (9,500 words); N.J. CT. R. 2:6-7 (50 pages); N.M. R. APP. P. 12-318(F)(2) (35

parties to request the appellate court's permission to exceed these limits on a showing of good cause or special justification.[67] In addition, three states appear to limit the length of the appendices that accompany briefs.[68]

If appellate courts become overwhelmed by the quantum of digital evidence presented by the parties, a court rule or policy imposing reasonable time limitations may be beneficial.

6. Prudently Delegating Preliminary Review Tasks to Law Clerks and Other Court Staff

Another way to reduce the time that judges spend watching and listening to recorded evidence is by delegating the initial responsibility to perform that task to law clerks or other court staff. The delegated employee might preview the recording in real time. Thereafter, the employee can advise the judge on what the recording contains, or what particular segments of the recording appear to be most relevant. The judge can then watch or listen to only the critical segments. Many appellate judges organize their workflow this way.[69] A potential drawback of such delegation is that the appellate judge may overlook other relevant segments of the digital evidence that the employee has not called to the judge's attention.

The portions of the recording selected for the judge to watch or listen to as "highlights" should not be skewed or out of context.[70] For example, consider a video of a five-hour police interrogation of a suspect, as to which the suspect contends the police wore him down to the point of fatigue and caused him to confess. If the clerk or staff attorney watches the entire five hours from start to finish, but only cues up the final thirty seconds for the judge to watch, the judge may not gain a fulsome appreciation of the suspect's long and tiring experience. In that instance, it might be

---

pages); 22 N.Y. APP. CT. R. PRAC. 500.13(c)(1), (2) (14,000 words typed or 35 pages); N.C. R. APP. P. 28(j) (8,750 words); N.D. R. App. P. 32(8)(A) (38 pages); OHIO R. APP. P. 19(A) (9,000 words or 30 pages, but subject to local court rules); OKLA. SUP. CT. R. 1.11(b) (30 pages) (civil); OKLA. CT. CRIM. APP. R. 3.5(D) (50 pages); OR. R. APP. P. 5.05(1)(b)(ii)(A) (10,000 words); 210 PA. CODE R. 2135(a)(1) (14,000 words); R.I. SUP. CT. R. 16(f) (15,000 words typed or 50 pages handwritten); S.C. APP. CT. R. 208(b)(5) (50 pages); S.D. CODIFIED LAWS § 15-26A-66(a) (West 2023) (40 pages) (civil); S.D. CODIFIED LAWS § 23A-32-3 (West 2023) (adopting civil page limit for criminal briefs); TENN. R. APP. P. 30(e) (15,000 words); TEX. R. APP. P. 9.4(i)(2)(B) (15,000 words typed or 50 pages handwritten); UTAH R. APP. P. 24(g)(1) (30 pages or 14,000 words); VT. R. APP. P. 32(a)(4)(A)(i) (9,000 words); VA. R. SUP. CT. 5A:19(a) (50 pages or 12,300 words); WASH. R. APP. P. 18.17(c)(2) (12,000 typed or 50 pages handwritten); W. VA. R. APP. P. 38(c) (40 pages); WIS. STAT. § 809.19(8)(c)(1) (West 2023) (50 pages or 11,000 words); WYO. R. APP. P. 7.05(a)(1) (60 pages).

67. *See, e.g.*, S. CT. R. 33(1)(d); ALASKA R. APP. P. 212(c)(4); GA. CT. APP. R. 24(f)(1); ME. R. APP. P. 7A(f)(1); N.J. CT. R. 2:6-7; UTAH R. APP. P. 24(h).

68. *See, e.g.*, CAL. R. CT. 8.204(d) (10 pages); MINN. R. CIV. APP. P. 130.02(b) (50 pages); OR. R. APP. P. 5.05(1)(e) (25 pages).

69. Two of the Second Circuit judges in *Arnstein v. Porter* involved their chambers' staffs in reviewing the recordings in that appeal. *See infra* Part III.C.

70. *See* FED. R. EVID. 106 ("If a party introduces all or part of a writing or recorded statement, an adverse party may require the introduction, at that time, of any other part—or any other writing or recorded statement—that in fairness ought to be considered at the same time.").

more representative for the judge to see periodic excerpts of the footage and observe how the suspect appeared at various points in time.

Furthermore, the law clerk or staff attorney, despite good faith, might have an implicit bias about what that employee chooses to show to the judge. Or, regardless of any bias, the clerk or attorney may inaccurately advise the judge that the recording is uninformative when it actually may contain pertinent information.[71]

To guard against incompleteness, the appellate court may wish to adopt policies or practices that require, if feasible, the judicial employee to watch or listen to the entire set of recordings in evidence or, at the very least, to review all portions of the recordings that are discussed in the parties' briefs. Individual judges may adopt their own delegation customs and expectations, just as judges commonly do when guiding law clerks and staff attorneys about the boundaries and depth of the assigned research on a particular appeal.

By adhering to sensible best practices, the time concerns of the hypothetical appellate judge described in the opening vignette[72] can be managed through appropriate delegation of review tasks to law clerks and staff attorneys, under proper supervision.

D. A Suggested Model Rule

To address these and other operational concerns, courts might consider adopting formal rules to channel and better facilitate the presentation of video- and audio-recorded evidence on appeal. At present, no federal or state appellate court has such a comprehensive rule.

To be sure, some measures to cope with the "Appellate Digital Deluge" (such as internal court practices) might be best undertaken informally without a court rule. Even so, the author submits that detailed and comprehensive appellate rules for dealing with digital evidence could be useful.

A Model Rule that might prove beneficial could provide as follows:

---

71. Professor Stephen L. Wasby has acknowledged the critiques of delegating tasks from a judge to his clerk but instead viewed this delegation as "important," "functional," and "unavoidable" due to the judge's volume of work. Stephen L. Wasby, *The World of Law Clerks: Tasks, Utilization, Reliance, and Influence*, 98 MARQ. L. REV. 111, 120 (2014). Professor Wasby considers a judge's delegation of tasks to a law clerk or staff attorney as a natural process, akin to the delegation by decision-makers in the private sector to staff members (from supervisor to employee). *Id.* Additionally, he recognizes the possible "influence" that law clerks may have upon their judges, mainly by sharing different perspectives, but notes that the degree of such influence depends on the judge. *Id.* at 122–26. In any event, no published case or article has found that an appellate judge erred by delegating the preliminary screening of video and audio evidence to a law clerk or staff attorney. In this author's personal experience, preliminary screening of videos by his law clerks and staff attorneys has been enormously helpful.

72. *See supra* Introduction.

Figure #1: Model Rule of Appellate Procedure (Video- or Audio-Recorded Evidence)
(a) Definition. For the purposes of this rule, video- or audio-recorded evidence is defined as a video or audio recording that was presented below to the trial court or administrative agency in connection with a motion, trial, or other evidentiary proceeding and moved into evidence or, alternatively, proffered to but excluded by the court or agency.
(b) Presentation on Appeal. All video- or audio-recorded evidence shall be filed with the appeals court in a technological format that is compatible with the specifications of the appellate court clerk's office as posted on the court's website. Failure to comply with such formatting requirements may result in the appellate court disregarding the evidence.
(c) Dates, Times, Sources, and Places of Creation. All video- or audio-recorded evidence submitted on appeal shall designate, to the extent reasonably feasible, the date, time, source, and place where each such recording was created. The party referring to the recording shall identify the exhibit number(s) or digital file(s) corresponding to each such item of evidence. If time counters are displayed on or otherwise associated with the recording, the party referring to such evidence shall indicate to what extent, if any, the displayed or indicated time varies from the actual time of the events recorded.
(d) Duration Limits. The total duration of all video- or audio-recorded evidence submitted on appeal shall not exceed __ hours, unless the court approves a longer period for good cause shown.
(e) References Within Briefs. To the extent reasonably feasible, briefs that refer to segments of video- or audio-recorded evidence shall cite with specificity to the relevant time counters, transcript cites, or other reference points, so as to enable the court and other parties to locate those segments readily.
(f) Corresponding Audio Track of Video-Recorded Evidence. If a video recording presented below has a corresponding audio track, the party referring to that video evidence on appeal shall obtain and provide to the court and the other parties a neutral stenographic transcript of the words spoken on that audio track, to the extent relevant and reasonably practicable.
(g) Enhancement. If a video or audio recording was enhanced by some method for or during the proceedings below, the party referring to that evidence shall additionally furnish on appeal, on request, a nonenhanced version of the recording.

The components of this suggested Model Rule correspond with the points covered in the preceding discussion. Section (a) of the Model Rule sets forth a broad definition of video- and audio-recorded evidence, sometimes loosely termed "digital" evidence because the recordings are often stored in digital form.

Section (b) of the Model Rule requires parties on appeal to submit video- and audio-recorded evidence in a format consistent with the court's technological requirements. Because the technology is constantly evolving, this Article proposes that

the requirements be posted on the court's website, which can easily be revised and made known to users.

Section (c) of the Model Rule imposes an obligation on the filer to provide the appellate court with the dates, times, sources, and places at which the video or audio recording was created. As an example, in conformity with this provision, the video might be labeled "Video of Surveillance Camera at Front Entrance of Joe's Bar & Grill, 123 Main Street, Anytown, U.S.A., from 1:13 a.m. to 1:46 a.m., on June 27, 2022, marked as Exhibit S-27, and played for the trial court on February 11, 2023."

Next, if a jurisdiction deems it advisable, section (d) of the Model Rule sets forth a presumptive total time limit for all video and audio recordings supplied on appeal, subject to enlargement for good cause shown. This optional provision should incentivize counsel to be selective in choosing which portions of the digital evidence they believe critical to be considered by the appellate judges, just as page limits for briefs promote such prioritization.

Section (e) of the Model Rule requires the parties on appeal to cite with specificity the relevant time counters or other reference points on the recordings. This will aid the court in focusing on the critical places in the recorded material that most warrant the court's time and attention. If the time displayed on the recording varies from the actual time, the parties should advise the court of the needed adjustment.

Next, section (f) of the Model Rule mandates the parties on appeal to provide a neutrally created transcript of the audio portion of a video recording, to the extent reasonably feasible and relevant. As discussed above, this will be especially valuable in criminal cases and civil rights cases in which interactions between police officers and civilians outside of a police station have been filmed with an audio track component.[73]

Lastly, section (g) of the Model Rule addresses recordings that have been enhanced in some fashion. It requires parties to supply the appellate court, on request, with a nonenhanced version of the film or audio. This requirement lessens the risks that the appellate court will be considering a misleading or skewed version of the original recording, because the judges can compare the original version to the enhanced or altered one.

III. STRENGTHS AND WEAKNESSES OF DIGITAL EVIDENCE AND APPROPRIATE STANDARDS OF APPELLATE REVIEW

Apart from these operational concerns, the proliferation of digitally recorded evidence can have profound effects upon the manner in which appellate courts customarily review findings of fact made by trial courts and administrative agencies.

If digital evidence, which literally can be seen or heard, is consistent with the trier of fact's findings, that evidence helpfully reinforces the correctness of the factfinding. Such confirmatory proof strengthens the appellate court's impetus to affirm the findings.

More difficult questions of review arise when the recordings clash with those findings. Recall, in this regard, the hypothetical dashcam scenario described at the

73. *See supra* Part II.C.4.

outset of this Article involving a video of a police officer's motor vehicle stop that, when viewed on appeal, seems to conflict with the factual findings of the court or agency below.[74]

This Section therefore addresses the considerations and standards of review traditionally used by appellate courts to ascertain if the tribunal below erred and, if so, if the error was consequential or harmless. As a preface to that discussion, one should consider the potential probative advantages of digital evidence, and also its pitfalls. For the sake of brevity, the discussion that follows will be mainly about video recordings.

A. The Probative Value of Video- and Audio-Recorded Evidence, and Its Pitfalls

Video-recorded evidence, in essence, is akin to photographic evidence set in motion. As noted in Section I of this Article, still photographs have been used as exhibits in litigation since the nineteenth century. It has been commonplace for juries and judges to be provided with photos of accident scenes, crime scenes, streetscapes, aerial views of property, mug shots, eyewitness identification arrays, autopsies, weapons, and many other sorts of places, persons, and objects.

Testifying witnesses have long been shown photos while on the witness stand and asked to authenticate them and explain what they show. As a rule of thumb, such photos are not admissible in evidence unless they fairly and accurately depict the place, person, or object in question.[75] A similar kind of foundation is needed for video recordings.[76]

The author's experience is that, until recently, it has been less common for a party to play a video recording than to present photographs to a trier of fact, except for staged proceedings such as a *de bene esse* (videotaped) deposition of a witness who is unable to appear in person for the trial or hearing. Some courtrooms were not equipped with television screens or monitors that would readily enable jurors or judges to watch the videos. Sometimes wheeled into the courtroom for temporary use, the screen size of such equipment could be rather small, and the sound quality less than ideal. Most trials took place without any video to watch.

---

74. *See supra* Introduction.

75. *See, e.g.*, FED. R. EVID. 901 (requiring only a rational foundation to infer that a proffered item of evidence is authentic); *see also* 44 AM. JUR. *Trials* 171, § 59 ("By the late 1960s, about ten years after the judicial system's first acceptance of videotape evidence, the critical foundation requirement for motion pictures had already become a witness's testimony that the videotape was a fair and accurate portrayal of what had happened."); Paramore v. State, 229 So. 2d 855, 859 (Fla. 1969) (applying the standard for admissibility of photographs "with equal force to the admission of motion pictures and video tapes"), *vacated in part,* 408 U.S. 935 (1972).

76. *Foundation for Contemporaneous Videotape Evidence*, 16 AM. JUR. 3D *Proof of Facts* 493, § 1 (1992) ("[B]ased at least in part on the legal system's growing familiarity with and acceptance of videotape evidence[] [there has been] a loosening of standards with respect to admissibility and foundation requirements. No longer is videotape evidence seen only as nonsubstantive, demonstrative evidence that is merely the visual representation or the 'pictorial communication' of the testimony of a percipient witness; no longer are the strict foundation requirements that evolved over time with respect to photographs, silent motion pictures, tape recordings, and sound motion pictures always applied. Instead, the laying of a sufficient foundation for admissibility has generally boiled down to one inquiry: Is there a witness, percipient or not, able to testify that what appears on the videotape is a fair, accurate, and authentic representation of what actually happened?").

That is no longer true. The capacity to present video during trials has vastly improved. Today, many courtrooms are equipped with large video screens with higher-quality sound amplifiers. In some courtrooms, the jurors each have personal video monitors. The necessity of conducting remote or hybrid proceedings during the COVID-19 pandemic has accelerated the effort to enable counsel and parties to easily present evidence through video technology.

At the same time, as noted in Section I, the volume and frequency of video-recorded events in society have exponentially increased. In any criminal, civil, or family law case, there can be considerable digital evidence to present.

So, what exactly is the probative value of all of this recorded evidence? The short answer is that it can vary widely.

1. Some Probative Advantages of Recorded Evidence

Video-recorded evidence offers a host of potential probative advantages. Perhaps its most salient characteristic is that such video proof is dynamic, not static. Unlike a still photograph, a video recording shows the continuous movement of people and objects through space.

For instance, surveillance footage recorded inside a bank can show a robber enter the lobby, walk up to a teller, brandish a weapon, gesture at the teller, stuff currency into a bag, and run out of the bank. The filmed continuous action is more vivid and probative than still photos of the scene. The footage can be far more definitive and reliable than the testimony of eyewitnesses in the bank who saw the events and later attempted to recall and describe what had transpired.[77]

As noted earlier, another benefit of video-recorded evidence is the capacity to start and stop it, slow it down, speed it up, and play it over and over again. To be sure, a still photograph also can be inspected multiple times or viewed through a magnifying glass. But a video offers a richer array of possibilities. Further, unlike the spoken words of a testifying witness, the video might be shown more than once during the proceedings. During deliberations, a jury may request the playback of recordings that were admitted in evidence.[78] In addition, a judge might wish to view or listen to the recording evidence repeatedly, in chambers.

---

77. As the Texas Supreme Court has observed in this regard:

> If, as it is often said, a picture is worth a thousand words, then a video is worth exponentially more. Images have tremendous power to persuade, both in showing the truth and distorting it. A video can be the single most compelling piece of evidence in a case, captivating the jury's attention like no other evidence could. Video can often convey what an oral description cannot—demeanor, personality, expressions, and motion, to name a few.

Diamond Offshore Servs. Ltd. v. Williams, 542 S.W.3d 539, 542 (Tex. 2018) (footnotes omitted).

78. State v. Miller, 13 A.3d 873, 880 (N.J. 2011) (finding that the trial court did not abuse its discretion in permitting the playback of video evidence to a jury upon the jury's request, under the "basic principle[]" that "juries should be provided with the best available form of evidence, upon request, unless there is a sufficiently strong, countervailing reason not to proceed in that way[,] [which] [i]n the digital age . . . means presumptively providing video playbacks in favor of read-backs"); Louidor v. State, 162 So. 3d 305, 311 (Fla. Dist. Ct. App. 2015) (finding that while admission of a video recording in which police officers gave opinions as to murder defendant's guilt was error, the error was invited by defense, and therefore any claim of

2. Some Probative Disadvantages of Recorded Evidence

That said, there are several probative drawbacks to video-recorded evidence. Some of these also exist for still photographs (such as poor lighting, distance, clarity, and skewed viewpoint). Without cataloging the drawbacks exhaustively here, several are worth mentioning.

Poor Lighting. Just like a still photograph, a video might be filmed at an unexpected time or place, with no opportunity to arrange proper lighting. The images on the screen may not be illuminated well enough to discern what or who they are. Or a portion of the screen may be well lit, while other areas are not. Computer applications used to enhance the brightness of the images may be inadequate. A badly lit video may be worthless as evidence.

Distance. The distance of the camera from the subject of the video can surely diminish probative value. Even if a zoom or close-up feature is used to magnify the images, that process still might not enable the critical elements in the shot to be discerned.

Clarity of Image. A related problem arises when the video is blurry.[79] That blurriness may be a function of distance or lighting, or may be caused by other factors, such as an unsteady camera. A blurry image may be especially common with videos captured with smartphones by onlookers in public spaces.

Camera Angles and Viewpoint. The camera angle of a video may omit persons or objects that were present in the same room or space at the relevant time and are important to the narrative. For instance, if the video excludes a companion of the defendant at the scene who allegedly had her gun drawn, that omission might give a jury a misleading impression that the investigating officer was not in mortal fear. Researchers have also noted that a video created on a bodycam from the viewpoint of a police officer leaning into a car might look very different—and create different impressions by a viewer—than a video taken from the vantage point of the motorist looking out at the officer through the window from the driver's seat.[80]

When the Recording Starts and Ends. What Occurred Before and After. By itself, a video may not tell the complete story. A video may have less value depending upon when it starts and ends. A video showing a suspect resisting arrest, or a police officer inflicting force, may not begin until after the precipitating events had already occurred off camera. Likewise, the recording may end too soon, before other important events transpired.

---

fundamental error was waived, where defense counsel stipulated to admission and playback of video and affirmatively relied on the video throughout trial).

79. *See* Jennifer L. Mnookin, *Semi-Legibility and Visual Evidence: An Initial Exploration*, 10 L., CULTURE, & HUMANS. 43, 43 (2012) (denoting as "semi-legible" visual evidence such things as blurry images, interpretively ambiguous images, "jigsaw" images in which an important piece is missing, images semi-legible to lay people but not experts, and images semi-legible even to experts).

80. *See, e.g.*, Aaron M. Williams, *The Noisy Silent Witness: The Misperception and Misuse of Criminal Video Evidence*, 94 IND. L.J. 1651 (2019) (highlighting the camera perspective bias, racial salience, and other effects of selective attention, as well as bodycam perspective effects, *CSI* effects and inferences from the absence of video, slow motion, replay effects, limitations of technology, and the need for judicial scrutiny).

Breaks or Gaps in the Recording. A related concern arises when the recording has breaks or gaps that omit pertinent events. These disruptions can be a result of a temporary power outage, an inadvertent shutoff, or a malfunction with the recording equipment. A more nefarious situation might occur where, hypothetically, the camera has been deliberately turned off for the purpose of concealing improper conduct, such as during an interrogation or a prison cell search. Regardless of whether the gaps are accidental or intentional, it can be misleading to provide the trier of fact with incomplete, noncontinuous footage.

Uncertain Identities of Persons or Voices on the Video. If the identity of a person on the video is unknown or disputed, the recording's probative value may be greatly diminished. At times, the prosecution in a criminal case may call a detective to the stand to "narrate" the video, an exercise that can be unfairly prejudicial if, for example, the detective refers to the person on the film as "the defendant."[81]

Shortcomings of the Audio Track. As discussed above, a video recording may contain an audio track that is incomplete, indiscernible, or otherwise deficient.[82] Or the audio track may contain inflammatory or highly prejudicial statements that detract from a fair consideration of the activities on the screen. Although the audio portion can often provide an additional evidential benefit apart from the video footage, that may not always be true.

Possible Overshadowing of the Unrecorded Evidence. A final drawback to mention is the potential for video recordings to skew how triers of fact, particularly laypersons serving on juries, consider the evidence as a whole. In a world and era when civilians are accustomed to having so much of life captured on film and posted incessantly on social media, there is a danger that jurors might give too much weight to the video evidence and pay inadequate attention to the remaining proof. This tendency might be addressed, to some extent, through the court's jury instruction, "be sure to consider the evidence as a whole," although the efficacy of such admonitions is unclear.

Many of the points raised here concerning video evidence can pertain to audio recordings as well. Audio recordings, such as voicemail messages, may be garbled, incomplete, taken out of context, unidentified, or otherwise problematic. On appeal, the same limitations may become significant to appraising the trial record and findings of fact.

B. The Scope of Review: Traditional Deference to the Trier of Fact

Traditionally, appellate courts have followed a policy of affording considerable deference to the factfinder who heard the case below, whether it be a jury at trial, a judge in a nonjury proceeding, or a hearing officer of an administrative agency.[83] Video evidence complicates this traditional approach.

---

81. *See, e.g.*, State v. Singh, 243 A.3d 662, 672 (N.J. 2021) (finding improper a detective's multiple references to the person shown on the video as "the defendant" while narrating surveillance footage for jurors).

82. *See supra* Part II.C.4.

83. *See, e.g.*, FED. R. CIV. P. 52(a)(6) ("Findings of fact, whether based on oral or other evidence, must not be set aside unless clearly erroneous, and the reviewing court must give due regard to the trial court's

This tradition of deference largely derives from the ability of the trier of fact to evaluate the credibility of witnesses who testify at the proceeding. By hearing and seeing those witnesses firsthand, the trier of fact presumably has a unique opportunity to assess the truthfulness and reliability of their factual accounts. In addition, the adversarial technique of cross-examination by the opposing side has been long regarded as "the greatest legal engine ever invented for the discovery of truth."[84]

The methods used by judges, jurors, and hearing officers to evaluate credibility are numerous, if not necessarily scientifically based. Model instructions in criminal and civil cases typically advise jurors to consider such things as the witness's overall demeanor; accuracy of recollection; depth and means of personal knowledge; powers of discernment; apparent candor; any prior inconsistent statements; any potential interest in the outcome of the case or other possible biases; any prior criminal convictions of the witness; the extent to which the witness's testimony is corroborated or contradicted by other evidence; and the reasonableness of the witness's testimony.[85]

Case law is replete with explanations of why appellate courts routinely defer to the findings of the trier of fact. For one thing, the trier of fact has the ability to assess directly the demeanor of witnesses as they testify in real time. At times, a presiding trial judge can pose (or, in some jurisdictions, the jurors may suggest[86]) questions to the witnesses to clarify or further explore their testimony. Additionally, the trier of fact has

opportunity to judge the witnesses' credibility."); *see also* ARK. R. CIV. P. 52; Ind. R. Trial P. 52(A); GA. CODE ANN. § 9-11-52(a) (West 2023); ME. R. CIV. P. 52(c); MINN. R. CIV. P. 52.01; UTAH R. CIV. P. 52(a)(4).

84. California v. Green, 399 U.S. 149, 158 (1970) (quoting WIGMORE, *supra* note 23, § 1367).

85. *See, e.g.*, N.J. MODEL CIV. JURY CHARGE § 1.12L Credibility (1998); N.J. MODEL CRIM. JURY CHARGE, FINAL CHARGE, General Information to Credibility of Witnesses (2022); United States v. Abel, 469 U.S. 45, 51–53 (1984) (regarding the impeachment of a witness on bias grounds); Justice v. Hoke, 45 F.3d 33, 35 (2d Cir. 1995) ("While the importance of witness credibility may be enhanced in a case involving only two witnesses, it does not follow that simply because a jury finds one witness to be generally believable, it will resolve all factual disputes in accordance with the testimony of that witness. Other factors, such as the witness' perception and memory of a specific incident, as well as a common sense [sic] assessment of inconsistent evidence, may lead a jury to reject the testimony of even a generally credible witness."); FED. R. EVID. 609 (regarding the impeachment of a witness with eligible prior criminal convictions); Weeks v. State, 729 S.E.2d 570, 574 (Ga. Ct. App. 2012) ("[Factfinders] may consider all of the facts and circumstances of the cases, the manner in which the witnesses testify, their interest or lack of interest in the case, their means and opportunity for knowing the facts about which they testify, the nature of the facts about which they testify, the probability or improbability of their testimony, and the occurrences about which they testify. You may also consider their personal credibility insofar as it may have been shown in your presence and by the evidence." (quoting 2 COUNCIL SUP. CT. J. OF GA., SUGGESTED PATTERN JURY INSTRUCTIONS: CRIMINAL CASES 6 (4th ed. 2021) (jury charge 1.31.10))); State v. Allen, 706 A.2d 220, 223–24 (N.J. Super. Ct. App. Div. 1998) (finding a jury instruction on credibility inadequate, particularly compared with the model charge, where all that was stated was "[i]f you believe any witness or party wil[l]fully or knowingly testified falsely to any material fact in the case with an intent to deceive you, you may give such weight to his or her testimony as you deem it is entitled[;] [y]ou may believe some of it, or you may in your discretion disregard all of it").

86. *See, e.g.*, N.H. R. CRIM. P. 23(b) (allowing optional proposed juror questions for witnesses in the court's discretion in criminal trials); N.J. CT. R. 1:8-8(d) (same for civil trials); OHIO R. CRIM. P. 24(J) (same for criminal trials); UTAH R. CIV. P. 47(j) (same for civil trials).

the responsibility to consider the testimony in the full context of the other evidence, whether it be testimonial, documentary, or tangible.[87]

As the United States Supreme Court explained in *Anderson v. City of Bessemer*:

> The rationale for deference to the original finder of fact is not limited to the superiority of the trial judge's position to make determinations of credibility. The trial judge's major role is the determination of fact, and with experience in fulfilling that role comes expertise. Duplication of the trial judge's efforts in the court of appeals would very likely contribute only negligibly to the accuracy of fact determination at a huge cost in diversion of judicial resources. In addition, the parties to a case on appeal have already been forced to concentrate their energies and resources on persuading the trial judge that their account of the facts is the correct one; requiring them to persuade three more judges at the appellate level is requiring too much. As the Court has stated in a different context, *the trial on the merits should be "the 'main event' . . . rather than a 'tryout on the road*.'" For these reasons, review of factual findings under the clearly-erroneous standard—with its deference to the trier of fact—is the rule, not the exception.[88]

This passage underscores the critical structural importance of the trial court or agency's role as the finder of facts. It would be inefficient and disruptive if appellate courts overturned factual findings with great frequency. Such excessive reversals would undermine the utility of trials as well as public confidence in trial courts and juries. Trials are not dress rehearsals.

In addition, as the Justices stated in *Anderson*, the daily tasks of trial judges give them the highly valued expertise that is needed to sift through the evidence as a whole. We customarily ascribe importance to a trial judge's "feel for the case," particularly if the judge has managed the case on a continual basis for a long period of time through the pretrial or prehearing phases.[89]

---

87. Sometimes the trier of fact can gain insight by observing the parties or witnesses in the courtroom at moments when they are not testifying. For instance, did the alleged victim of domestic violence appear to be trembling when the defendant entered the courtroom and took a seat? Did the plaintiff in a personal injury case claiming a lack of mobility limp when walking in and out of the courtroom? Did the litigant gesture or grimace when a witness for the opposing side took the stand?

In this vein, the author once presided over a jury trial of a medical malpractice case in which the plaintiff claimed he could no longer raise his arm or dress himself. During the midst of that trial, the fire alarm went off and everyone quickly evacuated the courtroom. In closing argument a few days later, the astute defense attorney asked the jurors if they had seen the plaintiff, without assistance, put on his coat as he dashed out of the courtroom. Several jurors nodded in agreement that they, too, had seen the same thing.

88. 470 U.S. 564, 575 (1985) (omission in original) (emphasis added) (citation omitted) (quoting Wainwright v. Sykes, 433 U.S. 72, 90 (1977)).

89. United States v. Rivera, 994 F.2d 942, 951–52 (1st Cir. 1993) (discussing, in the federal criminal sentencing context, the "district court's unique vantage point" and "special competence in making . . . [a] determination" that certain departures from the sentencing guidelines are appropriate, which appellate courts should review with "full awareness of, and respect for, the trier's superior feel for the case" (internal quotation marks omitted) (quoting United States v. Diaz-Villafane, 874 F.2d 43, 50 (1st Cir. 1989))); *accord* United States v. Kingston, 249 F.3d 740, 743 (8th Cir. 2001); Jastram *ex rel.* Jastram v. Kruse, 962 A.2d 503, 512 (N.J. 2008) ("The 'feel of the case' is not just an empty shibboleth—it is the trial judge who sees and hears the witnesses and the attorneys, and who has a first-hand opportunity to assess their believability and their effect

The trial judge often gets to know the case more deeply as it proceeds through discovery or pretrial motion practice. The judge may have learned much about the key documentary evidence, the parties, the surrounding events, and other contextual information that bears upon the case. Having gained that insight, the judge often has an advantage when witnesses take the stand in appreciating how their narratives fit (or don't fit) into the larger picture.

A key part of that on-the-ground judicial role is evaluating witness credibility. In its opinion in *Anderson*, the Court expounded upon that critical role:

> When findings are based on determinations regarding the credibility of witnesses, [Federal] Rule 52(a) [of Civil Procedure] demands even greater deference to the trial court's findings; for only the trial judge can be aware of the *variations in demeanor and tone of voice that bear so heavily on the listener's understanding of and belief in what is said.* This is not to suggest that the trial judge may insulate his findings from review by denominating them credibility determinations, for *factors other than demeanor and inflection go into the decision whether or not to believe a witness.* Documents or objective evidence may contradict the witness' story; or the story itself may be so internally inconsistent or implausible on its face that a reasonable factfinder would not credit it. Where such factors are present, the court of appeals may well find clear error even in a finding purportedly based on a credibility determination.[90]

In his article entitled *Demeanor Credibility*, James P. Timony, who at the time of publication was the Chief Administrative Law Judge of the Federal Trade Commission, observed that "[w]itnesses' demeanor has long been regarded as a primary 'method of ascertaining the truth and accuracy of their narratives.'"[91] As Judge Timony explained, demeanor generally includes a witness's "dress, attitude, behavior, manner, tone of voice, grimaces, gestures, and appearance. In other words, demeanor includes 'all matters which cold print does not preserve.' Assessment of demeanor, therefore, depends upon direct observation of the witness."[92] However, Judge Timony cautioned that demeanor "will never be an infallible method of determining the veracity of a witness."[93]

Although there is a long tradition of courts relying on demeanor observations in making credibility assessments, some research by social scientists and others has

---

on the jury."), *abrogated on other grounds by* Cuevas v. Wentworth Grp., 144 A.3d 890 (N.J. 2016), *holding modified by* Orientale v. Jennings, 218 A.3d 806 (N.J. 2019).

90. *Anderson*, 470 U.S. 564, 575 (1985) (emphases added) (citation omitted) (first citing Wainwright v. Witt, 469 U.S. 412 (1985); and then citing United States v. U.S. Gypsum Co., 333 U.S. 364, 396 (1948)).

91. James P. Timony, *Demeanor Credibility*, 49 CATH. U. L. REV. 903, 919 (2000).

92. *Id.* at 907 (footnote omitted) (some internal quotation marks omitted) (quoting Broad. Music, Inc. v. Havana Madrid Rest. Corp., 175 F.2d 77, 80 (2d Cir. 1949)).

93. *Id.* at 920. As the judge added, "It is inevitable that at times liars will convince juries and judges of their truthfulness, while honest witnesses nervously fail to convince. Irrespective of its potential pitfalls when analyzed with other factors, such as consistency and corroboration, demeanor evidence is still one of the best guides to judging a witness's credibility." *Id.* (footnote omitted).

challenged the reliability of those observations.[94] For one thing, the oft-stated bromide that "the witness didn't look me in eye and must have been lying" has been questioned by scholars who say that persons from certain cultures believe it disrespectful to do so, or that witnesses may have certain medical or physical conditions that make it difficult for them.[95] Others, on the other hand, have defended the traditional model. They contend that demeanor assessments still can be valuable, if not infallible.[96]

Traditionally, appellate courts have been confined to the words on the page of a "cold" transcript, whereas the trial court, jury, or hearing officer enjoys the benefit of a firsthand opportunity to experience the proofs as they unfold in a courtroom. Consequently, the prevailing view is that "[d]eference is necessary because a reviewing court, which analyzes only the transcripts . . . is not as well positioned as the trial court to make credibility determinations."[97]

The "merely a cold transcript" paradigm is changing with the proliferation of digitally recorded evidence. As discussed in Section II, the appellate record increasingly includes such video and audio recordings. Nowadays, the record often consists of much more than transcripts and written documents moved into evidence. The "cold" record has become warmer.[98]

---

94. *See, e.g.*, Daphne O'Regan, *Eying the Body: The Impact of Classical Rules for Demeanor Credibility, Bias, and the Need to Blind Legal Decision Makers*, 37 PACE L. REV. 379, 386 (2017) ("[D]emeanor credibility simply does not work. The belief that truth can be adequately detected, at least in a legal context, from the body, is largely false. . . . [T]here is no single verbal, nonverbal, or physiological cue uniquely related to deception." (quoting Aldert Vrij, *Nonverbal Communication and Deception*, *in* THE SAGE HANDBOOK OF NONVERBAL COMMUNICATION 341, 349 (Valerie Manusov & Miles L. Patterson eds., 2006))).

95. Gregory L. Ogden, *The Role of Demeanor Evidence in Determining Credibility of Witnesses in Fact Finding: The Views of ALJs*, 20 J. NAT'L ASS'N ADMIN. L. JUDGES 1, 3–4 (2000) ("Social science research casts significant doubt on the core assumption behind the weight given to demeanor evidence in making credibility determinations. Specifically, the psychological studies show that the non verbal [sic] cues associated with demeanor evidence [such as looking away or fidgeting] do not provide increased accuracy in making credibility determinations . . . ." (footnote omitted)); Carla L. MacLean & Itiel E. Dror, *A Primer on the Psychology of Cognitive Bias*, *in* BLINDING AS A SOLUTION TO BIAS: STRENGTHENING BIOMEDICAL SCIENCE, FORENSIC SCIENCE, AND LAW 13–21 (Christopher T. Robertson & Aaron S. Kesselheim eds. 2016).

96. *See* Timony, *supra* note 91, at 942–43 ("Modern empirical tests indicate that both [demeanor evidence and eyewitness testimony] may be imperfect but inevitable . . . . When other credibility factors do not appear in the record the judge must not shy away from the duty to decide on credibility based on the witness's demeanor."); Jeremy A. Blumenthal, *A Wipe of the Hands, a Lick of the Lips: The Validity of Demeanor Evidence in Assessing Witness Credibility*, 72 NEB. L. REV. 1157, 1189 (1993) (discussing demeanor in the context of social science); Olin Guy Wellborn III, *Demeanor*, 76 CORNELL L. REV. 1075, 1088 (1991) ("[D]eception detection studies indicate that many subjects can do better than chance in detecting falsehood . . . ."); Ogden, *supra* note 95, at 2–3 ("Demeanor evidence is recognized in the law as an important basis for determining the credibility of a witness. . . . [It] has been assumed to be crucial for determining whether a witness is telling the truth or a falsehood.").

97. United States v. Rutledge, 648 F.3d 555, 558 (7th Cir. 2011) (quoting Miller-El v. Cockrell, 537 U.S. 322, 339 (2003)).

98. This Article does not extend its discussion to scenarios—which became more common during the COVID-19 pandemic—in which the trial court proceedings are *themselves* presented to a judge completely on a remote video platform with participant "headshots" and in which the trial judge had no exposure to the case either before or after the remote hearing. For instance, this may occur in domestic violence hearings in which the sole witnesses are the plaintiff and the defendant, and there are no exhibits. If the trial judge rules that the plaintiff on the screen is more credible than the defendant based on the judge's visual impression of the

It is not the intent of this Article to settle the ongoing debate about the real value of perceptions of witness demeanor. Rather, let us simply acknowledge that digitally recorded evidence at times may flatly contradict a factfinder's demeanor-based perception that a particular witness has or has not testified truthfully or accurately.

When such contradictions surface, the customary reluctance of appellate courts to second-guess the factual findings of trial judges and juries is challenged. Do we still owe high deference to the factfinder in those situations? Or does the contradictory digital evidence fundamentally change the optics of appellate review? The next portion of this Article explores those important questions.

C. Differing Perspectives of the Recorded Evidence by Appellate Jurists

Having examined what digital evidence can reveal, as well as what it may distort, and the traditional appellate deference afforded to factfinders, this Article now turns to how that particular form of proof is best considered and weighed by appellate jurists in individual cases.

As noted above, video- and audio-recorded evidence has the potential to provide conclusive evidence of specific facts relevant to the case.[99] For instance, if it had been disputed whether a second person was present in a room when a burglary occurred, and a surveillance camera provided a complete video showing that no one other than the burglar was visible at that time, the video furnishes conclusive proof that disproves the

---

parties' demeanors during the remote hearing, the defendant-appellant might contend that an appellate court viewing a recording of the same proceedings is no less equipped to assess the record and the parties' demeanors than the judge.

Conversely, the plaintiff responding to the appeal may argue that appellate court should nonetheless defer to the finding, because of the trial court's institutional role as the trier of fact and that court's superior expertise with this kind of case type.

There is scant reported case law to date on this sort of Zoom-evidence-only scenario. It is a topic beyond the scope of this Article that perhaps other scholars may wish to tackle as more actual experiences with it occur. *See* Eric J. Magnuson & Samuel A. Thumma, *Prospects and Problems Associated with Technological Change in Appellate Courts: Envisioning the Appeal of the Future*, 15 J. APP. PRAC. & PROCESS 111, 120–21 (2014) (noting the persisting unresolved question of "what happens to the entire appeal process when the digital media captures the trial record so that the appellate court can see and hear everything that happened in the court below?").

99. The old maxim that "a picture is worth a thousand words" logically extends to video recordings. Some have traced the maxim to a quote from the playwright Henrik Ibsen ("A thousand words leave not the same impression as does a single deed"). Others claim it may have originally been inspired by a line in Christopher Marlowe's *The Tragical History of Doctor Faustus* c. 1590: "Was this the face that launcht a thousand shippes?" Wolfgang Mieder, "*A Picture Is Worth a Thousand Words": From Advertising Slogan to American Proverb*, 47 S. FOLKLORE 207, 213 (1990); *see also* Christopher Marlowe, *The Tragical History of Doctor Faustus*, Quarto of 1604, lines 163–64 ("Was this the face that launch'd a thousand ships and burnt the topless towers of Illium—sweet Helen, make me immortal with a kiss.").

Fred R. Barnard of the Street Railways Advertising Company coined the proverb as we know it today when he published a two-page advertisement with the headline "One Look is Worth a Thousand Words" in the American advertising journal *Printers' Ink* on December 8, 1921. Mieder, *supra*, at 209. The slogan, and some variations thereon, quickly caught on among other advertising agencies. It was adopted for ads depicting a girl and her mother baking cake in 1934. *Id.* at 213–14. It was also used to advertise televisions in 1944 and whiskey in 1975, and was used in nonprofit campaigns. *Id.* at 214–15.

factual allegation. Similarly, if the defendant in a domestic violence case denies that he used profanity on a voice message he left with the plaintiff, and an authenticated, unaltered recording shows otherwise, the fact of profanity may be established based on the recording.

In such straightforward situations, one would expect the parties to stipulate to (or at least not contest) the truth of that fact, and the trier of fact would have one less factual dispute to resolve. Or even if a dispute persists in spite of the clear digital evidence, the trial judge, hearing officer, or jury can adopt the fact in question based on the strength of the video or audio.

Fair enough. But there are harder cases in which the digital evidence may not be, or at least may not seem to be, conclusive. Those harder cases, once adjudicated at the trial level, can be appealed. The digital evidence is then supplied to the appellate panel, and the counsel or advocates present arguments about what those recordings show or do not show. The appellate judges then must consider the digital evidence themselves and determine whether or not it is conclusive.

1. Two Famous Cases

Two famous cases—one from the Second Circuit Court of Appeals and one from the U.S. Supreme Court—demonstrate how appellate jurists can differ in their assessments of recorded evidence. Jurists can listen to or view the same recordings and reach conflicting interpretations about what the recordings prove or disprove. This phenomenon was starkly manifested in 1946 in *Arnstein v. Porter*,[100] and in 2007 in *Scott v. Harris*,[101] when each of those appellate tribunals were internally divided about the evidential significance of a recording.

2. *Arnstein v. Porter*: Internal Appellate Disagreement over Audio Recordings

In 1946, the Second Circuit Court of Appeals issued what became a prominent example of the disagreements that can arise among appellate judges about the significance of recording evidence they each have heard. The case involved audio recordings of music samples in evidence in a copyright infringement case.

Plaintiff Ira Arnstein composed sheet music in the early twentieth century, in New York City.[102] Representing himself, Arnstein filed a series of lawsuits and criminal charges against various famous composers and publishers of popular songs, including Irving Berlin, composer and conductor Nathaniel Shilkret, and music publisher Edward B. Marks, alleging they had improperly plagiarized his original tunes and passed them off as their own.[103]

---

100. 154 F.2d 464 (2d Cir. 1946).

101. 550 U.S. 372 (2007).

102. *See generally* GARY A. ROSEN, UNFAIR TO GENIUS: THE STRANGE AND LITIGIOUS CAREER OF IRA B. ARNSTEIN (2012).

103. *Id.* at 80–82, 91–100, 125–46, 166–70, 173–93, 207–40, 252–57; *see also* Caleb Crain, *A Professional Victim: On Ira B. Arnstein*, THE NATION (April 30, 2013), https://www.thenation.com/article/archive/professional-victim-ira-b-arnstein/ [https://perma.cc/9WZY-PYQT] (reviewing Rosen's biography of Arnstein). Arnstein was born in Ukraine and emigrated to New York City in 1891. ROSEN, *supra* note 102, at

In the Second Circuit case in question, Arnstein sued the iconic songwriter Cole Porter. Arnstein claimed that several of Porter's most famous songs, including "Night and Day" and "Begin the Beguine," had been copied from and were substantially similar to his previous copyrighted works.[104] Porter moved for summary judgment. To illuminate the dispute, Porter submitted for comparison recordings of each of Arnstein's and his own pieces performed on piano.[105]

The district court granted Porter summary judgment, concluding that there was no triable issue of substantial similarity between Arnstein's and Porter's songs.[106] By a two-to-one vote, a split panel of the Second Circuit reversed, vacating summary judgment and remanding the case for a jury trial.[107] The panel consisted of three of the most prominent federal appellate judges in the country: Judge Learned Hand, Judge Jerome Frank, and Judge Charles E. Clark.[108]

The majority decision, authored by Judge Frank and joined by Judge Hand, concluded there was sufficient proof of similarity in the sound of the compared recordings to require a jury to resolve whether Arnstein's claim of copyright infringement was sufficiently supported.[109] In his dissenting opinion, Judge Clark disagreed, finding no reasonable question of similarity existed.[110]

Pertinent here from *Arnstein v. Porter* is the strong disagreement between the majority and dissenting opinions about whether the audio recordings reflected a substantial similarity, based upon the judges' own personal assessments upon listening to the recordings. In his majority opinion, Judge Frank wrote:

> After listening to the compositions as played in the phonograph recordings submitted by defendant, we find similarities; but we hold that

39. He began composing music professionally in 1899, *id.* at 52–53, and, in 1925, his biblical opera, *The Song of David*, was staged as a work in progress, *id.* at 68–69. He was often in financial distress and was regarded as possibly being mentally ill. *Id.* at 165–67. In 1937, Arnstein filed a massive lawsuit against twenty-three music composers and publishers, but the defendants prevailed. *Id.* at 169–91. He claimed that the alleged thieves of his music "always add two or three notes . . . to cover up the [source's] identity." *Id.* at 208. He brought another lawsuit for infringement against fifty defendants, which was dismissed by a New York state court in 1948. *Id.* at 238–40. Arnstein died in 1956. *Id.* at 254–55.

104. *Id.* at 218–19.

105. *Id.* at 222.

106. *Id.*; *see also* Arnstein v. Porter, 154 F.2d 464, 468–69 (2d Cir. 1946).

107. *Arnstein,* 154 F.2d at 473, 475.

108. *See* Shyamkrishna Balganesh, *The Questionable Origins of Copyright Infringement Analysis*, 68 STAN. L. REV. 791, 813–31 (2016). Judge Hand was a renowned legal scholar and jurist. *Id.* at 821. He served for thirty-six years on the Second Circuit, three of them as chief judge. *Hand, Learned*, FED. JUD. CTR., https://www.fjc.gov/history/judges/hand-learned [https://perma.cc/N2SV-C5UW] (last visited Oct. 30, 2023). Judge Clark, the former dean of Yale Law School, was one of the main architects of the Federal Rules of Civil Procedure. Balganesh, *supra*, at 825. He served on the Second Circuit for twenty-four years, five of them as chief judge. *Clark, Charles Edward*, FED. JUD. CTR., https://www.fjc.gov/history/judges/clark-charles-edward [https://perma.cc/Y7HP-RF73] (last visited Oct. 30. 2023). Judge Frank was a noted legal philosopher and jurist who was a leading force in the Legal Realism movement. Balganesh, *supra*, at 814. He served on the Second Circuit for sixteen years. *Frank, Jerome New*, FED. JUD. CTR., https://www.fjc.gov/history/judges/frank-jerome-new [https://perma.cc/J4JV-USF2] (last visited Oct. 30, 2023).

109. *Arnstein*, 154 F.2d at 469.

110. *Id*. at 476–78 (Clark, J., dissenting).

> unquestionably, standing alone, they do not compel the conclusion, or permit the inference, that defendant copied. The similarities, however, are sufficient so that, if there is enough evidence of access to permit the case to go to the jury, the jury may properly infer that the similarities did not result from coincidence.[111]

Judge Frank repeated this similarity observation several paragraphs later:

> We should not be taken as saying that a plagiarism case can never arise in which absence of similarities is so patent that a summary judgment for defendant would be correct. Thus suppose that Ravel's 'Bolero' or Shostakovitch's 'Fifth Symphony' were alleged to infringe 'When Irish Eyes Are Smiling.' But this is not such a case. *For, after listening to the playing of the respective compositions, we are, at this time, unable to conclude that the likenesses are so trifling that, on the issue of misappropriation, a trial judge could legitimately direct a verdict for defendant.*[112]

But in dissent, Judge Clark presented a contrary assessment of what he heard on the recordings:

> Of course, sound is important in a case of this kind, but it is not so important as to falsify what the eye reports and the mind teaches. Otherwise plagiarism would be suggested by the mere drumming of repetitious sound from our usual popular music, as it issues from a piano, orchestra, or hurdy-gurdy—particularly when ears may be dulled by long usage, possibly artistic repugnance or boredom, or mere distance which causes all sounds to merge. And the judicial eardrum may be peculiarly insensitive after long years of listening to the 'beat, beat, beat' (I find myself plagiarizing from defendant and thus in danger of my brothers' doom) of sound upon it, though perhaps no more so than the ordinary citizen juror—even if tone deafness is made a disqualification for jury service, as advocated.
>
> Pointing to the adscititious fortuity inherent in the stated standard is, it seems to me, the fact that after repeated hearings of the records, I could not find therein what my brothers found. The only thing definitely mentioned seemed to be the repetitive use of the note e^2 in certain places by both plaintiff and defendant, surely too simple and ordinary device of composition to be significant.[113]

These polar opposite personal impressions among the appellate judges in *Arnstein v. Porter* caused them to split on the appeal's disposition. They strongly disagreed about what the recordings showed or failed to show. They further disagreed about the proper role of expert testimony in evaluating infringement, and whether similarity should be measured solely by the reactions of the average juror. Judges Frank and Hand opined that the summary judgment test in this infringement context should hinge upon what an average audience member reasonably would conclude upon hearing and comparing Arnstein's songs with Porter's.[114] This has been described in copyright law

111. *Id.* at 469 (majority opinion).

112. *Id.* at 473 (emphasis added).

113. *Id.* at 475–76 (Clark, J., dissenting).

114. *Id.* at 473 (majority opinion).

as the "ordinary observer" test.[115] On the other hand, Judge Clark opined that the viability of such a lawsuit should not depend upon how an average juror would perceive the sounds.[116] Instead, he thought the claim of substantial similarity should be evaluated by considering the educated opinions of musical experts, and by analyzing the formal structure of the music, such as pitch, tempo, harmonies, and so on.[117] To rely on the untrained reactions of judges and jurors, Judge Clark submitted, would result in "musical chaos."[118]

Notably, Judges Frank and Clark did not depend entirely upon their own ears in comparing the works. Apparently, when he was listening to the recordings, Judge Clark consulted with his secretary and law clerk, "both of whom have studied music somewhat," as well as a Yale University organist.[119] Meanwhile, Judge Frank consulted with his own secretary, who also had musical talents.[120]

Over the years, the "ordinary observer" standard adopted by the majority in *Arnstein v. Porter* became a dominant standard used in copyright cases by many other circuit courts.[121] However, Judge Clark's views about the federal summary judgment test eventually prevailed as a matter of civil procedure law.[122] In any event, the disagreement within the three-judge panel about what the audio recordings proved or disproved supplies an apt illustration of what this Article has noted to wit: that the evidential significance of a recording is often debatable, and that appellate judges might not have special skill or expertise in assessing that significance.

On remand, the case was tried over eleven days in 1946 before seven men and five women jurors,[123] who heard a long procession of fact and expert witnesses, including the famous composer Richard Rodgers.[124] The jury returned a verdict in

115. *Id.* at 468; *see also* Ideal Toy Corp. v. Fab-Lu Ltd., 360 F.2d 1021, 1022–23 (2d Cir. 1966).

116. *Arnstein*, 154 F.2d at 476–77 (Clark, J., dissenting).

117. *Id*.

118. *Id.* at 480.

119. ROSEN, *supra* note 102, at 225. As Judge Clark in his dissent artfully described the judges' repeated playing of the compositions, "the tinny tintinnabulations of the music thus canned resounded through the United States Courthouse to the exclusion of all else." *Arnstein*, 154 F.2d at 475 (Clark, J., dissenting). The author respectfully acknowledges that under present ethical standards, it would be inappropriate for a judge to privately consult with an expert outside of the judiciary about the merits of a pending case.

120. ROSEN, *supra* note 102, at 225.

121. *See, e.g.*, Concrete Mach. Co. v. Classic Lawn Ornaments, Inc., 843 F.2d 600, 607–09 (1st Cir. 1988); Dam Things from Den. v. Russ Berrie & Co., 290 F.3d 548, 562 (3d Cir. 2002); Sturdza v. U.A.E., 281 F.3d 1287, 1296 (D.C. Cir. 2002).

122. *See* Lawrence W. Pierce, *Summary Judgment: A Favored Means of Summarily Resolving Disputes*, 53 BROOK. L. REV. 279, 280–89 (1987).

123. The presence of so many women on the jury was unusual for the era but consistent with the majority opinion that stressed the important role of lay jurors as the "audience for whom such popular music is composed." *Arnstein*, 154 F.2d at 473. Many women undoubtedly were fans of Porter's songs, and women also performed a number of them, including Ella Fitzgerald, Ethel Merman, and Ginger Rogers. ROSEN, *supra* note 102, at 23, 250; *see also* GingerRogers1911, *Ginger Rogers Sings Night and Day*, YOUTUBE (Jan. 2, 2015), https://www.youtube.com/watch?v=TGtCJXXoVCk [https://perma.cc/W9X4-RMFR] (from the movie *The Gay Divorcee* (1934)).

124. ROSEN, *supra* note 102, at 231–35; Final Judgment, Arnstein v. Porter, 154 F.2d 464 (2d Cir. 1946) (No. 29-754).

Porter's favor, dismissing Arnstein's claims in full.[125] The victorious Porter applied for counsel fees, and the trial judge awarded him $2,500, payable by Arnstein.[126] The Second Circuit, this time, affirmed the judgment in Porter's favor.[127]

3. *Scott v. Harris*: Internal Appellate Disagreement About a Video Recording

Scott v. Harris was a civil Section 1983 excessive force case arising out of a police high-speed chase of the plaintiff motorist.[128] A police officer ended the chase by driving his squad car's bumper into the rear of the plaintiff's vehicle, causing it to leave the road and crash.[129] The district judge reviewed a video recording of the police chase and denied the defendant officer's motion for summary judgment based on qualified immunity.[130] The Eleventh Circuit, which likewise viewed the video, affirmed.[131]

Eight Justices voted to reverse in *Scott v. Harris*. The majority opinion by Justice Scalia concluded that "*it is clear from the videotape* that [the plaintiff] posed an actual and imminent threat to the lives of any pedestrians who might have been present, to other civilian motorists, and to the officers involved in the chase."[132] The majority opinion further asserted, "The *videotape quite clearly contradicts* the version of the story told by [the plaintiff] and adopted by the Court of Appeals."[133]

By contrast, in his *Scott v. Harris* dissenting opinion, Justice Stevens expressed that he perceived the video as being supportive of the plaintiff's claims of excessive and unreasonable force, and he justified the lower courts' denial of the officer's summary judgment motion. As Justice Stevens wrote, the video "*actually confirms, rather than contradicts*, the lower courts' appraisal of the factual questions at issue."[134]

Among other observations, Justice Stevens commented that the video depicted cars pulled over to the side of the road, apparently due to the police warnings; the number of cars the plaintiff passed; and the sounds of the police sirens and their flashing lights.[135] Justice Stevens further noted that because of the distances of the cameras from the vehicles and the difficulty of discerning the color of the traffic lights,

125. Final Judgment, *supra* note 124.

126. ROSEN, *supra* note 102, at 236. According to the Bureau of Labor Statistics' Inflation Calculator, $2,500 in June 1946, when the judgment was entered, has the buying power of $39,678.74 as of December 2022. *CPI Inflation Calculator*, U.S. DEP'T LAB., http://www.bls.gov/data/inflation_calculator.htm (last visited Oct. 30, 2023).

127. ROSEN, *supra* note 102, at 237–38; *see also* Arnstein v. Porter, 158 F.2d 795 (2d Cir. 1946) (per curiam).

128. 550 U.S. 372, 374–76 (2007).

129. *Id.* at 375–76.

130. The video recording is posted on the official website of the U.S. Supreme Court, under a heading labeled "Scott v. Harris – MP4 File." *See Media Files Cited in Opinions,* U.S. SUP. CT., https://www.supremecourt.gov/media/media.aspx [https://perma.cc/8439-7M2L] (last visited Oct. 30,, 2023).

131. *See Scott*, 550 U.S. at 376; *see also* Harris v. Coweta Cnty., 406 F.3d 1307, 1319 n.12 (11th Cir. 2005) (discussing what the video showed).

132. *Scott*, 550 U.S. at 384 (emphasis added).

133. *Id.* at 378 (emphasis added).

134. *Id.* at 390 (Stevens, J., dissenting) (emphasis added).

135. *Id.* at 391.

"it is not entirely clear that [the plaintiff] ran either or both of the red lights."[136] The Justice added that "the *video does not reveal any incidents that could even be remotely characterized* as 'close calls.'"[137]

The Justices' competing interpretations of the video evidence in *Scott v. Harris* exemplify that what an appellate jurist—or, for that matter, a juror or trial judge—may glean from such evidence sometimes will depend upon the eye of the beholder.

This point was substantiated in a study conducted by three professors who presented the *Scott v. Harris* video to a diverse sample of 1,350 Americans.[138] Although a majority of the sampled persons agreed with the Court majority's resolution of the key issues in *Scott v. Harris*, participants were divided along cultural, ideological, and other lines, in their opinions about what the video depicted.[139]

A key point illuminated by *Scott v. Harris* is that the conscious and unconscious factors that can affect how judges and jurors react to the testimony of trial witnesses can likewise affect how those triers of fact react to video and audio recordings.[140] Researchers have contended that video-recorded evidence tends to be overvalued and may be prone to misperception or misuse.[141] The objectivity of a viewer of a recording may be affected by confirmation bias, as the viewer may look for images or actions in the video that tend to confirm the viewer's inclinations and may overlook or minimize elements that tend to refute them.[142]

A striking aspect of *Scott v. Harris* is that the Justices in the majority and the dissenting Justice not only *disagreed* about what the car chase video showed, but that they were *confident* about their opposing interpretations. According to the majority, the video "clearly" showed the plaintiff had been driving dangerously;[143] according to the dissent, the video "actually confirm[ed]" he had not.[144] These proclamations of confidence parallel the phenomenon of eyewitnesses who initially identify the perpetrator of a crime and then become more confident of their identifications as time passes, sometimes erroneously.[145]

---

136. *Id.* at 391–92.

137. *Id.* at 392 (emphasis added).

138. Dan M. Kahan, David A. Hoffman & Donald Braman, *Whose Eyes Are You Going To Believe?* Scott v. Harris *and the Perils of Cognitive Illiberalism*, 122 HARV. L. REV. 837, 838 (2009).

139. *See id.* at 864–70.

140. *See* Adam Benforado, *Frames of Injustice: The Bias We Overlook*, 85 IND. L.J. 1333, 1355–56 (2010) (contending the dashcam video in *Scott v. Harris* filmed from the vantage point of the pursuing police cars reflects a "camera perspective bias," and that we might consider the events differently if they had been filmed from the perspective of the motorist being chased).

141. *See generally* Williams, *supra* note 80.

142. This was shown by the famous "gorilla suit" experiment, in which many observers of a video who were focused on counting the number of times people on the screen passed around a basketball totally overlooked a person dressed in a gorilla suit who briefly walked across the screen behind the basketball passers. *See* Christopher Chabris & Daniel Simons, *Selective Attention Test*, YOUTUBE (Mar. 10, 2010), https://youtu.be/vJG698U2Mvo [https://perma.cc/6MGE-6KHW].

143. Scott v. Harris, 550 U.S. 372, 378 (2007).

144. *Id.* at 390 (Stevens, J., dissenting).

145. As courts and scholars have recognized more acutely in recent years, "[i]mplicit bias refers to . . . attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner." State

As noted above, a similar disagreement within the appellate tribunal had occurred in *Arnstein v. Porter* over whether defendant Porter's recordings sounded substantially similar to plaintiff Arnstein's compositions.[146] The majority and dissent parted on this pivotal question, relying largely on their own private efforts in playing the recordings repeatedly.[147]

These famous cases teach us that what judges and juries see or hear on a recording can be influenced by a myriad of factors. Some of the influencing factors may be helpful (such as well-written opposing briefs highlighting key elements of the recording) and some of them less helpful or even detrimental. Those influencing factors can produce, on the one hand, reasonable interpretations of the recordings or, on the other hand, misperception and error.[148]

Turning back to our context of appellate review, we need to bear in mind that the digital evidence normally has already been viewed or heard by the trier of fact below, except for the rare instance in which the appellate record has been expanded. If the matter was tried by a jury, then multiple factfinders were presented with and evaluated the contents of the recording, sometimes with the ability to have the recording played back multiple times or supplied to them in the jury room.[149]

---

v. Andujar, 254 A.3d 606, 622 (N.J. 2021) (omission in original) (quoting CHERYL STAATS, KELLY CAPATOSTO, ROBIN A. WRIGHT & DANYA CONTRACTOR, KIRWAN INST., STATE OF THE SCIENCE: IMPLICIT BIAS REVIEW (2015), at 62, https://search.issuelab.org/resource/state-of-the-science-implicit-bias-review-2015.html [https://perma.cc/MRN7-PT4V]). "Such biases 'encompass both favorable and unfavorable assessments, [and] are activated involuntarily and without an individual's awareness or intentional control.'" *Id.* (alteration in original) (quoting STAATS ET AL., *supra*); *see also* State v. Saintcalle, 309 P.3d 326, 335 (Wash. 2017) ("[W]e all live our lives with stereotypes that are ingrained and often unconscious.").

A related phenomenon is confirmation bias, by which judges and jurors "may tend to accept evidence that conforms to their experience, while discounting contrary evidence." Helen Hershkoff, *Some Questions About #MeToo and Judicial Decision Making*, 43 HARBINGER 128, 135 (2019). *See generally* Deborah Davis & William C. Follette, *Toward an Empirical Approach to Evidentiary Ruling*, 27 L. & HUM. BEHAV. 661, 664 (2003).

146. *See* Arnstein v. Porter, 154 F.2d 464, 468–69 (2d Cir. 1946); *id.* at 476–78 (Clark, J., dissenting); *see also supra* Part III.C.2.

147. *Arnstein*, 154 F.2d at 468–69; *id.* at 476–78 (Clark, J., dissenting); ROSEN, *supra* note 102, at 225.

148. As the Ohio Court of Appeals—citing the research from the above-noted 2018 Yael Granot article—has cautioned,

> Although it may be tempting to trust or credit a video of an event, judges should necessarily be wary not to place too much trust in a video, because doing so may interject the judges' (or the State's) subjective and contestable interpretative preferences about what gestures and declarations in the video actually mean.

State v. Chappell, No. 28598, 2020 WL 2508027, at *10 (Ohio Ct. App. May 15, 2020) (citing Granot et al., *supra* note 47).

149. Some case law has cautioned against providing jurors with unrestricted access to recordings during deliberations, based on a concern that the jurors might afford too much value to that evidence over the value of the witness testimony they heard in the courtroom. *See, e.g.*, State v. Miller, 13 A.3d 873, 880–81 (N.J. 2011) (cautioning judges to "take precautions to prevent juries from placing undue emphasis on the particular testimony that is replayed" and "exercise discretion to deny playing back all or part of the evidence requested when necessary to guard against unfair prejudice"); State v. A.R., 65 A.3d 818, 821 (N.J. 2013) (applying *Miller*, 13 A.3d at 882 and *State v. Burr*, 948 A.2d 627, 635 (N.J. 2008) in holding that the jury's "unfettered access" to video evidence was in error but could not be considered plain error under the invited-error doctrine).

Trial-level factfinders also have had the benefit of absorbing firsthand all of the other evidence in the case, including documentary exhibits and witness testimony. They have a much fuller context for appreciating the probative worth of the recording and considering how the recording aligns or conflicts with that other evidence. The presiding judge or hearing officer below often has lived with the case longer than the panel of judges who are considering the appeal.[150]

The appellate court "audience," lacking such case-specific experience, is inherently at a comparative disadvantage. Nevertheless, errors can and do occur at the trial level, and the appeals process is important for correcting those errors, when necessary, and in a manner consistent with the law.

D. Defining Appropriate Standards of Review of Recorded Evidence

Given all of this, what are the appropriate standards of review in appeals that include, as is more and more frequent, video- and audio-recorded evidence? Should appellate jurists review the video and audio recordings de novo, with little or no deference to the triers of fact? Or, conversely, should appellate courts continue to accord traditional deference to the factfinders below, even where it appears from the video or audio recordings that the factfinder got it wrong?[151]

A 2015 article surveyed the case law in various state and federal appellate courts concerning the proper standards of review of police-related video evidence.[152] The article identified what it perceived to be a split between appellate courts that seem to favor "deferential" appellate review (such as that articulated by Justice Stevens in *Scott v. Harris*) and courts that instead favored a de novo standard (such as the majority opinion applied in *Scott v. Harris*) with respect to such video evidence.[153]

Recent and other cases reveal, however, that appellate courts have generally adopted a more nuanced approach in reviewing digital evidence than a deference–versus–de novo dichotomy.[154] By and large, in the evolving case law, the scope of review turns substantially on (1) the conclusiveness and probative strength of the digital evidence, (2) the materiality of the digital evidence to the issues raised on

---

150. As one article addressing the related topic of appellate review of video-recorded trial proceedings observed, "[t]he video [trial] record may 'speak for itself,' but it does not and cannot speak for the visual input a judge observes and interprets that falls outside the scope of the camera, nor does it filter events and behavior through his or her experience and expertise." Bernadette Mary Donovan, Note, *Deference in a Digital Age: The Video Record and Appellate Review*, 96 VA. L. REV. 643, 676 (2010).

151. *See generally* Robert C. Owen & Melissa Mather, *Thawing Out the "Cold Record": Some Thoughts on How Videotaped Records May Affect Traditional Standards of Deference on Direct and Collateral Review*, 2 J. APP. PRAC. & PROCESS 411 (2000) (discussing the appellate scope of review of videos of the trial proceedings themselves).

152. *See generally* Kevin W. Bufford, *Appellate Review—The Split on the Proper Standard of Review for Police Video Evidence*—Scott v. Harris*, 550 U.S. 372 (2007)*, 39 AM. J. TRIAL ADVOC. 447 (2015).

153. *Id.* at 447–48 (categorizing the split among state and federal courts as favoring either deferential or de novo appellate review of video evidence). The author of this foundational article acknowledged that "[s]ome courts have yet to address the issue in a manner that is sufficiently acute to merit establishing a preference for the deferential or de novo standard." *Id.* at 450.

154. *See infra* Part III.D.1.

appeal, and (3) the procedural and evidentiary context in which that evidence was presented below.

1. Conclusiveness/Probative Strength

Many of the reported appellate cases in the wake of *Scott v. Harris* have proclaimed that video-recorded evidence presented on appeal should not upset the findings of fact of the tribunal below, unless the recordings are conclusive (i.e., not subject to differing reasonable interpretations) and have compelling probative strength in comparison with any other evidence about the facts in question. The cases use varying terms to capture this concept.

As just a few examples, the Indiana Supreme Court has ruled that in "rare" instances "where the video evidence *indisputably contradicts* the trial court's findings, relying on such evidence and reversing the trial court's findings do not constitute [improper appellate] reweighing."[155] The Supreme Court of North Dakota adopted and applied that Indiana standard in reversing a trial court's factual finding that a motorist's license plate was not illuminated.[156] In a similar vein, the majority of the justices of the Vermont Supreme Court declined to overturn a trial court's finding that a defendant was violent and assaultive with an officer; they were unpersuaded that a videotape of the incident "*significantly contradict[ed]*" the testimony relied upon by the trial court.[157] The Supreme Court of Mississippi has comparably held that "where the record contains a videotape of disputed facts capturing the events in question, the courts should view the story as depicted by the videotape, when one party's version is *blatantly contradicted*, for the purpose of ruling on a summary judgment motion."[158]

The New Jersey Supreme Court has likewise rejected a purely de novo standard of appellate review of video evidence, holding that reversal of factual findings is warranted only where the video recording is not subject to "more than one reasonable inference" and the video shows the trial court's findings are "*clearly mistaken*."[159] Similarly, the Minnesota Court of Appeals has stated that "even when the record includes a video, we review factual findings for *clear error*."[160] The Tennessee Criminal Court of Appeals has distinguished between, "on the one hand, a videotape's *contradicting irrefutably* the testimony of a witness as to a point of fact common to both evidence sources and, on the other hand, that videotape's serving to besmirch the witness more generally."[161]

155. Love v. State, 73 N.E.3d 693, 699 (Ind. 2017) (emphasis added).

156. State v. Boger, 963 N.W.2d 742, 749 (N.D. 2021) (finding that the video evidence in that case "clearly rebuts" the police officer's testimony that had been relied upon by the trial court).

157. State v. Woolbert, 926 A.2d 626, 628 (Vt. 2007) (emphasis added).

158. Duckworth v. Warren, 10 So. 3d 433, 438 (Miss. 2009) (emphasis added).

159. State v. S.S., 162 A.3d 1058, 1070 (N.J. 2017) (emphasis added). The court added, however, that appellate courts are not obligated to give "blind deference" to factual findings that are not "supported by sufficient credible evidence in the record." *Id.*

160. Bunde v. Comm'r of Pub. Safety, No. A13-1684, 2014 WL 4055995, at *2 (Minn. Ct. App. Aug. 18, 2014) (emphasis added).

161. State v. Farrar, 355 S.W.3d 582, 587 (Tenn. Crim. App. 2011) (emphasis added).

In the federal courts, several cases involving video evidence likewise instruct that the courts of appeals should not rely on video evidence to overturn the district courts' factual findings unless the video shows the findings were clearly erroneous.[162] Those federal cases follow the pattern of comparable state court opinions noted above.

By analogy, this affirmance-tilted standard for video review is replicated in the sports world in the rules governing video review of the in-game rulings made by umpires and referees. Those rules use similar language to advise that the call on the field of play should not be reversed unless the video reveals "clear and obvious" evidence[163] or words to that effect,[164] showing the call was incorrect. Although the rules of sport do not, of course, prescribe what is appropriate for a court system, the fact that these video review provisions consistently set a high bar for reversal is instructive. Just as a looser standard for reversal could be detrimental to the stability and operation of the game, so too could a looser standard create possible dysfunctions in litigated cases.

---

162. *See, e.g.*, United States v. Murphy, 703 F.3d 182, 189–90 (2d Cir. 2012) (affirming the district court's factual findings because they were not shown by the video evidence to be "clearly erroneous"); United States v. Simpson, 609 F.3d 1140, 1146 (10th Cir. 2010) (noting the appellate court "defers to the district court's findings of facts and reviews them solely for clear error, even when, as here, there is video tape of the [incident]"); Dorsey v. United States, 60 A.3d 1171, 1205–06 (D.C. 2013) (concluding that the trial court's determination, based on both his review of a videotape and the testimony of a live witness, was a "permissible view[] of the evidence" and not "clearly erroneous" (quoting Anderson v. City of Bessemer, 470 U.S. 564, 574 (1985))). *But see* Scott v. Harris, 550 U.S. 372, 378 (2007) (reversing the factual findings of the district court and the court of appeals because they were "clearly contradict[ed]" by the video evidence).

163. NAT'L FOOTBALL LEAGUE, 2022 OFFICIAL PLAYING RULES, Rule 15, § 2, art. 1 (2022) ("An on-field ruling will be changed only when the Senior Vice President of Officiating or his or her designee determines that clear and obvious video evidence warrants a change.").

164. *See* Major League Baseball, *Glossary: Replay Review,* https://www.mlb.com/glossary/rules/replay-review [https://perma.cc/LH7N-GTKJ] ("Replay officials review all calls subject to replay review and decide whether to change the call on the field, confirm the call on the field or let stand the call on the field due to the lack of *clear and convincing evidence*.") (last visited Oct. 30, 2023); NAT'L BASKETBALL ASS'N, OFFICIAL RULES 2022-23, Rule 14, § IV(c) ("To overturn a challenged event or to change the outcome of a reviewable matter via a Challenge, there must be *clear and conclusive visual evidence* that the initial adjudication of that aspect of the play was incorrect."); WOMEN'S NAT'L BASKETBALL ASS'N**,** OFFICIAL RULES 2022, Rule 13, § III(d) ("The call made by the game officials during play will be reversed only when the replay provides the officials with *'clear and conclusive' visual evidence* to do so."); NAT'L HOCKEY LEAGUE, OFFICIAL RULES 2022-2023, Rule 38.1 (2022) ("The video review mechanism triggered by the Coach's Challenge can only be utilized in GOAL/NO GOAL situations and is *intended to be extremely narrow* in scope. In all Coach's Challenge situations, the original call on the ice will be overturned if, and only if, *a conclusive and irrefutable determination* can be made on the basis of video evidence *that the original call on the ice was clearly not correct.* If a review is not conclusive and/or there is any doubt whatsoever as to whether the call on the ice was correct, the original call on the ice will be confirmed."); INT'L FOOTBALL ASS'N BD., LAWS OF THE GAME 21/22, Law 5, Ch. 4, at 63 (2021) ("Except for a 'serious missed incident,' the referee (and where relevant other 'on-field' match officials) must always make a decision (including a decision not to penalise a potential offence); this decision does not change unless it is a *'clear and obvious error.*'") (emphasis added to all).

2. Materiality of the Digital Evidence to the Issues Raised on Appeal

Another factor that affects the scope of review of digital evidence that contradicts one or more factual findings made below is the extent to which such a contradiction is material to the issues raised on the appeal. Put another way, even if the video or audio recording shows the tribunal below clearly got one or more of the facts wrong, is that mistake consequential, or is the error harmless?

Consider this materiality aspect in the context of the dashcam hypothetical presented at the outset of this Article.[165] Suppose Officer A testifies that she approached the Driver's vehicle from the passenger side, without her gun drawn, and the trial court finds her credible and adopts those facts. Suppose further that a video plainly shows Officer A approached the vehicle from the driver's side with her gun drawn. Are those factual mistakes revealed by the video an automatic basis for reversal? The logical answer is that it depends on the materiality of the factual errors to the issues raised on appeal.

If, for instance, the issue on appeal is whether the police had a reasonable constitutional basis to stop the vehicle without a warrant after observing the Driver speed away from a bank robbery and run through four stop signs, it is arguably immaterial and inconsequential whether Officer A initially approached the vehicle from the driver's side or the passenger side, or whether or not she had her gun drawn. By contrast, it might be highly material and consequential if the issue on appeal, instead, were whether the Driver gave Officer A valid consent to search the trunk of the vehicle and if she had approached his side of the car with her gun pointed at him when she sought his consent. In that instance, the discrepancy between the testimony and the video deserves closer attention by the appellate panel.

An inquiry into whether a discrepancy shown by digital evidence is grounds for reversal corresponds to generic standards of appellate review that consider whether an identified error is harmful or, conversely, harmless.[166] If the discrepancy is harmless, then reversal is not warranted.

---

165. *See supra* Introduction.

166. *See generally* FED. R. CRIM. P. 52(a) regarding Harmless Error ("Any error, defect, irregularity, or variance that does not affect substantial rights must be disregarded"). *See* ALASKA. R. CRIM. P. 47(a) (using substantially the same text as the federal rule); *accord* COLO. R. CRIM. P. 52(a); DEL. SUPER. CT. R. CRIM. P. 52(a); HAW. R. PENAL P. 52(a); ME. R. CRIM. P. 52(a); OHIO R. CRIM. P. 52(A); NEV. REV. STAT. ANN. § 178.598 (West 2023); W. VA. R. CRIM P. 52(a); WYO. R. CRIM. P. 52(a).

In a similar vein, the Florida appellate courts apply a "miscarriage of justice" standard for reversal, although they instruct that the provision "shall be liberally construed." FLA. STAT. ANN. § 59.041 (West 2023). Indiana's rule calls for affirmance "unless refusal to take such action appears to the [appellate] court inconsistent with substantial justice." IND. R. TRIAL P. 61. Kansas prescribes by statute that the appellate court "must disregard all errors or defects that do not affect any party's substantial rights." KAN. STAT. ANN. § 60-261 (West 2023). New Jersey's court rule advises appellate courts to disregard any error or omission "unless it is of such a nature as to have been clearly capable of producing an unjust result, but the appellate court may, in the interests of justice, notice plain error not brought to the attention of the trial or appellate court." N.J. CT. R. 2:10-2.

3. Procedural and Evidentiary Contexts

A third important aspect of the scope of appellate review concerns the procedural and evidentiary contexts in which the video evidence was presented. The contexts can vary substantially and thereby impact the appropriate scope of review.

Procedurally, the presentation of video or audio recordings to the trial court as part of a summary judgment record calls for de novo review, because the trial court is in no better position to have considered that proof than the appellate court.[167] Conversely, if the digital evidence was presented to a factfinder at a trial or an evidentiary hearing rather than on summary judgment, then the findings of the judge, jury, or hearing officer who saw or heard that evidence deserve greater deference by the appellate court.[168]

Case law illustrates these principles at work. For instance, in *United States v. Burson*, the Tenth Circuit Court of Appeals, after reviewing video evidence in the record, affirmed a district court's finding that a defendant was not too tired and intoxicated to have involuntarily waived his right of self-incrimination.[169] The circuit court concluded that the video evidence actually rebutted all of the defendant's factual contentions and that the district court's assessment of that evidence was not "clearly erroneous."[170]

Further, in *Norse v. City of Santa Cruz*, a civil case in which summary judgment had been granted below, the Ninth Circuit Court of Appeals reversed the trial court's motion order, because a video recording of the pertinent events apparently relied upon by the district court was inconclusive and "different viewers of the [video]tape may draw different conclusions."[171] The record thus showed, in *Norse*, that genuine issues of "material" fact existed, making the ambiguity of the recording consequential to the appeal.[172]

---

167. FED. R. CIV. P. 56; *see also* Winfield v. Keefe, 357 F. Supp. 3d 90, 94 (D. Mass. 2019) (denying defendant's summary judgment motion in part in a Section 1983 excessive force case where only half of a video provides "irrefutable evidence . . . that no reasonable police officer would have understood their conduct to have violated constitutional norms," while the latter half "is ambiguous" and "blurry . . . [such that] [o]ne cannot tell specifically what is going on" (emphasis omitted)), *aff'd*, No. 19-1304, 2020 WL 7069743 (1st Cir. Jan. 29, 2020) (affirming despite the fact that all inferences must be drawn in the light most favorable to plaintiff); Thomas v. Boyd Biloxi LLC, No. 2021-CA-00265-COA, 2022 WL 1799140, at *7 (Miss. Ct. App. June 2, 2022) (finding that where a video in evidence "blatantly contradicted" the plaintiff's version of the events underlying a personal injury claim, "even at the summary judgment stage, [the court is] not bound by testimony that is contradicted by the video").

168. *See, e.g.*, State v. Garcia, 301 P.3d 658, 662–63 (Kan. 2013) (applying a deferential standard of review to findings of fact made by a trial judge in the context of a motion to suppress evidence that included a videotape of a defendant's interrogation). The Supreme Court of Kansas noted in *Garcia* that although "the videotaping of an interrogation might greatly reduce the number of facts that are disputed; it nevertheless remains the duty of the district court to do the factfinding, not the appellate courts." *Id.* at 663.

169. 531 F.3d 1254, 1258–59 (10th Cir. 2008).

170. *Id.* at 1259.

171. 629 F.3d 966, 975 (9th Cir. 2010).

172. *Id.*

As for the evidentiary context, it can make a difference to appellate review if the video or audio evidence was the sole evidence proffered concerning particular facts,[173] or, conversely, if there was other evidence admitted (such as testimony, documents, other exhibits) relevant to the factual disputes.[174] To imagine an extreme example, assume that five eyewitnesses, an inculpatory DNA test, and a gun and a stolen item found at a defendant's apartment all support the prosecution's factual contention that the defendant is the person who committed the robbery. In a case with such overwhelming proof of guilt, it probably does not matter much that the surveillance video of the robbery scene, taken with poor lighting, contains a blurry image of the robber that arguably does not look like the defendant. If the trial court or jury concludes, based on the abundant other evidence, that the defendant is indeed the robber, the appeals court should be reluctant to set aside the conviction, even if the appellate judges personally find the blurry video unsupportive of the prosecution's case.

But the existence of separate proof should not mean, per se, that probative video evidence should be completely disregarded. In that regard, the Florida Supreme Court has cautioned that "a [trial] judge who has the benefit of reviewing objective and neutral video evidence along with officer testimony cannot be expected to ignore that video evidence simply because it totally contradicts the officer's recollection. Such a standard would produce an absurd result."[175] Similar principles ought to guide appellate courts as well.

To summarize, the proper appellate scope of review of digital evidence depends largely on three main factors: (1) conclusiveness, (2) materiality, and (3) context. Case law will continue to develop in each jurisdiction, clarifying how those factors are to be applied, and how much deference is sensibly owed to the trier of fact in a wide and nuanced range of settings. A deference-versus-de novo dichotomy is too simplistic to guide appellate review.

---

173. *See, e.g.*, Leyba v. People, 489 P.3d 728, 732 (Colo. 2021) ("'[W]here the statements sought to be suppressed are audio and video-recorded, *and there are no disputed facts outside the recording controlling the issue of suppression*, [the Colorado Supreme Court is] in a similar position as the trial court to determine whether the statements should be suppressed.' In such cases . . . [the Colorado Supreme Court] may independently review the audio or video recording to determine whether the statements were properly admitted in light of the controlling law." (emphasis added) (citation omitted) (quoting People v. Madrid, 179 P.3d 1010, 1014 (Colo. 2008))).

174. *See, e.g.*, Rhynes v. State, 831 S.E.2d 831, 833 (Ga. 2019) ("[T]o the extent that legally significant facts were *proved by evidence other than the video recording*, the trial court as factfinder was entitled to determine the credibility and weight of that other evidence." (emphasis added) (citing State v. Chulpayev, 770 S.E.2d 808, 815 n.5 (Ga. 2015))); People v. Span, 955 N.E.2d 100, 107 (Ill. App. Ct. 2011) (holding where live testimony, in addition to a surveillance video, "had a role in resolving a disputed issue of fact . . . the proper standard of review is the well-settled one . . . of whether the evidence was sufficient for a finding of guilty beyond a reasonable doubt").

175. Wiggins v. Fla. Dep't of Highway Safety & Motor Vehicles, 209 So. 3d 1165, 1172 (Fla. 2017).

IV. TOOLS FOR APPELLATE JUDGES, STAFF, AND ADVOCATES: A CHECKLIST AND A CHART

The preceding discussion has examined many facets of appellate review of cases in which digital evidence was presented below and is part of the record on appeal.

In an effort to provide some useful guidance to appellate judges and practitioners, the author offers two tools that may assist them in the future: (1) a Checklist of considerations affecting how appellate courts evaluate video- and audio-recorded evidence, and (2) a Chart that depicts several variables that can affect the scope of review.

A. The Checklist

Figure #2: A Checklist for Appellate Review of Video-Recorded Evidence	
	Was the video admitted into evidence below?
	If not, was the video tendered but excluded?
	Was the video's authenticity established or uncontested?
	Was there a hearing on authentication?
	Was the video played in open court to the trier of fact?
	If it was not played in court, was the video supplied at the trial level as part of the record?
	Was the video narrated by a witness when it was presented?
	Did any expert witness discuss the video?
	If it is a jury trial, was the video discussed during closing arguments? Were portions played during the closing arguments?
	Did the jury request a playback?
	Was the video available to jurors during their deliberations?
	Did the tribunal's appealed decision rely on or discuss the video? What did the judge or hearing officer say about it?
	Does the record contain multiple videos of the same locations or events?
	Was the video evidence supplied on appeal? Is it technologically accessible?
	Do the appellate briefs refer to the video?
	Do the briefs specify portions of the video that are significant to the issues raised on appeal? What do they contend the video proves or disproves?
	Are there legal arguments on appeal about the authenticity or admissibility of the video?
	Are there legal arguments on appeal affected by the contents of the video?
	Is the lighting on the video adequate to discern the relevant persons, objects, or actions?
	Is the video camera too distant from the relevant persons, objects, or actions?
	Are the relevant images on the video clear or blurry?
	What are the video's camera angle(s)? Do they affect how the video is interpreted?
	Are the person(s) in the video identified? Is there a dispute about their identities?

	Was there testimony about the identification of the person(s)?
	When does each recording start and end? Does it omit significant events occurring at the scene beforehand or afterwards?
	Are there breaks or gaps in the recording? Are they significant?
	Was the video enhanced with magnification, slow motion, freeze-frames, or the like?
	Were screenshots taken from the video admitted into evidence?
	Does the video have an audio component? Are relevant words on the audio track, or the identities of the speaker(s), disputed? Do any words spoken in a non-English language need to be interpreted? Was a neutral transcript of the audio portion prepared?
	Before watching the video, did the appellate judge have expectations about what the video would show? Did the video confirm or challenge those expectations?
	How does the video evidence compare with testimony or other evidence in the record?
	Does the video evidence clearly contradict any of the tribunal's findings of fact? Clearly confirm any of those factual findings? Or is the video evidence ambiguous or inconclusive?
	If the video evidence clearly contradicts any of the findings of fact, is the contradiction of consequence to the issues on appeal?

The above Checklist provides over three dozen considerations that an appellate court may wish to think about when evaluating digital evidence, specifically video recordings.[176] These considerations include such things as whether the video evidence was admitted or proffered below, the evidence's authenticity, how the evidence was presented to the court or trier of fact, whether it was discussed by expert witnesses or narrated by a lay witness,[177] and whether it was discussed in summations. In addition, the Checklist covers how the video evidence has been presented on appeal, how the parties deal with it in their briefs, and what the parties contend the evidence proves or disproves.

Further, the Checklist provides reminders about factors that can diminish the probative value of video evidence, including poor lighting, distance, camera angles, unidentified persons in the frame, gaps in the recording, and the omission of important events that preceded or followed the recording. The Checklist also notes any measures that may have been taken to enhance the videos, such as magnification, slow motion, or freeze frames. For videos with an audio track, the Checklist considers whether the audio portion has been or should be transcribed or interpreted. In addition, the Checklist addresses potential instances of confirmation bias, by asking whether the

176. A similar Checklist could be developed for audio-recorded evidence, omitting the visual elements.

177. For a comprehensive discussion of the value and potential prejudice of video narration by a police officer who lacked personal knowledge of a crime scene depicted in the video, see *State v. Watson*, 298 A.3d 1049, 1068–78 (N.J. 2023). Among other things, the New Jersey Supreme Court instructed that such narration be limited to testimony about undisputed facts presented on the recording and to refrain from providing nonexpert opinion about ambiguous events in the footage. *Id.* at 1075–76.

appellate court had expectations about what the videos would show before observing them.

The Checklist then addresses the probative weight of the video evidence. In particular, the Checklist asks whether the videos clearly contradict or, alternatively, clearly confirm the factual findings of the tribunal below. On the other hand, the Checklist inquires as to whether the video evidence is inconclusive or ambiguous. If the video evidence does clearly contradict the findings of fact below, is that discrepancy of consequence to legal issues raised on appeal? The Checklist also calls for consideration of how the video evidence compares with the witness testimony and the other evidence adduced below.

Capable appellate advocates and wise appellate judges naturally would think about many of these listed considerations—with or without a Checklist—when handling cases on appeal with video evidence. Effective appellate briefing should focus on why the video evidence is or is not probative, and how that evidence does or does not affect the analysis of the issues on appeal. The briefs, ideally, will zero in on the possible limiting characteristics of the videos, such as lighting, distance, camera angles, and so on, with opposing briefs contending why the videos are nonetheless definitive and persuasive. That advocacy will aid the appellate court in its own review of the video evidence as part of the overall record.

Recognizing that the adversary system will ideally spotlight what the video evidence may or may not prove, the above Checklist might not have to be mechanistically consulted in every appeal. It is offered as an optional tool that may be helpful, possibly in training new judges and law clerks who review digital evidence.[178]

The Checklist should promote uniformity and thoroughness in the court's review process, so that salient features and possible shortcomings of the evidence are not overlooked. The Checklist also may be helpful to appellate counsel in shaping their arguments to the court about the significance of the evidence, or lack of it.

Because digital recordings are now so pervasive in our society and are frequently shared through emails, texts, and social media posts, there may be a tendency to regard a video or audio exhibit as "just another YouTube file" for our attention. But video and audio evidence is just that—evidence. It is not a form of entertainment or news. It is unlike a ticket to a concert or a sporting event.

The Checklist is therefore offered here as a handy resource, in the spirit of promoting rigor and thoroughness in the way digital evidence is used and treated on appeal.[179]

B. The Chart

Lastly, here is another resource: a Chart.

---

178. See *supra* Part II.C.6 regarding the prudent delegation of preliminary review of recordings by law clerks and staff attorneys. The Checklist might be a useful guide in training or instructing those assistants.

179. Perhaps this can be analogized to the difference between watching a movie solely for entertainment and watching it closely to write a professional critic's review. Both viewers will see the film, but the film critic must watch it with heightened attention and bring to bear the insights of a trained and experienced professional.

As noted above, the scope of appellate review of factfinding in cases with digital evidence in the record is, of course, guided by the applicable law of the jurisdiction.[180] Nothing in this Article is intended to repudiate that governing law. With that caveat in mind, the following is an attempt to present an analytic framework in the form of a Chart that might aid in the application of those governing standards.

As we have seen, the standards of appellate review are often affected by numerous factors. They include whether the digital evidence confirms or contradicts the lower tribunal's factfindings, whether the digital evidence is ambiguous or inconclusive, whether the digital evidence is material or consequential to the issues on appeal, the procedural context in which the digital evidence was presented below, and the evidential context in terms of what other (nondigital) evidence was presented concerning the disputed facts.

The following Chart endeavors to depict these considerations in tabular form:

Figure #3: Scope of Review Scenarios

	Summary Judgment Granted	Pretrial Suppression Ruling	Bench Trial or Agency Finding of Fact	Jury Verdict
Digital evidence ("DE") *confirms* tribunal's finding	Affirm	Affirm	Affirm	Affirm
DE clearly shows a discrepancy that *is not* consequential	Affirm	Affirm	Affirm (harmless error)	Affirm (harmless error)
DE clearly shows a discrepancy that *is* consequential	Reverse	Reverse or remand to reconsider? Consult scope of review standards.	Reverse or remand to reconsider? Consult scope of review standards.	Reverse? Consult scope of review standards.
DE is *ambiguous*	Depends on whether the judge relied on the DE	Depends on whether the judge relied on the DE	Depends on whether the judge relied on the DE	Harmless/harmful error analysis

180. *See supra* Part III.D.

The horizontal axis of the Chart corresponds to several procedural contexts in which the digital evidence ("DE") was presented below. Although they are not exhaustive, the illustrative categories the author has chosen for the Chart include (1) a grant of a summary judgment motion, (2) a trial judge's ruling on a suppression motion in a criminal case, (3) a trial judge's (or an administrative hearing officer's) finding of fact after a nonjury hearing or trial, and (4) a jury verdict.

The last category involving jury verdicts is perhaps the most challenging, because subject to certain exceptions, juries are not ordinarily asked on a criminal verdict form to make specific findings of fact through special interrogatories. Typically, criminal jurors vote on whether the prosecution has proved the defendant's guilt on each count of the indictment beyond a reasonable doubt, although, in a sense, those guilty/not guilty votes can sometimes be indicative of a "factual finding." In civil jury verdicts, special interrogatories on the verdict form are generally more common than in criminal trials, but they are still infrequent.

The vertical axis of the Chart specifies various possibilities about the DE itself. First, does the DE confirm the factfinding below? If not, then one should consider whether the DE clearly contradicts one or more of the tribunal's factual findings. Or, alternatively, is the DE unclear, ambiguous, or reasonably debatable? The vertical axis also considers whether any contradiction shown by the DE is material or consequential to the discrete issues raised on appeal.

The boxes within the Chart furnish possible answers to whether the appellate court should be inclined to affirm or reverse (or at least remand) the tribunal's finding of fact, based on these variables.

1. The First Horizontal Row (DE Confirms Tribunal's Findings)

The first horizontal row of boxes represents the easy possibility that the DE confirms the findings of fact of the trial judge, hearing officer, or jury. Logically, the DE should support in each context affirming the factual findings below, whether on a summary judgment ruling, a suppression ruling, a nonjury trial or hearing, or a jury verdict, and this may be emphasized by the party opposing the appeal. In the case of a jury verdict, the respondent or appellee might point to the DE as proof that the verdict was consistent with the weight of the evidence. So, referring back to the hypothetical motor vehicle stop described at the outset of this Article,[181] if the video recording (DE) confirms the trial court's findings of fact denying a defendant's suppression motion, then that would slot into the "Affirm" category in the second box on the first row.

The second and third rows of the Chart address situations in which the DE clearly contradicts one or more factual findings of the tribunal below. As we saw in Section III, above, in many jurisdictions such a "clear" discrepancy authorizes the appellate court to disregard the lower tribunal's factual finding.

181. *See supra* Introduction.

2. The Second Row (DE Clearly Shows an Inconsequential Discrepancy)

The second row concerns clear factual discrepancies shown by DE that are not of consequence to the issues raised on appeal. Logically, these discrepancies should not compel a reversal of the result below, since, by definition, they do not affect the merits of the appeal. For instance, this would govern our hypothetical scenario where the DE indisputably showed, contrary to the suppression judge's finding, that the police officer approached the vehicle from the driver's side and did have her gun drawn—if that particular error of fact does not undermine the legality of the motor vehicle stop. Where the second-row appellate context is not a pretrial motion but, rather, a final judgment after a bench trial or a nonjury trial (the two boxes on the far right in that row), the proven factual discrepancy is harmless if it is not of consequence to the merits. The trial judge's decision on the merits or the jury's verdict is not to be disturbed where the factual error is of no moment.

3. The Third Row (DE Clearly Shows a Consequential Discrepancy)

Next, the third row of the Chart depicts clear discrepancies that *are* of consequence to the issues raised on appeal. If the context is an appeal of a trial court's order granting summary judgment in which the motion judge relied on facts that are perceived on appeal to be clearly contradicted by the DE, the suggested outcome of the appeal is to reverse the grant of summary judgment and remand for further proceedings. Such a reversal is supported by the general principle to appraise the evidence in summary judgment motions in the light most favorable to the nonmoving party. Assuming it shows a material contradiction of a presumed fact, the DE has made the case more complicated and not so one-sided as to justify summary disposition.

Turning to the next two boxes in the third row, the Chart suggests that if DE clearly shows the tribunal's factual finding was erroneous on a subject of consequence to the legal issues on appeal, the appellate court may consider reversing the judgment and remanding the case to the trial court. For our hypothetical suppression case, this would be an appropriate course if the discrepancy between the video and the motion judge's findings is of consequence to the analysis of the search's validity. Depending on the nature of the DE, the appellate court might consider directing the trial court, on remand, to reconsider its ruling, this time keeping in mind the facts that the DE clearly proves or disproves. Nonetheless, there may be instances in which, on reconsideration, the trial judge might still reach the same decision for different reasons, despite the impact of the DE.

As for the last (far right) box on the third row, the appellate court should consider reversing a jury verdict if the DE presented on appeal clearly contradicts a factual underpinning of the verdict. For example, if the DE clearly shows that the defendant was not present during the crime, the verdict that found him to be the perpetrator (ignoring accomplice or co-conspirator liability theories) may be unsustainable.

An important caveat that affects most of the Chart's third-row contexts is the need for the appellate court to consult the applicable standards of review for its jurisdiction. As noted above, the federal and state appellate courts are not guided by uniform

expressions of the scope of review.[182] Some jurisdictions hew to a de novo approach for DE, and others abide by more deferential review practices. For that reason, the Chart cautions the user to consult those local standards of review when the DE on appeal clearly contradicts the finding of fact below.[183]

4. The Fourth Row (DE is Ambiguous)

Finally, the fourth row of the Chart concerns a scenario in which the digital evidence is ambiguous or inconclusive. For the first three boxes in that row, the disposition on appeal will logically depend on whether the judge below who ruled on the summary judgment motion, suppression motion, or bench trial actually relied on the DE.

More specifically, if the decision of the lower court judge or hearing officer incorrectly states that the DE conclusively proves or disproves a consequential fact, whereas the appellate court rules that the DE is merely ambiguous (as the majority perceived in *Arnstein v. Porter*),[184] then the outcome below may need to be set aside. Conversely, the ambiguity of the DE may not affect the trial judge or hearing officer's rationale for decision, and the decision can still be upheld. This requires a case-by-case assessment, looking to whether the trial judge or hearing officer relied on the DE; if not, the decision below may still be sound.

The far-right box on the Chart's fourth row addresses the context of a jury verdict where the prosecution argued to the jury that the DE was definitive, and the DE, on appeal, is determined to be inconclusive or ambiguous. What to do here?

Since deliberations are rightly confidential, we normally do not know whether the jurors relied upon or were affected by a particular item of digital evidence. In this jury context, the appellate court likely will need to resort to applicable principles of harmful or harmless error.[185] Those principles typically will examine how a piece of evidence fits in among the full breadth of proofs, and whether the defendant's guilt can rationally be supported, beyond a reasonable doubt, by the remaining evidence without reliance on the ambiguous DE. [186]

In sum, the Chart provides one more tool that may assist appellate judges and advocates in determining how digital evidence affects the traditional scope of review of a lower court's factual findings. Sometimes, such video and audio recordings will

182. *See supra* Part III.D.

183. The far-left box in the third row, which concerns the summary judgment context, seemingly is not subject to this caveat since it appears to be a universal principle that a motion of summary judgment must be considered by the court in a manner that views the record in a light most favorable to the nonmovant.

184. 154 F.2d 464 (2d Cir. 1946). In the interests of simplicity, the Chart does not address situations, such as that in *Scott v. Harris*, involving the procedurally uncommon situation in which an appellate court conducts interlocutory review of a trial court's *denial* of summary judgment. In that denial scenario, the ambiguity of the digital evidence could reasonably justify requiring the evidence to be presented to jurors for their own assessments.

185. *See* Chapman v. California, 386 U.S. 18, 22–24 (1967) (delineating such principles); *see also* Shinseki v. Sanders, 556 U.S. 396, 406–08 (2009) (same).

186. *See In re* Winship, 397 U.S. 358, 364 (1970) (stating the prosecution's constitutional burden to present evidence sufficient to establish an accused's guilt beyond a reasonable doubt).

confirm the correctness of the facts determined below; sometimes the digital evidence will contradict those findings in a consequential way; and sometimes the digital evidence will be ambiguous or inconsequential.

The Chart encompasses all of these possibilities. The author hopes it offers an analytic framework that might be instructive—whether it be used in law school classrooms, training programs for appellate counsel, or presented to new appellate judges as they undertake the responsibility of conducting frequent review of digital evidence.

CONCLUSION

Video and audio recordings are ubiquitous in our society. More and more, such digital proof created with modern technology is being presented to judges, hearing officers, and jurors who serve as triers of fact. The existence of such digital evidence has vast potential to improve the truth-finding process at hearings and trials. Recordings might conclusively show that some eyewitness accounts or recollections of events are untruthful or mistaken. Eyewitnesses, in turn, may become more precise in their testimony if they are shown such recordings before they are deposed or take the witness stand, though this practice would be subject to concerns about undue suggestiveness.

Yet, despite these benefits, digital evidence has operational and inherent drawbacks. At times, the recordings submitted on appeal are voluminous, cumbersome to access by judges and staff, and not accurately or helpfully cross-referenced. As more of such recordings are typically included in the record, appellate judges must decide how best to review them efficiently and fairly.

As this Article has shown, there are many considerations a reviewing court should bear in mind when evaluating such proof and its potential evidential limitations. Moreover, the standards of review of such digital evidence, particularly when it clearly contradicts factual findings made below, are varying and evolving. As case law is further refined concerning the appropriate review of such digital evidence, appellate courts and advocates will adapt their efforts to achieve justice accordingly.

This Article has been an effort to address the rising Digital Deluge and explore beneficial ways to review such recorded evidence on appeal. It has offered three specific tools that may be helpful to appellate judges and advocates: (1) a Model Rule regulating and channeling the submission of such video- and audio-recorded evidence to the appellate court, (2) a nonexhaustive Checklist of factors to guide the appellate consideration of video footage, and (3) a Chart delineating various scenarios for applying standards of review to digital evidence.

With the benefit of these resources, the tasks of our imaginary appellate judge from the Introduction who must consider digital evidence could be less daunting. She may have easier access to the recordings, aided by a Model Rule for submissions; a heightened awareness of the benefits and pitfalls of such evidence revealed through the Checklist; and a context-based analytical framework in the Chart, depicting appropriate standards of review.

As recording technology rapidly advances, and the Digital Deluge of recorded evidence grows with it, the court system will need to adapt its methods to deal with

such abundant videos and audio recordings fairly and efficiently. The process of appellate review in the years to come is likely to be much more complicated and time-consuming than simply the traditional work of judges only reading briefs, trial transcripts, and documentary exhibits. Appellate judges must now be keen watchers and listeners, too.

At its core, adjudication entails a search for truth and a fair application of principles of law to the facts that a tribunal determines to be true. Appellate courts exist to correct error in those determinations of fact and law made at the trial level. Undoubtedly, digital evidence will be an increasingly key part of the record that a reviewing court must consider in carrying out that responsibility and rectifying error.

This Article has been a modest effort by one appellate judge to ease, inform, and guide the process of reviewing digital evidence as it goes forward into the future. The Deluge is here, but it need not drown us.