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VIDEOCONFERENCING: LEARNING THROUGH SCREENS

Nancy Gertner*

INTRODUCTION

At an early demonstration of what has come to be known as "high tech" evidence, Sonia Hamlin¹ was emphatic. She urged the lawyers in no uncertain terms to make maximum use of the new technology in their jury presentations. More and more jurors, she said, were members of "Generation X," used to getting all their information through screens — television or video.² Since that was what they expected, that was the most effective means of communicating with them.

I agreed and disagreed; I was captivated and skeptical all at once, deriving from my experience of twenty-three years as a trial lawyer, and ten as a United States District Court judge. It is true that jurors — whether "Generation X-ers" or not — were getting more and more used to seeing information through screens.³ It is also

Through video and computer games and all the fast-paced and disjointed videos on MTV, young Americans have been processing information in a way that makes little sense to the uninitiated, but is really the wave of the future They devour information, not from the written word, but from TV screens and computer graphics.

Id. at 1982 n.28 (citing NeIL Howe & BILL STRAUSS, 13TH GEN: ABORT, RETRY, IGNORE, FAIL? 92 (1993)).

^{*} Judge, United States District Court; J.D. Yale Law School; M.A. Yale University.

¹ Sonia Hamlin is the author of What Makes Juries Listen (1985), and a well-respected jury consultant.

² I am using the term, "Generation X," simply as a starting point for my analysis of videoconferencing. I have serious problems generalizing about all individuals in a generation. Nevertheless, "Generation X" has been defined as referring to people born between 1961 and 1981. They are said to have "short attention spans, want immediate gratification," and need information packaged in a "spoon-fed manner." See R. Randall Kelso, Narcissism, Generation X, the Corporate Elite, and the Religious Right Within the Modern Republican Party: A Set of "Friendly" Observations for President Bush, 24 CARDOZO L. REV. 1971, 1982 (2003). Kelso quotes Leonard Steinhorn, a public affairs consultant, who said:

³ See Frank Herrera, Jr. & Sonia M. Rodriguez, Courtroom Technology: Tools for Persuasion, 35 Trial 66, 70 (May 1999) ("The era of electronic media has created a society that demands visuals. To avoid boring technologically sophisticated jurors, trial lawyers will continue to bring technology into the courtroom."); see also Jeffrey H. Kinrich, Dull Witnesses, 19 Litig. No. 3, at 38, 40-41 (1993) ("If they can follow testimony with their eyes as well as they [sic] ears, jurors — members of the TV generation — can absorb more information and stay more interested."); Robert F. Seltzer, Using Computer-Animated Evidence in the Courtroom, in Winning With Computers: Trial Practice in the Twenty-First Century 361, 361 (John C. Tredennick, Jr. & James A. Eidelman eds., 1991) (noting that jurors are better able to relate to and recall material presented in a television-type format or program).

true that technology had clearly enhanced lawyers' abilities to communicate with jurors, making the old discussions of "demonstrative aids" seem almost quaint.

But Hamlin's observations were only part of the story. My concerns were not just with the effective communication of information, as in a newsclip, or documentary, or television commercial. That was the lawyers' focus—transmitting their side's point of view in the most direct and persuasive way. As a judge I had a different perspective. I was concerned with empowering jurors to be decisionmakers.⁴ As decisionmakers, they have a unique role to play. Court contests, unlike television shows, often involve multiple narratives, two or even more versions of the facts. Jurors are charged with being active listeners in the sense that they have to evaluate credibility, critically analyze the information stream, distill it, consider the reasonableness of the explanation, etcetera. Passively receiving information is only one aspect of their job. And in fulfilling their complicated role, I was not entirely sure that all screens were alike, or worse, that any screen was the functional equivalent of in-person communication. My special concern—which is the subject of this article—is videoconferencing.⁵

I. POTENTIAL FOR ABUSE

As I said in United States v. Nippon:

While some argue that videotaping is just like the real thing, "just like" is not, in most situations, good enough. . . .

Put in more modern parlance, I, though an avid supporter of the "Courtroom of the Future," with a courtroom equipped with every manner and means of high tech accourtements [sic], believe that we should be cautious about the technology lest we begin to practice "virtual justice."

First, I want to put this discussion in context. All of the new technology — including videoconferencing — has the potential for abuse.

⁴ See B. Michael Dann, "Learning Lessons" and "Speaking Rights": Creating Educated and Democratic Juries, 68 IND. L.J. 1229, 1241–42 (1993) (noting the need for "active" jurors involved in the fact-finding process). Indeed, several commentators have suggested a wide variety of changes to maximize the interactive nature of the process. See, e.g., Shari Seidman Diamond et al., Juror Discussions During Civil Trials: Studying an Arizona Innovation, 45 ARIZ. L. REV. 1 (2003).

⁵ This technology is alternately called "videoteleconferencing." For the purposes of this article, I will use the former term.

⁶ United States v. Nippon Paper Indus. Co., 17 F. Supp. 2d 38, 42 (D. Mass. 1998).

A. Abuse of Technology: A Few Examples

- 1. A touch screen or computer enhancement directs the jury to the relevant evidence, but takes away the jurors' ability to learn at their own speed. In the past, a juror could pause and read a given document handed to him or her, as it lumbered from one to the other. Or a juror would be given a book of documents, enabling him or her to read the document before and the document after. With high-tech presentations, the lawyer controls the pacing, which may not enhance understanding at least for some jurors.
- 2. While lawyers using high-tech evidence were obliged to think more carefully about how to communicate with the juror high-tech preparation requires considerable advanced preparation. Some lawyers, mesmerized by the bells and whistles, think that all they need to do is to press buttons. They use the technology as a crutch and stop looking at the jury or interacting with the witnesses. They remind me of lawyers who are thoroughly prepared, but read their presentation without once looking up to see if they are making a difference.
- 3. There is significant potential for distortion. The New York Times recently reported that in a PowerPoint presentation given by NASA engineers to describe their investigation into the impact of the foam that struck the space shuttle's wing during a recent launch, a critical piece of information that the actual piece of foam was dramatically larger than anything that had been tested was relegated to the last point on the slide and plainly underestimated.⁷
- 4. There is a disjunction between the so-called "courtroom of the twenty-first century" and the jury deliberation room of the nineteenth century. More and more evidence is presented through high-tech means, while the jury is still relegated to pencils and flip charts. One hundred years ago, jurors were not permitted to take notes because of the concern that the more educated among them would then dominate. Are we inviting the same problem by introducing technology into the jury room? Will the more technologically savvy members lead the jury?

Nevertheless, I am prepared to count these issues as part of the growing pains of a new approach.¹⁰ Over time, lawyers will learn that high-tech tools are part of

⁷ John Schwartz, *The Level of Discourse Continues to Slide*, N.Y. TIMES, Sept. 28, 2003, § 4, at 12.

⁸ To be sure, some judges preclude jurors from taking notes even today.

⁹ See Nancy S. Marder, Juries and Technology: Equipping Jurors for the Twenty-first Century, 66 BROOK. L. REV. 1257 (2001).

¹⁰ The Judicial Conference of the United States urged greater use of electronic technologies in district courts in its May 1997 final report. See D. Brock Hornby, Recent

the menu of tools at their disposal. Sometimes PowerPoint is appropriate; sometimes an old-fashioned blackboard and squeaky piece of chalk is a more effective approach. Sometimes it is better to give the jurors notebooks with the exhibits while pointing out the relevant portions on the screen; sometimes an entirely electronic approach is best.

Videoconferencing, however, raises special concerns. The technology has improved at such a rapid clip. It offers the (perhaps false) promise of solving so many daunting challenges in the delivery of legal services.¹¹ It has been used in the presentation of bail arguments by prisoners in remote institutions,¹² or with indigent clients in states where courts are located at some distance.¹³ It has been used in

Judicial Conference Recommendations for Achieving Cost and Delay Reduction in the Federal Courts, 37 JUDGES' J. No. 2, at 12, 14 (1998) (noting that increased use of electronic technologies "can save a significant amount of time and cost in civil litigation"); see also 2 JACK B. WEINSTEIN & MARGARET A. BERGER, WEINSTEIN's FEDERAL EVIDENCE § 403.07[2], at 403-70-71 (2d ed. 2003) ("Modern techniques of presentation should not be excluded merely because they are effective. The purpose of the trial is to instruct the jury.").

- ¹¹ A New Jersey district court used videoconferencing to arraign the suspect in the Unabomber bombings. Since the defendant was in Sacramento, California, the cost savings were substantial. See Michael D. Roth, Comment, Laissez-Faire Videoconferencing: Remote Witness Testimony and Adversarial Truth, 48 UCLA L. REV. 185, 190–91 (2000).
- ¹² For some of the problems of this approach, see Douglas L. Colbert et al., *Do Attorneys Really Matter? The Empirical and Legal Case for the Right of Counsel at Bail*, 23 CARDOZO L. REV. 1719, 1726, 1733–34 (2002). The authors note:

Groups of twenty-five men enter and sit in several rows in a classroom-style "courtroom". Before the hearing begins, a video is shown and provides general information about the court process. Detainees then observe the presiding judge through a two-way video and audio transmission. The quality of the sound and picture transmission is often poor. From within the courtroom, the hearings move quickly, as the judge receives the recommendation of a neutral pretrial release representative, asks whether the detainee wishes to say anything, and then briefly explains the final decision. Occasionally, a retained lawyer or the detainee's family will appear at the near-empty bail review courtroom. Public defenders and prosecuting attorneys are usually not present.

Id. at 1733-34. (footnotes omitted).

The authors suggest that the outcomes of this system are more adverse to the defendants than they would otherwise be — although they link this problem to the absence of counsel, surely a critical factor. *Id.* at 1753. Nevertheless, it may be worth studying whether the outcomes would still be largely adverse even if there were counsel standing next to the defendant and communicating with the court through videoconferencing.

¹³ See, e.g., RICHARD ZORZA, MONT. LEGAL SERVS. ASS'N, VIDEO COURT APPEARANCE PROJECT PRELIMINARY ASSESSMENT AND RECOMMENDATIONS (2003), at http://www.zorza.net/mtvideo.doc (evaluating the Montana video project). The Montana Legal Services Association experimented with the use of videoconferencing equipment. A legal services lawyer at a remote location would participate in a court proceeding involving an indigent client. A paralegal would be in the courtroom assisting both counsel and client. He offers a number of creative suggestions such as having a pro bono attorney, who does not

trials involving vulnerable victims, like children.¹⁴ Videoconferencing is, after all, the next logical step in the high-tech courtroom — from the presentation of evidence on the screen, to the presentation of witnesses or lawyers or even judges at remote locations. The technology promises cost savings and greater efficiency in scheduling trials and hearings since the inability of witnesses to travel to a given courthouse or to dovetail court appearances with their schedules would no longer be an insurmountable obstacle.

I have had videoconferencing equipment in my courtroom in the Massachusetts District Court for nearly eight years. I have watched it transform a complex antitrust trial that was dependent upon a witness at a distant location, beyond the reach of the court's subpoena power. From its early use, I have been an enthusiastic supporter of videoconferencing.

But this symposium has given me an opportunity to step back and take a longer look. Have we adequately studied the impact of videoconferencing on jurors? Have we asked fundamental questions, such as: What information does videoconferencing convey? More importantly, what does it lack that live face-to-face confrontation in front of the jury provides? Is this a means of communication that best enables the viewer to evaluate the testimony and understand the context of trials, or is something lost in the medium?

My concerns are grounded in part, but only in part, on the Constitution's Confrontation Clause. The Founding Fathers were on the right track when they required some sort of confrontation between accuser and accused, even if content of the requirement has become less than clear, and its rationale has changed in modern times. But my concerns are also empirical, drawing on social science research about communication, and my own experience. In fact, I want to consider the impact of something decidedly old-fashioned, out of step with Generation X-ers. I want to consider the impact of presenting important testimony through videoconferencing on the "gravitas" of the courtroom. In the final analysis, should trials have the look and feel of the television evening news?

I will describe first the antitrust case in which the parties employed videoconferencing, review very briefly the Confrontation Clause and its implications for this technology, survey some of the social science research in the area, and then recount my own observations from what is obviously a very limited sample. Finally, I will end with a resounding call not to stop the technology train, but to slow it down in criminal trials until more research has been done.

know the substantive area, "second seat[ing]" the lawyer at the remote location in the courtroom. *Id.* at *5-6. At the same time, he calls for more study of the impact of videoconferencing on outcomes, as I do. *Id.*

¹⁴ For example, in the trial of Maryland v. Craig, 497 U.S. 836 (1990).

¹⁵ U.S. Const. amend. VI (granting the accused the right "to be confronted with the witness against him").

¹⁶ See infra notes 18-35.

B. United States v. Nippon

United States v. Nippon was a criminal antitrust action brought against a Japanese corporation, the Nippon Paper Company.¹⁷ The government sought to take the testimony of a critical witness in Japan through either a videotaped deposition pursuant to Federal Rules of Criminal Procedure 15(a), that would then be replayed to the jury or through the use of videoconferencing.¹⁸ The witness, Mr. Shigeru Hinoki, refused to come to the United States to testify.¹⁹ Although he was a cooperating witness, the government lacked the means to compel his attendance.²⁰ The defendant objected to the government's motion to take testimony by video deposition, but agreed to videoconferencing.²¹

The difference between the two techniques — videotaped deposition and videoconferencing — was significant.

A videotaped deposition involves an offsite deposition of a witness, recorded via videotape and transcribed by a court reporter. The deposition is attended by counsel for both sides who raise objections and examine the witness. The tape can be edited, and, if the Court rules that the witness' testimony is admissible, all or some of the videotape is played before the jury during trial.²²

As I describe below, the use of videotaped depositions in federal criminal trials is permitted by Rule 15 of the Federal Rules of Criminal Procedure in "exceptional circumstances;" its admission is controlled by the requirements of Federal Rules of Evidence 804(b)(1) as former testimony. While videotaped depositions raise concerns under the Constitution's Confrontation Clause, for the most part the case law suggests that the concerns are considered to have been addressed, particularly with respect to former testimony by the longstanding exceptions to the hearsay rule embodied in Rule 804(b)(1).²⁴

¹⁷ 17 F. Supp. 2d 38 (D. Mass. 1998).

¹⁸ Id. at 38. Rule 15(a)(1) of the Federal Rules of Criminal Procedure provides: A party may move that a prospective witness be deposed in order to preserve testimony for trial. The court may grant the motion because of exceptional circumstances and in the interest of justice. If the court orders the deposition to be taken, it may also require the deponent to produce at the deposition any designated material that is not privileged, including any book, paper, document, record, recording, or data.

¹⁹ Nippon, 17 F. Supp. 2d at 38.

²⁰ Id. at 38-39 (citing United States v. Filippi, 918 F.2d 244, 247 (1st Cir. 1990) ("The government has no power to compel the presence of a foreign national residing outside the United States.")).

²¹ Id. at 39.

²² Id.

²³ FED. R. CRIM. P. 15(a)(1).

²⁴ See supra at 17–20.

Videoconferencing offers many of the same advantages of a videotaped deposition but with additional characteristics. It enables an off-site witness to testify "live" during a trial, to be examined in real time by the lawyers, with the trial judge presiding, in front of the jury. In *Nippon*, the defense contended that Hinoki had given equivocal answers to the government in prior interviews.²⁵ Without judicial oversight, the prosecution could more easily shape the witness's testimony outside the presence of the jury.²⁶ Since the deposition was pretrial, the government could test out one approach, and if unavailing, try another at trial.²⁷

The use of either technique — videodeposition or videoconferencing — in lieu of live testimony at trial plainly raised Confrontation Clause issues to which I now turn.

II. CONFRONTATION CLAUSE AND ITS RATIONALE

Nippon Company strongly argued against the admission of a videotaped deposition of Hinoki under the circumstances of the case, claiming, *inter alia*, that it did not meet the requirements of Rule 15(a), nor did its admission comport with the Confrontation Clause. Ultimately, both parties agreed to videoconferencing and, as I describe below, avoided the constitutional issue. Nevertheless, given the seductiveness of the technology, its obvious advantages, and growing sophistication, I believed it was important to wrestle with the constitutional and policy issues.

The Confrontation Clause — its breadth, its rationale — is the subject of considerable constitutional debate, which this Article does not attempt to resolve. My goal is considerably more modest. The debate that the Confrontation Clause triggers is a critical one for judges, practitioners, and scholars alike when addressing videoconferencing: What does it mean for the defendant to be "confronted with the witnesses against him?" Is physical confrontation required or will "virtual presence" suffice? While the Founding Fathers presumed a link between confrontation and the truth-seeking function of criminal trials, how close is that link? What is the impact on the jury's decision making when the medium of confrontation is changed?

Scholars have debated the origin of the Clause and its breadth. In *White v. Illinois*, for example, the United States argued as *amicus curiae* that the purpose of the Confrontation Clause was limited — namely to prevent trial by ex parte affidavits.²⁹ Justice Thomas, concurring, cited to sixteenth-century English practice

²⁵ Nippon, 17 F. Supp. 2d at 39.

²⁶ *Id*.

²⁷ Id

²⁸ U.S. CONST. amend. VI.

²⁹ 502 U.S. 346, 352 (1992).

when magistrates interrogated witnesses without affording the defendant a right to be present or to engage in cross-examination.³⁰ Predictably, these trials devolved into the mere reading of depositions or confessions; the defendant did not "confront" his accusers in any setting.31

In Mattox v. United States, 32 an 1895 Confrontation Clause decision, the Supreme Court seemed to suggest a broader rationale — not only to require the accuser to confront the accused personally, but also to have this confrontation take place "face to face with the jury" so that the jury may look at the accuser, and evaluate his demeanor.³³ Nevertheless, the Court ultimately yielded on the "face to face with the jury" requirement in Mattox, upholding the admission into evidence the transcript of the testimony of the defendant's accuser, taken from an earlier trial of the same charges, after the witness had died.³⁴ Confrontation Clause concerns were satisfied by the fact that the defendant "once had" the opportunity to confront and cross-examine the witness; it was less important that the jury at the second trial witness that confrontation.³⁵ Themes that the Court articulated later are here that the constitutional requirement of physical confrontation before the jury could be modified by the "necessities of the case," to prevent a "manifest failure of justice," and in conformity to the evidentiary exceptions that were in place at the time the Constitution was adopted.36

In Coy v. Iowa, the Supreme Court seemed to suggest that both sides of the equation were important for Confrontation Clause purposes — physical confrontation between accused and accuser, and physical presence of the accused before the jury.³⁷ In Coy, a large screen was placed between the defendant and the witness stand when the two thirteen-year-old victims testified.³⁸ The defendant could see the witnesses dimly, but the witnesses were completely unable to see the defendant.³⁹ At the same time, however, the screen allowed the judge, the attorneys, and the jury to see both the witnesses' and the defendant's demeanor.⁴⁰ The Supreme Court rejected the arrangement, concluding that physical confrontation between defendant and witness, not just physical presence in front of the jury, was essential to the fact-finding process.⁴¹

³⁰ Id. at 361 (Thomas, J., concurring).

³¹ Id.

^{32 156} U.S. 237, 242 (1895).

³³ Id. at 242.

³⁴ Id. at 237.

³⁵ Id. at 244.

³⁶ Id. at 243-44.

³⁷ 487 U.S. 1012, 1016–20 (1988).

³⁸ Id. at 1014.

⁴⁰ Id. at 1014-15.

⁴¹ Id. at 1020.

With Maryland v. Craig, the Court equivocated on the requirement of "physical presence" before the jury. 42 When the physical arrangement with a remote witness involved a contemporaneous video feed, the arrangement was sustained: the six-year-old victim was allowed to testify by one-way closed-circuit television. 43 Closed-circuit television is like a one-way mirror. The witness was unable to see the defendant, but the defendant could see her (unlike the defendant in Coy). 44 At the same time, the judge and jury saw the witness and her demeanor, but not in person — on the television screen. 45

The Court found that the Confrontation Clause did not provide an absolute right to a face-to-face meeting of the accused and the accuser in front of the jury, as Coy seemed to suggest. At Rather, the Clause had a variety of components, only one of which was physical presence. And even as to that requirement, the Clause expressed only a constitutional preference for physical confrontation. The goal of confrontation was to ensure the "reliability of the evidence," which could be satisfied so long as the following requirements were met: (1) ensuring that the witness will give the testimony under oath; (2) ensuring that the witness will be subject to cross-examination; (3) making certain that the jury will have the chance to observe the demeanor of the witness, which aids the jury in assessing credibility; and (4) by requiring that the accuser testify in the presence of the accused, reducing the risk that a witness will wrongfully implicate an innocent defendant.

The first, second, and even the fourth purpose described in *Craig* — requiring a witness to testify under oath, permitting cross-examination, requiring accused to confront accuser — do not depend upon the location of the testimony, whether it be in court or from a remote location. A witness in a videotaped deposition or in a videoconferenced interview is under oath. Likewise, the parties have an opportunity to cross-examine a witness in either setting. Moreover, Federal Rules of Criminal Procedure 15(c) gives the defendant the right to be present during a

⁴² 497 U.S. 836, 844 (1990).

⁴³ Id. at 857.

⁴⁴ Id.

⁴⁵ Id. at 841.

⁴⁶ Id. at 845-46.

⁴⁷ Id. at 841-42.

⁴⁸ Craig, 497 U.S. at 850.

⁴⁹ Id. at 845-46, 851 (citing California v. Green, 399 U.S. 149, 158 (1970)).

⁵⁰ Id. at 846. More recently, the court has addressed the Confrontation Clause in connection with the admissibility of a recorded statement of defendant's wife during a police interrogation. The court overruled Ohio v. Roberts, 448 U.S. 56 (1980), in favor of a test requirement that testimonial evidence to be admissible, must be subject to a prior opportunity for cross-examination. Crawford v. Washington, 124 S. Ct. 1354 (2004).

videotaped deposition.⁵¹ Only the third purpose — giving the jury an opportunity to judge the witness's demeanor — arguably implicates the debate about the physical location of the witness relative to the fact-finders and raises the question as to whether "virtual presence," presence through a video screen, is enough.⁵² In *Craig*, the Court suggested that it was sufficient. And, as it had said in *Craig*, the right to and the need for physical confrontation must "be interpreted in the context of the necessities of trial and the adversary process."⁵³

Plainly the language which characterized decisions about the various exceptions to the hearsay rule (former testimony, statements in the face of impending death, etcetera), the language of "necessity," and demands of the adversary process, affected decisions concerned with the conduct of trials and the need for live testimony. In fact, in the final analysis, the constitutional requirement of confrontation may well have become so diluted as to permit either what one critic decried as a kind of "virtual justice" and others have welcomed as bringing the courtroom into the twenty-first century. 55

III. RULE 15 AND THE CONFRONTATION CLAUSE

As I noted above, the practical turn in the Confrontation Clause jurisprudence has long been reflected in cases concerning the exceptions to the hearsay rule, exceptions that obviously excused the requirement of face-to-face confrontation under certain conditions.⁵⁶ Consistent with this trend, Criminal Procedure Rule 15(a) allows the deposition of a prospective witness in a criminal case under

⁵¹ FED. R. CRIM. P. 15(c)(1) provides that with respect to a defendant in custody, "[t]he officer who has custody of the defendant must produce the defendant at the deposition and keep the defendant in the witness's presence during the examination," unless the defendant is disruptive or waives his right in writing to be present. A defendant who is not in custody "has the right upon request to be present at the deposition, subject to any conditions imposed by the court." FED. R. CRIM. P. 15(c)(2).

⁵² Obviously, these purposes are intertwined; physical confrontation was arguably connected to truth telling as well. Forcing an accuser to stand face-to-face with the accused was part of the belief that it is more difficult to tell a lie to a person's face than behind his back. Coy v. Iowa, 487 U.S. 1012, 1019 (1988). And one of the "critical goal[s]" of cross-examination was seen as essential to bring out the demeanor of the witness in front of the fact-finder. Ohio v. Roberts, 448 U.S. 56, 63 n.6 (1980).

⁵³ Craig, 497 U.S. at 850.

⁵⁴ See FED. R. CRIM. P. 26 Advisory Comm. Notes.

⁵⁵ See, e.g., Lynn Helland, Remote Testimony—A Prosecutor's Perspective, 35 U. MICH. J.L. REFORM 719, 725 (2002) (speaking in favor of proposed Federal Rule of Criminal Procedure 26(b), particularly for criminal prosecutions brought against foreign actors).

⁵⁶ See Roberts, 448 U.S. at 66.

"exceptional circumstances" subject to certain requirements⁵⁷ and further permits its introduction at trial where the requirements of the former testimony exception. Evidence Rule 804(b)(1), have been met, including the requirement that the testimony was taken under conditions that approximate trial conditions to a significant degree.⁵⁸ In United States v. McKeeve, for example, the First Circuit sanctioned the admission of a deposition of an otherwise unavailable foreign witness, where the U.S. government had attempted to secure face-to-face confrontation with the deponent in a foreign country, but the British authorities refused to comply.⁵⁹ The prosecution provided requisite telephonic links between the defendant's prison cell and the court during the deposition. 60 The deposition itself complied with the Craig confrontation standards, including the administration of an oath, unlimited direct- and cross-examination, the ability to lodge objections. oversight by a judicial officer, the compilation of a transcript by a trained solicitor, and linguistic compatibility. 61 The exceptional circumstances of this case included the good faith efforts of the U.S. government, the intransigence of the British government, the need for the witness, and the presence of other safeguards.⁶²

Using Rule 15 as a model, in *United States v. Gigante*, the court affirmed the admission of an ill witness's testimony via two-way, closed-circuit television from a remote location.⁶³ The witness was a critical cooperating witness, dying of cancer, and under medical supervision at an undisclosed location.⁶⁴ A physician indicated that it would be medically unsafe for him to travel to New York for testimony.⁶⁵

- (a)(1) When taken. In General. A party may move that a prospective witness be deposed in order to preserve testimony for trial. The court may grant the motion because of exceptional circumstances and in the interest of justice. If the court orders the deposition to be taken, it may also require the deponent to produce at the deposition any designated material that is not privileged, including any book, paper, document, record, or recording or data....
- (e) Manner of taking. Unless these rules or a court order provides otherwise, a deposition must be taken and filed in the same manner as a deposition in a civil action, except that: (1) A defendant may not be deposed without that defendant's consent. (2) The scope and manner of the deposition examination and cross-examination must be the same as would be allowed during trial.

FED. R. EVID. 15.

⁵⁷ The Rule provides:

⁵⁸ FED. R. EVID. 804(b)(1).

⁵⁹ 131 F.3d 1 (1st Cir. 1997).

⁶⁰ Id. at 9.

⁶¹ Id. at 9-10.

⁶² Id. at 8-10.

^{63 166} F.3d 75, 80 (2d Cir. 1999), cert. denied, 528 U.S. 1114 (2000).

⁶⁴ Id. at 79.

⁶⁵ Id.

The court concluded that the trial court could have allowed a videotaped deposition under Rule 15(a): there were exceptional circumstances, the witness's testimony was critical to the prosecution's case, and the witness fit the requirements for unavailability of Evidence Rule 804(a). 66 But since the witness was in a secret location, to which the defendant arguably would have to be brought, and given the defendant's own ill health, the court concluded that a closed-circuit television afforded more protection than a deposition. 67

The Second Circuit agreed: The two-way closed-circuit television procedure of an ill witness met all of the characteristics of in-court testimony — the witness was sworn, subject to cross-examination, and testified in full view of the jury, court, defense counsel, and defendant albeit through the video screen — and met the *Craig* requirements. Indeed, the *Gigante* procedure was even better; this was a two-way system, in which the witness saw all of the court players, rather than the one-way system affirmed in *Craig*. But while the court upheld the procedure as constitutional, it offered a cautionary note, not unlike my own: "Closed-circuit television should not be considered a commonplace substitute for in-court testimony by a witness. There may well be intangible elements of the ordeal of testifying in a courtroom that are reduced or even eliminated by remote testimony." The same court of the court

IV. PROPOSED RULE 26(B)

Proposed Rule 26(b) of the Federal Rules of Criminal Procedure effectively sought to codify the procedure used in *Gigante*. Its goal was to permit live videoconferencing under the same terms as videotaped depositions. Plainly, videoconferencing better approximates trial conditions than does a videotaped deposition. The witness is under oath. He or she is subject to cross-examination during the trial of the matter itself. Accuser and accused can confront each other, albeit through the screen. The jury can watch the encounter as it occurs. A judge would also be present on screen, obviating one of the concerns associated with standard depositions. The judge hearing the case would rule on the testimony as it was elicited. The problem of unfairly shaping trial testimony in advance would be minimized since the testimony would be taken mid-trial, after the parties had

⁶⁶ Id. at 81-82.

⁶⁷ Gigante, 166 F.3d at 75, 81.

⁶⁸ Id. at 80.

⁶⁹ Id. at 81.

⁷⁰ Id.; see also Harrell v. State, 709 So. 2d 1364 (Fla. 1998), cert. denied, 525 U.S. 903 (1998) (sustaining a robbery conviction based largely upon the two-way video testimony of witnesses testifying from Argentina). The court explained that the standard for permitting remote witness testimony required a finding similar to the "unavailability" standard needed for the admission of a videotaped deposition. Id. at 1370.

⁷¹ FED. R. CRIM. P. 26 Advisory Comm. Notes.

already committed to a theory of the case. Real-time testimony would provide the Court and the jury with the simultaneity of a live witness.⁷²

The proposed Rule would require the proponent of videoconferencing to show "exceptional circumstances,"⁷³ as under Rule 15, and further, to show that the witness would be unavailable within the meaning of Evidence Rule 804(a)(4)–(5). It states:

Rule 26. Taking Testimony

- (b) Transmitting Testimony from a Different Location. In the interest of justice, the court may authorize contemporaneous, two-way video presentation in open court of testimony from a witness who is at a different location if:
 - (1) the requesting party establishes exceptional circumstances for such transmission;
 - (2) appropriate safeguards for the transmission are used; and
 - (3) the witness is unavailable within the meaning of Federal Rule of Evidence 804(a)(4)-(5).⁷⁴

But the Supreme Court rejected the Rule, with Justice Scalia filing a pointed critique. He indicated that the proposed Rule was of "dubious validity under the Confrontation Clause." First, the proposal did "not limit the use of testimony via video transmission to instances where there has been a 'case-specific finding' that it is 'necessary to further an important public policy," as the Court required in Craig. The implication is that the only situations in which the courts should consider videoconferencing are those where there are fundamental problems, as in child abuse prosecutions where a vulnerable witness would never testify face-to-face with the defendant, as compared with the kinds of day-to-day practical problems reflected in the case law — the ill witness, or the foreign witness, or witness just discomfited by the proceedings. Justice Scalia rejected the extension

⁷² In Gigante, for example, the defendant was also infirm so he could not be brought to the witness. 166 F.3d at 81. The court could have permitted taking the deposition of the witness under Rule 15. Instead, the judge permitted videoconferencing of the testimony live, mid-trial. *Id.* at 80. The jury could see the witness, the witness could be cross-examined in front of the jury, and both witness and defendant were on the screen at the same time. *Id.*

Amendments to Rule 26(b) of the Fed. Rules of Criminal Procedure, 207 F.R.D. 89, 100 (2002) [hereinafter Rule 26(b) Amendments].

⁷⁴ *Id*. at 99.

⁷⁵ *Id*. at 93.

⁷⁶ Id. (quoting Maryland v. Craig, 497 U.S. 836, 850, 857-58 (1990)).

⁷⁷ See, e.g., United States v. Gigante, 166 F.3d 75 (2d Cir. 1999).

⁷⁸ See, e.g., United States v. Nippon Paper Indus. Co., 17 F. Supp. 2d 38 (D. Mass. 1998).

of the "necessity" approach adopted in *Craig* to "out-of-court" declarations.⁷⁹ It was one thing to adopt exceptions to live testimony for long-standing hearsay exceptions; and another to carve out additional exceptions to the requirement of live trial testimony. Justice Scalia was also concerned that proposed Rule 26 seemed to allow the use of video transmission whenever the parties are merely unable to take a deposition under Rule 15.⁸⁰ "Indeed even this showing is not necessary: the [Judicial Conference] Committee says that video transmission may be used generally as an alternative to depositions."⁸¹ Finally, he was concerned that proposed Rule 26(b), unlike Rule 15, did not require the accused to be present physically.⁸² While Rule 15 accords the defendant a right to face-to-face confrontation during the deposition,⁸³ proposed Rule 26(b) did not.⁸⁴ Justice Scalia added:

As we made clear in *Craig*, a purpose of the Confrontation Clause is ordinarily to compel accusers to make their accusations in the defendant's presence — which is not equivalent to making them in a room that contains a television set beaming electrons that portray the defendant's image. Virtual confrontation might be sufficient to protect virtual constitutional rights; I doubt whether it is sufficient to protect real ones.⁸⁵

⁷⁹ "There is thus no basis for importing the 'necessity requirement' announced in [Craig] into the much different context of out-of-court declarations admitted under established exceptions to the hearsay rule." Rule 26(b) Amendments, 207 F.R.D. at 94 (quoting White v. Illinois, 502 U.S. 346, 358 (1992)).

Professor Friedman considers the Craig decision itself to be of "dubious" legitimacy. Richard D. Friedman, Remote Testimony, 35 U. MICH. J.L. REFORM 695, 706 (2002). He is concerned that the Evidence Rule 804's definition of "unavailability," applied to this situation, might permit a prosecutor to argue for the admission of remote video testimony of a witness whose only "infirmity" is that he is uncomfortable testifying in person in court. Id. at 710. Indeed, Professor Friedman proposes a number of changes in the Rule to prevent moving down this — and other — slippery slopes: 1) not allowing remote testimony for every witness who claims mental infirmity; 2) requiring that the jury see anyone present with the witness to prevent hidden coachin; and 3) permitting the defense to use videoconferencing under circumstances where the prosecutor may not. Id. at 711-16.

⁸⁰ Rule 26(b) Amendments, 207 F.R.D. 89, 93 (2002) (citing FED. R. CRIM. P. 26 Advisory Comm. Notes).

⁸¹ Id.

⁸² Id. at 94.

⁸³ Justice Scalia quoted the relevant portion of FED. R. CRIM. P. 15(b): The officer having custody of a defendant shall be notified of the time and place set for the examination and shall, unless the defendant waives in writing the right to be present, produce the defendant at the examination and keep the defendant in the presence of the witness during the examination

Id. at 94-95.

⁸⁴ Id. at 93-94.

⁸⁵ Id. at 94 (citation omitted).

There is a substantial question about whether Justice Scalia's constitutional concerns are valid — particularly given the striking evolution of Confrontation Clause jurisprudence in dealing both with the hearsay exceptions and trial testimony. Moreover, to the extent that there were constitutional concerns, they could be resolved by narrowing the proposed Rule's reach — to truly exceptional circumstances; to require the defendant's physical presence with the witness, or an explicit waiver; to narrowly construe the "unavailability" requirement of Rule 804, etcetera.

However the constitutional debate is resolved, the underlying policy question remains. With videoconferencing we seem to move—almost seamlessly—further and further away from the paradigm of face-to-face confrontation of accused and accuser in the physical presence of a jury. It is not unreasonable to seek to understand the impact of the changes. In the *Nippon* case for example, the government argued necessity; the witness was an important one to its case. But like Justice Scalia, I was concerned about an argument of expediency alone. In a global economy, more and more trials would be expected to involve foreign witnesses, in ever more distant locations. There was at least the risk that trials of foreign corporations would always devolve into "virtual proceedings" because of the expense and difficulty of bringing witnesses to American courts. And, I was concerned that those are precisely the cases that may need a face-to-face airing—complex issues involving the translation of foreign languages, cultural barriers to communication. I wanted, and continue to want, more information.

V. THE LESSONS OF SOCIAL SCIENCE

That there is a difference between face-to-face communication and communication through videoconferencing is clear. First, there is anecdotal evidence. In a telling scene in the movie "Twelve Angry Men," the jurors were discussing the testimony of an old man who claimed to have heard a fight in the apartment above him, and then a loud noise, like a body hitting the floor. He reported that he ran to his apartment door just in time to see the defendant running down the stairs. One of the jurors, himself an elderly man, reminded the others about the way the elderly witness had walked to the stand before testifying; dragging one of his feet, he walked in a labored fashion, his gait slowed by some

⁸⁶ See Helland, supra note 55, at 732–35 (arguing that Rule 26(b) was never intended to be broader than Rule 15, and in any case, would have to interpreted consistently with the Confrontation Clause's requirements). In any event, she contends, "virtual presence" is better than "no presence" at all. Id. at 737.

⁸⁷ See United States v. Nippon Paper Indus. Co., 17 F. Supp. 2d 38 (D. Mass. 1998).

⁸⁸ TWELVE ANGRY MEN (MetroGoldwyn Mayer 1957).

disability. It was an observation that would have been missed if the only aspect of the witness that the jurors saw was his face.⁸⁹

Sometimes a witness communicates something different from what he or she intended because of cultural differences — whether the witness looks directly at the questioner, when the witness pauses, how comfortable witnesses from different countries are with public displays of emotion. It is difficult enough for jurors to evaluate demeanor with respect to someone from their own neighborhood, or state, or country. It is complex to evaluate witnesses from different cultures. And when the witness speaks a different language, the problem is compounded: how does one translate intonation from one language to another?

Moreover, while the Confrontation Clause's emphasis on testimony under oath may be quaint in the twenty-first century — who among us believes that the oath will prevent a determined perjurer? — there is a related impact that I have observed. Testimony in a courtroom, in the gravitas of that setting, has an impact on all participants. We are used to looking at screens, in our bedrooms and living rooms, our offices, the train station, in restaurants. The court, however, is different as seen with "the formality that attaches to the ceremony, the robed judge, the witness' oath, the public's scrutiny, the creation of an appellate record formed in a moment experienced simultaneously by all parties." The courtroom suggests to everyone a different set of rules, a more rigorous analysis. I do not want to rhapsodize too much on this issue; again, I wish only to raise it as a caution: how can we preserve this atmosphere without losing the advantages of videoconferencing?

⁸⁹ Some have suggested that television — and videoscreens necessarily — present antiseptic, distorted versions of reality. See L.J. Schrum et al., The Effects of Television Consumption on Social Perceptions: The Use of Priming Procedures to Investigate Psychological Processes, 24 J. OF CONSUMER RESEARCH 448 (1998).

⁹⁰ United States v. Nippon Paper Indus. Co., 17 F. Supp. 2d 38, 40 (D. Mass. 1998).

John Wigmore suggests that the "subjective moral effect" of confronting the accused is capable of "unstring[ing] the nerves of a false witness." 5 JOHN H. WIGMORE, EVIDENCE IN TRIALS AT COMMON LAW § 1395 n.2 (Chadburn ed., rev. 1974). But even Wigmore conceded that the effect would be more due to the witness's presence before a formal court or tribunal than actually to beholding the accused. *Id.* § 1396.

⁹¹ Professor Lederer has put it succinctly:

[[]W]e lack any experimental evidence that might indicate whether remote witnesses are more or less likely to tell the truth than in-court witnesses. Effective administration of the oath may be a significant problem; absent a treaty or special statute, cross-jurisdictional perjury may not be subject to prosecution. Further, transmission from commercial videoconferencing centers or business surroundings lacks the traditional judicial surroundings thought to convey the seriousness of court testimony.

Fredric I. Lederer, The Road to the Virtual Courtroom? A Consideration of Today's — and Tomorrow's — High-Technology Courtrooms, 50 S.C. L. Rev. 799, 820 (1999) (footnote omitted).

We can learn from social science data on the relationship between modes of communication and the listener's ability to discern deception. Cues to deception are complex. In fact, "those behaviors which are popularly believed to manifest a speaker's deception are qualitatively and quantitatively different than those which are actually observed during deception." Much of the literature disparages the ability of any fact-finder to determine when a speaker is lying and when he or she is telling the truth. ⁹³

To be sure — and here I may be rhapsodizing again about courtroom procedures — these studies are not entirely persuasive. The issue in court is not always a binary one — whether the witness is lying or telling the truth. Sometimes the trial is about shades of gray, exaggeration, or even the context in which a given decision was made. Moreover, there are important limitations to the behavioral studies that challenge the ability to determine deception. They are not set in trials after the fact-finders have heard other evidence or argument, or after they have been instructed in the formalities of the law. The experiments rarely include cross-examination; the fact-finders are individuals, not collectivities like juries who must come to an agreement by consensus. The experimental subjects respond spontaneously, while trial witnesses are prepared by the lawyers. This is not to suggest that jurors are better at evaluating credibility than the social science evidence suggests — only that they may do so differently than the research indicates and that more research should be done.

In any event, even if fact-finders of all kinds are not always adept at identifying deception, one thing is clear that effort is helped by certain forms of

⁹² 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, 1194 (1993).

⁹³ Studies have been conducted that suggest, as a general rule, people are poor human lie detectors. See Bella M. DePaulo et al., The Accuracy-Confidence Correlation in the Detection of Deception, 1 PERSONALITY & Soc. PSYCHOL. REV. 346 (1997). This is so because they focus on the wrong cues — eye contact and facial expressions. See Saul M. Kassin, Human Judges of Truth, Deception, and Credibility: Confident but Erroneous, 23 CARDOZO L. REV. 809 (2002). "Empirical findings demonstrate that behavior cues used by jurors and other observers to perceive and measure deceptive discourse 'are more strongly associated with judgments of deception than with actual deception." Blumenthal, supra note 92, at 1162 (quoting Miron Zuckerman et al., Verbal and Nonverbal Communication of Deception, 14 ADVANCES IN EXPERIMENTAL SOC. PSYCHOL. 1, 16 (1981) (emphasis added)); see also Michael J. Saks, What Do Jury Experiments Tell Us About How Juries (Should) Make Decisions?, 6 S. CAL. INTERDISC. L.J. 1 (1997–1998) (reviewing methodologies employed in studies of how jurors decide cases).

⁹⁴ See Olin G. Wellborn III, *Demeanor*, 76 CORNELL L. REV. 1075, 1079 (1991). Wellborn identifies four major differences between trials and the typical psychological experiment setting: "context, cross-examination, deliberation, and preparation." *Id.*

communication.⁹⁵ One research pair developed a model of nonverbal behavior that categorized various actions into different channels: face, body, and voice.⁹⁶ These channels, they suggested, are controllable by the witness to different degrees. One channel may be easier to control than another and thus may show less about the speaker's intent, than a more "leaky" channel.⁹⁷

Studies have demonstrated that facial expressions — which video screens easily display — are the least "leaky;" that is, the easiest channel to control by the witness bent on deception;⁹⁸ the body is less controllable or "leakier" than other channels of communication;⁹⁹ and the voice (speech hesitations, speech errors, and the pitch of the speaker's voice) is the "leakiest" of the three channels. ¹⁰⁰ This was so even with witnesses highly motivated to lie. ¹⁰¹

While videoscreens show all aspects — the face, the body, the voice — they do so with varying degrees of success. Depending upon the quality of the transmission, you see the witness's face, and hear the tone of voice. The screen necessarily limits the jurors' ability to see the witness's body, and the relationship of all three channels of nonverbal expression. Plainly, the image can be orchestrated — by decisions about lighting, the size of the image, the perspective. 102

Nevertheless, whatever the combination, it is clear that in live testimony, face-to-face transmission plainly increases the information available to the fact-finder, as Justice Blackmun's dissent in *Coy* seems to imply: detection of deception is solely a function of the accessability of the fact-finder to the witness and his behavior.¹⁰³

⁹⁵ Studies have tested subjects' abilities to detect deception by showing full video and audio, or some permutation thereof; i.e., only audio, only the body and audio, only the face, only a transcript. Blumenthal, *supra* note 92, at 1190–91.

⁹⁶ Id. at 1189 (citing Paul Ekman & Wallace V. Friesen, The Repertoire of Nonverbal Behavior: Categories, Origins, Usage, and Coding, 1 SEMIOTICA 49 (1969); Paul Ekman & Wallace Friesen, Nonverbal Leakage and Clues to Deception, 32 PSYCHIATRY 88 (1969)).

⁹⁷ Id. at 1189-90.

⁹⁸ Id. at 1190 (citing Bella M. DePaulo et al., Decoding Discrepant Nonverbal Cues, 36
J. PERSONALITY & Soc. PSYCHOL. 313 (1978)); Ekman & Friesen, supra note 96;
Zuckerman, supra note 93, at 5.

⁹⁹ Id. (citing Ekman & Friesen, supra note 96).

¹⁰⁰ Id. at 1190 (citing Miron Zuckerman et al., Controlling Nonverbal Displays: Facial Expressions and Tone of Voice, 17 J. EXPERIMENTAL SOC. PSYCHOL. 506 (1981)).

¹⁰¹ Id. at 1196 (citing Zuckerman et al., supra note 93, at 12-14).

¹⁰² See, e.g., Roth, supra note 11. Roth argues that "in light of empirical studies from social sciences addressing nonverbal communication and current trial practices, remote witness testimony should not be separately regulated." *Id.* at 188. He concludes that videoconferencing may simply be considered as "an additional tool in the advocate's repertoire of trial tactics." *Id.* at 188–89. Each side tries to push the envelope; each side pushes back. The court decides when the pushing has gone too far.

¹⁰³ Coy v. Iowa, 487 U.S. 1012, 1029 (citing Mattox v. United States, 156 U.S. 237, 242-43 (1895)). The Court noted "that the Confrontation Clause was designed to prevent the

VI. PRACTICAL SOLUTION AND THE JURY'S RESPONSE

As should be clear, I raise these issues not to suggest an end to videoconferencing. Far from it. It has proven to be a boon in many cases, to provide court access to people who otherwise would not have it, such as prisoners and individuals who are hospitalized. Rather, as I have said at the outset, I want to raise a cautionary note — to call for more studies of its significance in enabling jurors to evaluate testimony, to improve the technology so it communicates more and more of the "cures" to deception, and to create rules for its use.

In Nippon, the defendants ultimately withdrew their objections to videoconferencing; they too had witnesses in Japan whom they wanted to call. Videoteleconferenced testimony from Japan involved, in effect, two screens — one was the video screen and the other, a nontechnological barrier, the "screen" of translation. But for the assent of both sides, I was not at all certain I would have permitted it.

"One problem remained. The defendant insisted that the jury be present during the video teleconference with the witness, the Court and counsel. 'Real time' videoteleconferencing presented extraordinary logistical problems: The witness was in Tokyo, Japan, which is 13 hours ahead of Boston time. Moreover, the Government represented that the witness was infirm and would not be able to appear for his testimony in the middle of the night; the earliest he could appear was at 7:30 a.m. or 6:30 p.m. Boston time.

"I declined to ask the jurors to stay into the evening, or to require that they travel to and from the courthouse at night. Since the defendant had already waived the principal components of its Confrontation Clause rights by agreeing to the appearance of witnesses through a videoscreen, I held that he had also waived the

use of ex parte affidavits, to provide the opportunity for cross-examination, and to compel the defendant 'to stand face to face with the *jury*'" (citing to California v. Green, 399 U.S. at 158) (emphasis added)).

United States v. Nippon Paper Indus. Co., 17 F. Supp. 2d 38, 39 (D. Mass. 1998).

¹⁰⁵ As I noted:

To a degree, the presence of a translator already compromised the defendant's confrontation rights. While the jury heard the witness speaking in Japanese, immediately followed by the English translation, it was likely to miss the witness' [sic] intonations, his tone of voice, or the emphasis he placed on words in a sentence.

Id. at 41.

Indeed, this point was especially clear "during the Government's heated examination of Mr. Hinoki in which the prosecution's sharp language and tone were tempered by the time it took to translate questions, the cadence of the interpreter and the complexities associated with translating rhetorical questions into a language that is structured differently than English." *Id.* at 41 n.5.

right to confront the accuser in 'real time.' Under the circumstances, that one additional component—having that encounter occur in front of the jury—was not constitutionally compelled. If exceptional circumstances justified the admission of a videotaped deposition in *McKeeve*, an inferior technology, then it surely justified the admission of the taped videoteleconferencing in this case. The resulting procedure was a constitutional hybrid, borrowing from the precedent associated with Rule 15 videotaped depositions, marrying it to the advantages of videoteleconferencing." 106

Thus, I allowed the videoconferencing of the witness from the U.S. embassy in Tokyo between the hours of 6:00-9:30 p.m. (EST), but the proceedings were taped, edited and replayed before the jury during normal court hours.

The jury in the *Nippon* case was unable to come to a verdict. With the permission of the parties, the lawyers and the court spoke with the jury on the record. ¹⁰⁷ They reported that they found the videoconferenced testimony very difficult to follow, and cited to the problem of fully understanding a foreign speaker through a video screen. ¹⁰⁸ They liked the high-tech presentation of documents, but appreciated having a book of documents in addition so that they could read the document before and the one after and put the testimony in context at their own pace. ¹⁰⁹

I am not suggesting that the *Nippon* approach is germane to all situations, all cases. Indeed, just the opposite. This tool — videoconferencing — like all others

A JUROR: I think the technology was a little bit difficult, but the combination of the technology and the interpreters was very, very difficult together. The testimony from Japan. I don't know how many hours there were, but something to think about. How much content did you really get. That was very difficult. And another juror stated,

A JUROR: I believe that with someone testifying on videotape you can't really get — I think you get a much better read on somebody when they're sitting on front of you, rather than on videotape.

(Several jurors concurring.)

Id.

109 One juror said:

A JUROR: When the documents were shown, it seemed — well, what was kind of troubling at times was we never saw the whole document. I think it was probably — I don't know if it was done deliberately or we were having problems with focusing. But it would have been nice to see the whole document, and then highlight portions of it there, not zoom in on a paragraph and highlight one sentence. And then we can't see the document to get it's full content, we can only see what is being shown to us.

¹⁰⁶ Id. at 43.

¹⁰⁷ See Transcript of Post-Trial Meeting, United States v. Nippon Paper Indus. Co., 17 F. Supp. 2d 38 (D. Mass. 1998) (95-10388 on file with author).

At the post-trial meeting in Nippon, one juror stated:

in the high-tech arsenal needs to be carefully studied. What information does it convey? What information is lost? What is its impact on the atmosphere in the courtroom? To what degree does it hurt, or help the juror's ability to understand trial issues? To what degree does it assist the jury in its role as an active decisionmaker? And finally, what do we gain, or more importantly, lose, when trials look like the evening news?