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Juries and Technology: Equipping Jurors for the Twenty-First Century (symposium)

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INTRODUCTION

In many ways, the jury at the beginning of the twenty-first century is not very different from the jury at the founding of our nation over two hundred years ago. The criminal jury still consists of twelve jurors[1] whose task is to decide guilt or innocence unanimously.[2] The civil jury, while often smaller in size[3] and more of a rarity today, at least in federal court,[4] still

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[1] In criminal cases in federal court, the jury usually consists of twelve jurors. *See* FED. R. CRIM. P. 23(b) ("Juries shall be of 12 but . . . a valid verdict may be returned by a jury of less than 12 should the court find it necessary . . . ."). The number of jurors required of state court juries varies from state to state, but criminal juries must consist of no fewer than six jurors. Ballew v. Georgia, 435 U.S. 223, 232-38 (1978) (holding that in a state court criminal trial, a five-person jury violates the defendant's right to a jury, as guaranteed by the Sixth and Fourteenth Amendments); Williams v. Florida, 399 U.S. 78, 86 (1970) (holding that a six-person jury in a state criminal trial is constitutional).

[2] In criminal cases in federal court, unanimity is required. FED. R. CRIM. P. 31(a) ("The verdict shall be unanimous."). Many states also require unanimous verdicts in criminal trials. *See* Nancy S. Marder, *The Myth of the Nullifying Jury*, 93 NW. U. L. REV. 877, 945 n.308 (1999) (identifying states that require unanimity in criminal jury trials).

[3] Juries in civil cases in federal court must consist of at least six jurors. *See* FED. R. CIV. P. 48 ("The court shall seat a jury of not fewer than six members and not

decides liability. Certainly one of the most significant changes in the jury has been who can serve as a juror. At the time of this country's founding, only white men with property could serve as jurors;[5] today, the jury is open to everyone who satisfies the statutory qualifications.[6]

One aspect of the jury in which there has been very little change over the past two hundred years has been the tools jurors are given with which to perform their task. Although jury trials have become more complex[7] and more

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more than twelve members . . . ."). In *Colgrove v. Battin*, the Court held that a jury of six members did not violate the Seventh Amendment right to a jury trial in a civil case. 413 U.S. 149, 160 (1973).

In the 1970s, academics, judges, and lawyers debated the issue of jury size, with courts taking steps to reduce the size of the civil jury, *id.*, and academics urging preservation of the twelve-person civil jury. *See, e.g.*, Richard 0. Lempert, *Uncovering "Nondiscernible" Differences: Empirical Research and the Jury-Size Cases*, 73 MICH. L. REV. 643, 664-89, 698-99 (1975); Hans Zeisel, . . . *And Then There Were None: The Diminution of the Federal Jury*, 38 U. CHI. L. REV. 710, 715-24 (1971). Many judges today continue to support the smaller civil juries consisting of six to eight jurors, especially now that they have had a fair amount of experience with them. *See* Improving Jury Selection and Juror Comprehension, Workshop cosponsored by the Federal Judicial Center and the Institute of Judicial Administration at New York University School of Law (Dec. 13, 1996).

[4] *See, e.g.*, William Glaberson, *Juries, Their Powers Under Siege, Find Their Role Is Being Eroded*, N.Y. TIMES, Mar. 2, 2001, at A1 ("Court statistics show, for example, that jury trials are a rapidly shrinking part of federal court caseloads . . . . The number of federal civil cases resolved by juries has also dropped to 1.5 percent from 5.4 percent in 1962.").

[5] *See* Nancy S. Marder, *The Interplay of Race and False Claims of Jury Nullification*, 32 U. MICH. J.L. REFORM 285, 314-16 (1999).

[6] For federal juries, a federal statute provides that an individual is "qualified to serve on grand and petit juries in the district court unless" that individual:

> (1) is not a citizen of the United States eighteen years old who has resided for a period of one year within the judicial district;
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> (2) is unable to read, write, and understand the English language with a degree of proficiency sufficient to fill out satisfactorily the juror qualification form;
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> (3) is unable to speak the English language;
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> (4) is incapable, by reason of mental or physical infirmity, to render satisfactory jury service; or
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> (5) has a charge pending against him for the commission of, or has been convicted in a State or Federal court of record of, a crime punishable by imprisonment for more than one year and his civil rights have not been restored.

28 U.S.C. § 1865(b) (2000).

[7] *See, e.g.*, Mark Curriden, *Tipping the Scales: Right to Trial by Jury Fades Under Court Rulings, New Laws*, DALLAS MORNING NEWS, May 7, 2000, at 1A ("Some social scientists argue that today's lawsuits have become too complex for citizen juries to resolve.").

stressful,[8] courts have not given jurors many new tools with which to meet these and other challenges. Rather than considering how best to equip jurors to perform their tasks, many courts have gone in the other direction and considered ways to constrain jury power.[9] In recent years, for example, courts have imposed limitations on the jury's power to nullify,[10] have limited the types of issues that juries can resolve,[11] and have engaged more freely in adjusting juries' damage awards.[12] These responses have been consistent with legislative actions,[13] particularly after recent high-profile cases like the O.J.

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[8] An example of an extremely stressful criminal trial for jurors was the McMartin preschool molestation case, which lasted two and one-half years and earned the distinction of being "the longest and most expensive criminal trial in history." Beverly Beyette, *A Juror's Trials*, L.A. TIMES, Feb. 1, 1990, at E1. One juror, Mark Bassett, described the trial as "very draining" because "[y]ou're dealing with extremely emotional issues. And there's no one in the whole world you can talk to and say, 'This is rough,' and why." *Id.* Jurors in the trial of Jeffrey L. Dahmer found the emotional toll so high given the descriptions of cannibalism and sex with corpses that two psychiatrists were assigned to them so that they would have the opportunity "to talk, cry or vent rage." Dirk Johnson, *Dahmer Jurors Tell of Emotional Impact*, N.Y. TIMES, Feb. 17, 1992, at A11.

[9] *See* Glaberson, *supra* note 4, at A1 (describing a Southern Methodist University School of Law study published Spring 2001 in which 27.4% of the 594 federal trial judges surveyed said that juries should decide fewer types of cases).

[10] *See* United States v. Thomas, 116 F.3d 606, 622 (2d Cir. 1997) (holding that a trial judge who is notified that a juror is urging nullification should determine if that, and not reasonable doubt, is motivating the juror, and if it is the former, should remove that juror from the jury, even if the jury is already in the midst of its deliberations).

[11] *See* Markman v. Westview Instruments, Inc., 517 U.S. 370, 389-90 (1996) (holding that juries are no longer to interpret claim terms in patent cases, but rather that the construction of such terms is within the province of the judge).

[12] *See* Glaberson, *supra* note 4, at A1 (describing a study by Professors Kevin M. Clermont and Theodore Eisenberg, in which they found that federal appeals courts now reverse civil jury damage awards in injury and contract cases 40% of the time, as compared to 20% of the time in 1987).

[13] For example, a number of state legislatures have enacted statutes that cap the amount of damages that a jury can award. *See, e.g.*, Thomas Koenig & Michael Rustad, *His and Her Tort Reform: Gender Injustice in Disguise*, 70 WASH. L. REV. 1, 79 (1995) ("Twenty-one states have enacted some reform measure limiting non-economic damages in health care litigation. . . . [T]ort reformers have succeeded in capping non-economic damages in medical malpractice cases in several states.") (footnote omitted). Among the states that have passed statutes limiting pain and suffering awards in medical malpractice suits are Michigan, Wisconsin, and Utah. *Id.* at 79 n.331. Texas recently imposed a cap on the amount of punitive damages that Texas civil juries can award, *see* Mark Curriden, *Jury Awards Fall Under Weight of Obscure Law*, DALLAS MORNING NEWS, May 7, 2000, at 23A, and tort-reform proponents in the state persuaded the legislature to cap the maximum punishment for negligence, noting that "25 other states already had some type of damage caps." *Id.*

Simpson trial,[14] and with press opinion, as suggested by articles questioning whether the jury is still a viable institution.[15] In spite of legislative and judicial efforts to constrain the jury, I think the better approach is to give jurors the tools they need so that they can be active jurors, capable of engaging in effective decision making even in complex or lengthy trials.[16]

Although the call for "active jurors" has been made before,[17] as has the call for giving jurors new tools with which to perform their tasks,[18] both calls need to be renewed now as

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[14] After the state criminal trial of O.J. Simpson, there were proposals in California to abandon the unanimity requirement, which would make it easier for juries to convict because all jurors would not have to agree with the verdict. One proposal called for allowing a decision rule of 11-1 or 10-2 to be sufficient for conviction in a state criminal case. *See, e.g.*, *California Blue Ribbon Panel Urges Wide Range of Jury Reforms*, WEST'S LEGAL NEWS, May 3, 1996, *available at* 1996 WL 260677 (announcing the Judicial Council's Blue Ribbon Commission's proposals for jury reform, which included a recommendation for non-unanimous verdicts). Interestingly, this recommendation would not have affected the Simpson jury in the state criminal trial; it was unanimous in its decision.

[15] *See* Glaberson, *supra* note 4, at A1.

[16] Those who disagree with the need for active jurors can still agree with giving jurors technological tools that will improve their understanding of the facts and law. Although I think an active model will produce this result, others may disagree on this point.

[17] *See, e.g.*, ABA/BROOKINGS SYMPOSIUM, CHARTING A FUTURE FOR THE CIVIL JURY SYSTEM 16 (1992) ("[W]e generally support measures that would move the jury from being a 'passive' fact-finder to taking a more 'active' part in the trial process . . . ."); B. Michael Dann, *"Learning Lessons" and "Speaking Rights": Creating Educated and Democratic Juries*, 68 IND. L.J. 1229, 1241 (1993) [hereinafter Dann, *"Learning Lessons"*] ("Relying on the evidence produced by scientific studies and having as their goals better-informed jurors and more accurate verdicts, social scientists, law professors, a few judges, and others paint a far different picture of jurors and advocate a far different model for the jury than the one now followed in most courtrooms in this country. They all agree on one thing: jurors must be permitted to become more active in the trial."); B. Michael Dann, *From the Bench: Free the Jury*, LITIG., Fall 1996, at 5 [hereinafter Dann, *From the Bench*] ("[T]he traditional passive jury that absorbs evidence and law should be changed to an active jury that participates as a near equal with judge and counsel."); *Waking Up Jurors, Shaking Up Courts*, TRIAL, July 1997, at 20 [hereinafter *Waking Up Jurors*] ("The 'passive juror' notion is an antiquated legal model that is neither educational nor democratic. It flies in the face of what we know about human nature to assume that jurors remain mentally passive, refrain from using preexisting frames of reference, consider and remember all the evidence, and suspend all judgment until they begin formal deliberations.") (quoting Arizona Superior Court Judge B. Michael Dann).

[18] *See, e.g.*, ABA/BROOKINGS SYMPOSIUM, *supra* note 17, at 18 (identifying "ways in which juror comprehension can be improved in all types of cases" including "giving jurors additional tools not now commonly at their disposal").

we consider the fate of the jury in the twenty-first century. As criticisms of the jury mount, the length and complexity of jury trials increase, and the popular response is to question whether the institution of the jury can endure, jurors need to be better equipped to do their jobs. It is particularly appropriate that this question of new tools be renewed today as we experience a technological revolution. Newspaper sections devoted exclusively to technology report on myriad ways in which technology is becoming more sophisticated and more widespread.[19] Thus, we are at a unique juncture: we can see both the pressures on the jury and the need to update the tools given to jurors, and we can see the technological developments that will enable courts to provide jurors with tools to meet these pressing needs.

Three caveats, however, are in order. First, I think that any tools given to jurors should be directed toward helping them to become "active jurors" who are engaged in their role and who participate in their learning from the outset. The current model of juror is a passive one: the juror is directed to sit through the trial and simply absorb information like a sponge.[20] Instead, jurors should have a role in organizing and analyzing the information presented at trial[21] and should begin this process when they enter the courtroom, if not earlier. The second caveat is that I am not advocating the wholesale adoption of all technology into the courtroom. Instead, each tool needs to be carefully and critically evaluated to see whether it will truly help jurors to perform their roles. Any tool, including a high-technology one, that keeps jurors in a passive mode ought to be rejected. A number of questions should be considered before any new tool is introduced into the courtroom: Will it help jurors to be more active? Will it provide jurors with greater information and enable them to approach

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[19] For example, *The New York Times* has a section called "Circuits," *The Chicago Tribune* has a section called "Business Technology," and *The Los Angeles Times* has a section called "Tech Times."

[20] *See* Dann, *"Learning Lessons," supra* note 17, at 1246 (providing features of the passive juror model, including the juror as mere observer, an empty vessel to be filled, a recorder of information, and capable of suspending judgment until the end of the case).

[21] *See id.* (providing key features of the active juror model, including taking responsibility for learning, participating, interacting, and processing information on an on-going basis).

their role with greater confidence, or will it create new problems that are more serious than the problems sought to be fixed? My third caveat is that I take a very expansive view of the word "technology." According to this view, technology can range from very low-technology tools, like pencil and paper, which would allow jurors to take notes during a trial, to high-technology tools like a laptop computer, which would allow jurors to organize their notes and all other materials that are part of the trial record.

An active jury is not without precedent in the annals of jury service; for example, jurors in medieval and colonial times were asked to play a far more active role than jurors today. Although that earlier, more active role was attributable to jurors' greater responsibilities, technology would be one way to reclaim an active role for jurors at a time when there seems to be little interest in adding to jurors' responsibilities, and when there is in fact a move toward reducing jurors' responsibilities.[22]

My argument is that technological tools will enable jurors to become more active participants in the trial process and will strengthen the jury at a time when the jury is under attack for its inability to handle the complexities of modern-day cases. Part I offers a thumbnail sketch of the more active role that jurors once played and how that was replaced by a more passive role that largely predominates today. Part II describes some of the ways in which current technology has begun to transform jurors from passive spectators to active participants. Part III offers some speculations as to how technology could be used in the future to continue transforming today's passive juror into tomorrow's active juror. Finally, Part IV raises some of the concerns that lawyers and judges are likely to have about these new tools, and Part V identifies several barriers to change and considers how they might be overcome.

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[22] *See supra* notes 9-16 and accompanying text.

I. RECALLING OLD ROLES AND REINVIGORATING NEW ROLES

The brief sketch that follows is intended to highlight the ways in which jurors in the past, such as those on medieval and early American juries, were asked to play a more active role than today's jurors.[23] I provide this backdrop to suggest that the active juror is not a new model of juror but has its roots in early models prevalent in medieval and colonial days. I think it is useful to recall these early models because they open up new possibilities. They reveal alternative models and in doing so, help to challenge and transform today's prevailing model of the passive juror.

A. *The Medieval Jury*

The medieval jury was "self-informing."[24] Individuals were chosen as jurors because they either knew the parties and the facts,[25] or they had the duty to discover them.[26] They were expected to undertake whatever investigation was necessary and to include as jurors others who might have the requisite knowledge. The British Crown was satisfied with this active, investigative role for jurors because it spared the government

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[23] The brief account that follows is based only on select secondary sources and is, as acknowledged in the text, meant merely to be suggestive, not comprehensive.

[24] THOMAS ANDREW GREEN, VERDICT ACCORDING TO CONSCIENCE: PERSPECTIVES ON THE ENGLISH CRIMINAL TRIAL JURY 1200-1800, at 16 (1985). Legal historian Tom Green offers a wonderfully nuanced description of the medieval jury in VERDICT ACCORDING TO CONSCIENCE.

[25] *See id.* at 52 ("The trial jurors, drawn from the hundred where the homicide was committed, but not necessarily from the immediate vicinage, probably reflected already settled attitudes of the countryside toward individual defendants."); *id.* at 98 ("Moreover, juries were forced to make decisions about individuals partially on the basis of the reputation of those individuals in the community."); David Farnham, *Jury Nullification: History Proves It's Not a New Idea*, CRIM. JUST., Winter 1997, at 4, 5 ("Contrary to the modern concept of a jury ignorant except as enlightened by the facts presented at trial, medieval jurors took an oath to tell what they knew to be true.").

[26] *See* Stephen C. Yeazell, *The New Jury and the Ancient Jury Conflict*, 1990 U. CHI. LEGAL F. 87, 91 ("The jurors were to be selected for their knowledge of the underlying events; if they were ignorant, the solution was not to present evidence, but to select more jurors until one found those who knew.").

the administration and the cost of fact-finding.[27] In addition, by having a jury rather than a judge render a decision between neighbors, the losing neighbor might be dissatisfied with his neighbor-juror, but not with the Crown-appointed judge.[28]

One effect of leaving jurors to investigate the facts on their own was that they could use this capability to circumvent an unduly harsh penalty. For example, the penalty for felony murder was death. Medieval juries resisted this penalty in some cases by finding facts to be such that the felony murder criteria were not met even in cases when they clearly were.[29] Through their power to investigate the facts independently, medieval juries were able to resist a rigid legal regime until the government eventually recognized degrees of homicide and established penalties less drastic than death.

B. *The Early American Jury*

Until the mid 1800s,[30] jurors in this country played a more active role than they do today. They were instructed to

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[27] *See* GREEN, *supra* note 24, at 97 ("The Crown's recourse to the trial jury suggests . . . an awareness of profound administrative weakness . . . ."); Yeazell, *supra* note 26, at 89.

[28] *See* Yeazell, *supra* note 26, at 90 ("Using a jury also shifted to a local institution the unpleasant task of delivering bad news to one of the parties to the lawsuit. The loser's neighbors, not the judge, caused his unhappiness.").

[29] See GREEN, *supra* note 24, at xix, 26, 38-45, 52, 77, 94-97, 99.

[30] *See* Mark DeWolfe Howe, *Juries as Judges of Criminal Law*, 52 HARV. L. REV. 582, 589 (1939) ("[I]n the federal courts until 1835, lower court judges and Justices of the Supreme Court, sitting on circuit, had time and again specifically instructed juries that they were 'the judges both of the law and the fact in a criminal case, and are not bound by the opinion of the court . . . .' ") (quoting United States v. Wilson, Fed. Cas. No. 16,730 (C.C.E.D. Pa. 1830) (Baldwin, J.)).

Jeffrey Abramson noted that in most state jurisdictions and in many federal cases, criminal juries retained their power to decide the law after the Revolution and well into the nineteenth century. JEFFREY ABRAMSON, WE, THE JURY: THE JURY SYSTEM AND THE IDEAL OF DEMOCRACY 75 (1994). At the very least, according to Alan Scheflin, "[t]here is agreement among many commentators that the right of the jury to decide questions of law and fact prevailed in this country until the middle 1800s." Alan W. Scheflin, *Jury Nullification: The Right To Say No*, 45 S. CAL. L. REV. 168, 177 (1972). Howe described how a number of States, including Pennsylvania, New York, Vermont, Virginia, Louisiana, Georgia, Tennessee, Connecticut, Massachusetts, and Illinois, maintained that juries could decide questions of both fact and law, at least until the 1850s. *See* Howe, *supra,* at 590 n.26, 592, 594-96, 596 n.57, 597 n.58, 603, 605-09, 611.

find the facts and decide the law[31] in a way that was consistent with their sense of justice.[32] Today jurors are told that they are only to find the facts[33] and are not instructed on any other possibilities.[34] Although early American jurors did not undertake a factual investigation independent of the court as medieval jurors had, they still retained much power in the courtroom. As between judge and jury, the judge probably performed the more perfunctory role of the two at the time.[35]

C. *The Transformation to the Modern-Day Jury*

There are various accounts of the transformation of the early American jury into the modern-day jury. One particularly useful broad-brush picture of the transformation is provided by Stephen Yeazell in his article, *The New Jury and the Ancient Jury Conflict*.[36] Yeazell draws upon the primary research done by legal historians John Langbein[37] and John Mitnick.[38] He notes that the move to in-court fact-finding

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[31] *See* Howe, *supra* note 30, at 595 ("[T]he usual practice in Pennsylvania was for judges to inform the jurors 'what, in the opinion of the court, was the law, but that the jury were the judges of the law and the fact.' ") (quoting Edward Tilghman's testimony at the impeachment of Samuel Chase in REPORT OF THE TRIAL OF THE HON. SAMUEL CHASE 27 (Charles Evans ed., 1805)).

[32] The juror's right to decide a case according to his own conscience was described by John Adams as follows: "It is not only his right but his duty, in that case to find the verdict according to his own best understanding, judgment, and conscience, though in direct opposition to the direction of the court." Howe, *supra* note 30, at 605 (quoting 2 LIFE AND WORKS OF JOHN ADAMS 253-55 (C.F. Adams ed., 1856)).

[33] For example, in California, a judge typically instructs jurors that they have "a duty to apply the law as I give it to you to the facts as you determine them." CALIFORNIA JURY INSTRUCTIONS, CRIMINAL (CALJIC), no. 1.00 (1989).

[34] *But see* Marder, *supra* note 2, at 956-58 (recommending that courts give a broader instruction to the jury that encompasses the possibility of jury nullification, even if not identifying it as such, rather than explicitly telling the jurors that they perform only the limited function of fact-finding).

[35] *See, e.g.*, Howe, *supra* note 30, at 591 ("The judges in Rhode Island held office not for the purpose of deciding cases, for the jury decided all questions of law and fact; but merely to preserve order, and see that the parties had a fair chance with the jury.") (quotation omitted).

[36] *See* Yeazell, *supra* note 26, at 87.

[37] *See generally* John H. Langbein, *Shaping the Eighteenth-Century Criminal Trial: A View from the Ryder Sources*, 50 U. CHI. L. REV. 1 (1983); John H. Langbein, *The Criminal Trial Before the Lawyers*, 45 U. CHI. L. REV. 263 (1978).

[38] *See generally* John Marshall Mitnick, *From Neighbor-Witness to Judge of Proofs: The Transformation of the English Civil Juror*, 32 AM. J. LEGAL HIST. 201 (1988).

meant that courts needed rules to govern the presentations.[39] With the development of the rules of evidence, both lawyers and judges had larger roles to play: lawyers assumed responsibility for demonstrating their respective versions of the truth,[40] and judges exercised control over the lawyers' presentations and over the verdicts that were supposed to be based on these presentations.[41] According to Yeazell, "[i]n the regime that emerged in the eighteenth century, the judge had a much more active role after the pleadings closed."[42]

One concomitant of this enhanced role for both judge and lawyer was a diminished role for the juror. Jurors depended upon lawyers for the presentation of facts and upon judges for instructions on the law. They were constrained in ways that their medieval predecessors had not been: they were selected for their ignorance of the facts and parties, were made to rely on the lawyers' presentations, were dependent on the judge for an explication of the law, and were expected to reach a verdict based only on what they had heard in the courtroom, with the added threat that the judge could order a new trial or take the case away from the jury if the verdict did not comport with the evidence. In the early modern-day courtroom, lawyers had gained control over the presentations and judges had taken control over the trial proceedings; all that remained for jurors was to sit back and listen.

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[39] *See* Yeazell, *supra* note 26, at 94 ("Once judges determined that juries had to base their findings on in-court presentations, courts needed rules to govern those presentations. A law of evidence resulted.") (footnote omitted).

[40] *See id.* at 95 ("When factual investigation moved from the hands of an independent lay agency to those of partisan experts, parties had more control over proceedings . . . .").

[41] *See id.* at 96 ("As lawyers' presentations became more elaborate, judges had to control those presentations by ruling on whether evidence might be admitted."). Alan Scheflin explained the transformation as the result of "a power struggle in which professional judges sought tighter controls over the legal apparatus of the trial." Scheflin, *supra* note 30, at 207 & n.134.

[42] Yeazell, *supra* note 26, at 96.

D. *A Modern-Day Call for Active Jurors*

The passive role of modern-day jurors has not escaped judicial notice entirely. A number of judges,[43] joined by commentators,[44] have lamented the current situation and have called for a more active role for jurors. They believe that an active role will better enable jurors to process the large amount of information they are exposed to during trial.[45] They understand that jurors cannot simply sit for weeks or months of a trial and then walk into the jury room with instant recall of all that has transpired.[46] Although these judges and commentators have not urged a return to the investigative role of the medieval juror or the law-determining role of the early American juror, they have suggested procedural changes that would enable jurors to become active learners at an earlier point in the trial.

Judge Michael Dann, a trial court judge in Maricopa County, Arizona, has written extensively about the need for active jurors and has worked to bring about this result

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[43] *See infra* note 48 (describing efforts of Arizona judges).

[44] *See, e.g.*, ABA/BROOKINGS SYMPOSIUM, *supra* note 17, at 3-5 (providing recommendations for encouraging more active jurors).

[45] *Cf.* Robert Buckhout, *Eyewitness Testimony*, SCI. AM., Dec. 1974, at 23, 31 ("Psychological research on human perception has advanced from the 19th century recording-machine analogy to a more complex understanding of selective decision-making processes that are more human and hence more useful."); *id.* at 24 ("The observer is an active rather than a passive perceiver and recorder; he reaches conclusions on what he has seen by evaluating fragments of information and reconstructing them.").

[46] *See* ABA/BROOKINGS SYMPOSIUM, *supra* note 17, at 14 ("The image of jurors as blank slates, sitting in silence and passively absorbing information fed to them, is not and should not be an accurate version of how jurors respond to the evidence in a trial or how they make decisions."). Another theory of how jurors learn is that they begin the trial process with a framework or story into which they place information that is presented at trial. *See, e.g.*, Nancy Pennington & Reid Hastie, *A Cognitive Theory of Juror Decision Making: The Story Model*, 13 CARDOZO L. REV. 519, 525 (1991) ("Because all jurors hear the same evidence and have the same general knowledge about the expected structure of stories, differences in story construction must arise from differences in world knowledge; that is, differences in experiences and beliefs about the social world."); Nancy Pennington & Reid Hastie, *Evidence Evaluation in Complex Decision Making*, 62 J. PERSONALITY & SOC. PSYCHOL. 242, 249, 252-53 (1986) (finding that jurors organize trial evidence into a story framework); Nancy Pennington & Reid Hastie, *Explaining the Evidence: Tests of the Story Model for Juror Decision Making*, 62 J. PERSONALITY & SOC. PSYCHOL. 189, 189 (1992) ("The Story Model is based on the hypothesis that jurors impose a narrative story organization on trial information . . . .").

particularly in Arizona state courts. Among the procedural changes that he has recommended, both in his scholarly writing[47] and in his role as chair of an Arizona committee on jury reform,[48] are that jurors should be permitted to take notes, have a list of exhibits and witnesses, engage in pre-verdict deliberations, receive preliminary jury instructions, submit written questions to the judge, and hear additional arguments from the lawyers should the jury reach an impasse in its deliberations.[49] Arizona has taken seriously the committee's recommendations and has implemented many of these changes.[50] Several other states have followed suit, at least in part.[51]

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[47] *See* Dann, *"Learning Lessons," supra* note 17, at 1231, 1262-77 (urging courts to permit jurors to engage in pre-verdict deliberations and to have judges and counsel see if further dialogue would be helpful to juries that have reached an impasse in their deliberations); Dann, *From the Bench*, *supra* note 17, at 5 (making recommendations, such as having mini-opening statements before voir dire and preliminary jury instructions, so that the passive juror can become an active juror); B. Michael Dann & George Logan III, *Jury Reform: The Arizona Experience*, 79 JUDICATURE 280, 281 (1996) (describing structural changes, such as permitting jurors to submit written questions and to discuss the evidence prior to deliberations, that were recommended by the committee in Arizona).

[48] Arizona formed a committee, headed by Judge B. Michael Dann, to study its jury system. *See* THE ARIZ. SUPREME COURT COMM. ON MORE EFFECTIVE USE OF JURIES, JURORS: THE POWER OF 12 (1994) [hereinafter THE POWER OF 12] (including a list of recommendations and a proposed bill of rights). The committee made a number of recommendations, many of which were ultimately adopted. *See, e.g.*, William H. Carlile, *Arizona Jury Reforms Buck Legal Traditions*, CHRISTIAN SCI. MONITOR, Feb. 22, 1996, at 1 (reporting that Arizona adopted eighteen of the jury reform panel's fifty-five recommendations). The effectiveness of these reforms is now being studied by researchers. *See generally* Paula L. Hannaford et al., *Permitting Jury Discussions During Trial: Impact of the Arizona Reform*, 24 LAW & HUM. BEHAV. 359 (2000) (studying the effect of permitting jurors to engage in pre-verdict deliberations in civil trials).

[49] *See* Dann & Logan, *supra* note 47, at 280 (describing some of Arizona's more controversial reforms to its jury system, including giving jurors preliminary jury instructions, allowing them to submit written questions to the judge, instructing jurors that they can discuss the evidence before the close of trial in a civil case, giving judges discretion about the timing of instructions, and having the judge and jury engage in a dialogue if the jury has reached an impasse).

[50] *See* Carlile, *supra* note 48, at 1 (reporting that Arizona adopted eighteen of the committee's fifty-five recommendations).

[51] *See, e.g.*, *Waking Up Jurors*, *supra* note 17, at 20 ("Several states, including California and New York, are either studying or experimenting with new trial procedures that encourage more active participation by jurors. Many of these procedures are patterned closely on changes already implemented in Arizona.").

II. TAKING THE NEXT STEP

To continue the work begun by Judge Dann and others, the next step is to consider ways technology[52] can enable jurors to assume a more active role.

A. *Pre-Courtroom Technology*

Technology can be used early in the jury process before a prospective juror even enters the courthouse. It is my contention that if prospective jurors have some control over their jury service from the outset, they will be more active jurors. In contrast, if prospective jurors feel benumbed or demeaned by the jury process from the beginning, this response is likely to color the rest of their jury experience and will produce more passive jurors who feel that they have no voice and can exert no will.

1. Maps and Directions

The Internet is one form of technology already used by some courts to provide prospective jurors with necessary information prior to jury service. This tool can be a first step in creating active jurors. According to Judge Donald Shelton, forty-five states have at least one court with online jury information.[53] Some states currently use Web sites to provide jurors with such basic information as maps and directions to the courthouse.[54] Prospective jurors no longer need to feel bewildered as they search for the courthouse in unfamiliar

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[52] I am indebted to Judge Donald E. Shelton, a trial judge in Ann Arbor, Michigan, for his work on technology and jury service. I had the great fortune, thanks to the foresight of organizers Tom Munsterman and Chip Mount, to be on a panel with Judge Shelton at the Jury Summit 2001, a joint effort by the National Center for State Courts and the New York State Court System. I thank Judge Shelton for identifying the ways in which some courts currently use technology to improve jury service and trials for jurors.

[53] Donald E. Shelton, New Jury System Ideas, Jury Summit 2001, N.Y., N.Y. (Feb. 3, 2001).

[54] *See id.* For a useful Web site for this information, see Court Jury Services Links to the 50 States, *at* http://www.ncsc.dni.us/KMO/Topics/Jury/States/States/-Juryusmap.htm (last visited July 23, 2001) [hereinafter Court Jury Services].

sections of town; instead, courts can give them the necessary tools to find the courthouse without incident. Florida's Ninth Judicial Circuit goes one step further by providing a virtual tour of the courthouse so that prospective jurors will not get lost once they enter the courthouse building.[55]

Courts also use the Internet to answer frequently asked questions ("FAQs") by prospective jurors.[56] In this way, prospective jurors can have their questions answered before they even set out for the courthouse building. They do not need to wait on the phone to address their questions to an overworked clerk, nor do they need to proceed in ignorance. FAQs, as well as a glossary,[57] posted on the Internet can arm jurors with practical information about jury service so that they can proceed with knowledge and confidence.

2. Juror Handbooks

Courts also use the Internet to teach prospective jurors about the role of the juror. In the past, courts mailed prospective jurors a juror handbook to be read in advance of jury service.[58] One disadvantage of this method was that the handbook was sporadically revised, and thus, prospective jurors received a dated handbook that hardly made for exciting reading or offered useful information.[59] By providing a juror

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[55] *See* Shelton, *supra* note 53 (recommending Web site http://www.ninja9.net/-courtadmin/jury/osceola.htm) (last visited July 23, 2001).

[56] *See* Court Jury Services, *supra* note 54 (identifying Web sites providing FAQs).

[57] *See, e.g.*, Judicial Publications: Legal and Judicial Terms, *at* http://www-.alacourt.org/Publications/Jury/index.htm (last visited July 23, 2001); California Courts: Guide to California Jury Service: Glossary, *at* http://www.courtinfo.ca.gov/-jury/glossary.htm (last visited July 23, 2001).

[58] *See generally* ADMIN. OFFICE OF U.S. COURTS, HANDBOOK FOR JURORS SERVING IN THE UNITED STATES DISTRICT COURT (1975) (providing information to jurors called for jury duty in federal district courts). According to one survey of types of juror orientation provided by state courts, of 131 judicial districts drawn from all 50 states, 64.1% provided a juror handbook. Robert F. Forston, *Sense and Non-Sense: Jury Trial Communication*, 1975 B.Y.U. L. REV. 601, 624.

[59] *See* Nancy S. Marder, Note, *Gender Dynamics and Jury Deliberations*, 96 YALE L.J. 593, 607 n.72 (1987) (pointing out that twelve-year old handbooks (published in 1975) were using the same text as handbooks published sixteen years earlier (1959)).

handbook on the Internet, as some courts are doing,[60] courts can update the handbook easily, distribute it inexpensively, and make it informative and relevant so that prospective jurors are familiar with their role before they arrive at the courthouse.

3. Juror Orientation Videos

Another form for educating the prospective juror about jury service is the juror orientation video.[61] Although courts have traditionally shown this video to prospective jurors once they arrive at the courthouse, the Internet allows prospective jurors to view the video at their leisure and in the quiet of their own homes. States such as Florida and Georgia have already introduced online juror orientation videos.[62] In such states, the Internet enables prospective jurors to play a role in their own education. They can decide when and where to view the online video and can repeat it if they think that there are points they missed the first time. A further advantage of an online video is that courts can distribute it more easily and inexpensively than the traditional juror orientation video.[63] As a result, the Internet orientation can be up-to-date and actually useful for the jury experience; it can also be coordinated with the Internet handbook so that both teaching devices reinforce the same messages.[64] The new medium of the Internet may also

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[60] *See* Shelton, *supra* note 53 (recommending Web site http://www-.ncsc.dni.us/KMO/Topics/Jury/States/States/Juryusmap.htm for courts making jury handbooks available online).

[61] *See* Marder, *supra* note 59, at 608, nn.73 & 74 (providing examples of juror orientation videos).

[62] *See* Shelton, *supra* note 53 (providing Web sites for Florida's and Georgia's online jury orientation videos respectively, *at* http://www.ninja9.org/courtadmin/-jury/orange.htm and http://www.cobbcounty.org/judicial/superior_admin/sca_index-.htm.) (last visited July 23, 2001).

Many jurisdictions also make their juror orientation video available through local access cable television, *see* JURY TRIAL INNOVATIONS 46 (G. Thomas Munsterman et al. eds., 1997), including Circuit Court for Fairfax County, Virginia, *see id.*, and Florida. *See* Shelton, *supra* note 53.

[63] For some of the shortcomings of traditional juror orientation films, see Marder, *supra* note 59, at 608 nn.73 & 74.

[64] *See* Forston, *supra* note 58, at 627 ("[T]here is a need to coordinate the various training procedures into a single orientation program. . . . One innovative way . . . would be to produce an orientation film designed to be used in conjunction with a

inspire a presentation that is less turgid than the more traditional medium of low-budget film or video.[65]

4. Qualifying, Notifying, and Excusing Jurors Online

Traditionally, prospective jurors had to go to the courthouse to discover if they qualified for jury service, if they were needed as jurors on a given day, or if they could be excused from jury duty. However, the Internet now enables prospective jurors to glean all this information from their homes. Thus, the Internet not only provides a great convenience to prospective jurors, but also enables them to exercise some control over their jury service at the outset. Use of the Internet also allows courts to respect jurors' time, which in turn should encourage jurors to perform their role rather than seek to avoid it.[66]

A number of different states have taken the lead in allowing prospective jurors to use the Web to qualify, to check their status, or to seek an excuse. For example, a Delaware, Ohio municipal court permits prospective jurors to qualify

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thorough, but readable, juror handbook."). Although Forston wrote his article over twenty-five years ago, long before the advent of the Internet, his point is both prescient and relevant. Juror orientation materials, whether made available on the Web or in the courthouse, should be coordinated so that the juror emerges with a complete picture of the trial process and his or her role in it.

[65] *See, e.g.*, Marder, *supra* note 59, at 608 n.73 (noting that the Massachusetts video in black and white consisted of a single judge lecturing on the juror's role and would be more effective if it used color and dramatization).

[66] *See, e.g.*, Robert G. Boatright, *Why Citizens Don't Respond to Jury Summonses: And What Courts Can Do About It*, 82 JUDICATURE 156, 157 (1999) ("The survey of court administrators found that the national summons nonresponse rate is approximately 20 percent in state courts and 11 percent in federal courts."); Susan Carol Losh et al., *"Reluctant Jurors": What Summons Responses Reveal About Jury Duty Attitudes*, 83 JUDICATURE 304, 306 (2000) (finding that 15% of jurors summoned failed to appear in a survey conducted in a state district court in Northern Florida).

The system of "one day, one trial," in which prospective jurors are called to serve and if they are not selected for a trial on that day, then they are dismissed and their obligation to serve has been fulfilled, also shows respect for a juror's time and has gone a long way toward convincing prospective jurors to respond to their summons. Approximately forty percent of all U.S. citizens live in jurisdictions that adhere to "one day, one trial" or at least some version of it. *See* JURY TRIAL INNOVATIONS, *supra* note 62, at 29. The practice has been adopted statewide in Colorado, Connecticut, Florida, and Massachusetts, and by most courts in Arizona, New York, North Carolina, and Texas. *Id.*

online,[67] while Massachusetts allows prospective jurors to complete a confidential juror questionnaire online.[68] Courts in Connecticut post prospective jurors' reporting times and status online[69] so that they do not need to go to the courthouse or even make a telephone call[70] for this information. Some courts in a number of states, including Colorado, Florida, Georgia, and Massachusetts, use the Internet to allow prospective jurors to seek excuses or deferments,[71] thus giving prospective jurors some control over when they will serve and allowing them to confirm this information without requiring a trip to the courthouse.

B. *Courtroom Technology*

1. High-Technology Innovations

Technology in the courtroom is at a nascent stage. When lawyers speak about courtroom technology, they are typically debating the merits of making their presentations with Powerpoint.[72] Lawyers and judges are less focused on introducing technology that will enable jurors to be active participants. Technology could, however, give jurors tools that

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[67] *See* Shelton, *supra* note 53 (identifying http://www.municipalcourt.-org/jurorLogin.asp as a Web site for completing a Juror Questionnaire online).

[68] *See id.* (identifying http://www.state.ma.us/courts/jury/aboutmy1.htm.).

[69] *See id.* (providing Web site for Connecticut (http://www.jud2.state.ct.us/-jury/)).

[70] *See, e.g.*, Mendocino County Court Jury Duty, *at* http://www.co.mendocino-.ca.us/courts/juryduty.html (last visited July 23, 2001) (instructing jurors to telephone for a pre-recorded message about whether or not they must report for jury duty).

[71] *See* Shelton, *supra* note 53 (providing Web sites for Colorado's 4th district (http://www.gofourth.org/jury_excuse_postponement_form.htm), Florida's 9th Judicial Circuit (http://www.ninja9.net/courtadmin/jury/Excuse_Form_Osceola.htm) and 8th Judicial Circuit (http://circuit8.org/juror.html), Georgia's Cobb County (http://www-.cobbcounty.org/judicial/superior_admin/sca_index.htm), and Massachusetts (http://-www.state.ma.us/courts/jury/trial.htm)).

[72] *See* Federal Litigation in the 21st Century, Conference at the E.M. Dirksen Federal Courthouse in Chicago, IL (Nov. 28, 2000) (debating the pros and cons of Powerpoint presentations).

allow them to exercise greater control over the material presented at trial and that allow them to rely less on parties and judges to give them information in only one form and at only one time.

a. *Expert Testimony by Videoconference*

The use of videoconferencing to present remote testimony of expert witnesses may shorten testimony[73] and make it easier to follow.[74] The jury can also take the video into the jury room if it wishes to review the testimony again. Having the video, as opposed to a cold transcript of the testimony, means that the jury can collectively review the expert witness' testimony and assess the expert's demeanor and credibility rather than rely on the recollections of individual jurors. This would also be an argument for videotaping the in-court testimony of all witnesses.

b. *High-Technology Video Presenters and Monitors*

Similarly, the use of video presenters with monitors[75] for the jurors means that lawyers can present much of their case, including the introduction of exhibits, by hooking up their laptops to the presenter and providing a visual presentation of their case.[76] Jurors can then watch their monitors and focus on the details of the exhibits or transcripts as the lawyer refers to them. Thus, jurors can avoid the traditional approach where the exhibit is admitted into evidence and quickly passed among the jurors for a quick glimpse even though the lawyer has

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[73] *See* Shelton, *supra* note 53.

[74] *See* ABA/BROOKINGS SYMPOSIUM, *supra* note 17, at 16 ("[W]e generally support innovations that would help shorten trials, out of the belief that jurors are likely to better comprehend what occurs during a trial if it is conducted expeditiously.").

[75] The placement of monitors is a subject of debate. Monitors need to be placed at eye-level so that jurors can view them without having to look away from the lawyers or the witness stand. I thank my research assistant, Scott Paccagnini, for bringing this point to my attention after learning about it at the ABA Techshow 2001, Chicago, IL (Mar. 15-17, 2001).

[76] For one example of a video presenter, see Doar: Courtroom Integration, *at* http://www.doar.com/courts/innovative.htm (last visited July 23, 2001).

already moved on in his or her argument.[77] This visual presentation will make the material easier for jurors to assimilate, particularly those jurors who are accustomed to obtaining information by television or computer.[78] However, the current use of high-technology video presenters and monitors is limited. Experiments with video presenters and monitors are currently taking place in the Courtroom 23 Project in Orlando, Florida,[79] Courtroom 21 at William and Mary College of Law in Williamsburg, Virginia,[80] and Courtroom of the Future at the University of Arizona in Tuscon, Arizona, among other places.[81]

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[77] *See, e.g.*, Brian Ingram, *Litigation Technology: Better Trials Through New Technology*, NAT'L L.J., June 11, 2001, at B10, B13 ("Displaying a document to the jury as it is being explained speeds up the trial and enhances the jury's comprehension of the testimony."); Joan Jacobson, *High-Tech Justice for All? Court: State of the Art Equipment is Being Used in Trials. Is it Improving the System or Giving an Unfair Advantage?*, BALTIMORE SUN, June 8, 1998, at 1C ("Long accustomed to passing evidence tediously from hand to hand, [the prosecutor] was impressed because the software allowed him to 'show the photographs so the judge, the jury, the prosecution, the defense lawyers and all the defendants could see them all at one time.' ") (quoting prosecutor James O'C. Gentry, Jr.); Videotape: Order in the Classroom (Institute of the IADC Foundation 1998) (on file with author) (noting that lawyers have already moved on to their next point while jurors still are examining exhibits).

[78] *See, e.g.*, Ian Francis, *Jury Trial: Evolution or Extinction?*, 151 NEW L.J. 414 (2001) ("Today the visual media are ascendant. People are used to receiving information in short bursts via television and computer screens, with oral commentary reinforcing the visual message . . . ."); David Burns, *Helping Jury See the Facts with Pictures*, NAT'L L.J., July 16, 2001, at B16 ("Litigators should note that a person retains 85% of information received visually, and markedly less of the information received orally."); Lisa Guernsey, *For the New College B.M.O.C., 'M' Is for Machine*, N.Y. TIMES, Aug. 10, 2000, at D7 ("The computer has . . . become the portal through which students do everything they need to do on campus."). According to Mitchel Resnick, a professor at the Massachusetts Institute of Technology's Media Laboratory, computers provide "multiple ways to learn, where[as] in the past there was only one way." Joshua Green, *No Lectures or Teachers, Just Software*, N.Y. TIMES, Aug. 10, 2000, at D6.

[79] *See* Courtroom 23, *at* http://www.ninja9.org/courtadmin/mis/courtroom-_23.htm (last visited July 23, 2001).

[80] *See* D. Ian Hopper, *Jury in Favor of High-Tech Courtrooms for Civil Cases*, CHI. TRIB., April 9, 2001, at 7 (describing Courtroom 21's technology, including flat plasma television screens, smaller LCD monitors, and camera domes to record and project every move); Courtroom 21: A Court Technology Education and Demonstration Project, *at* http://www.courtroom21.net (last visited July 23, 2001).

[81] *See* John DeWitt, *Law School Displays 'Courtroom of the Future,'* ARIZ. BUS. GAZETTE, May 18, 1995 at 3 (describing a courtroom that allows "participants to look at documents, highlight exhibits, view animated evidence or videotaped testimony, and prepare and view graphical representations of evidence"); Courtroom of the Future, *at* http://www.law.arizona.edu/it/court.html (last visited July 23, 2001).

2. Low-Technology Innovations

a. *Note-Taking*

One fairly recent innovation, which many courts have agreed to, is allowing jurors to take notes during trial.[82] Note-taking, though not very radical, initially elicited resistance from judges and lawyers.[83] Two studies found that when judges and lawyers actually had experience with note-taking, they tended to view it favorably.[84] Although the prohibitions against note-taking and written charges may have originated at a time when most jurors were illiterate and courts were reluctant to favor literate jurors over illiterate ones,[85] that distinction no

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[82] In 1992, when the American Bar Association and Brookings Institution issued a report after a symposium on the civil jury, the report described note-taking as "the most widely suggested reform for enhancing juror comprehension." ABA/BROOKINGS SYMPOSIUM, *supra* note 17, at 18. Although it described note-taking as "far from universal," the writers recommended that "it become so." *Id.* at 19. Five years later, in 1997, note-taking was described in JURY TRIAL INNOVATIONS as "a widespread technique." JURY TRIAL INNOVATIONS, *supra* note 62, at 141. The book suggested that "[i]n most jurisdictions, the trial judge has discretion to permit jurors to take notes," and where that discretion is not provided by statute or rule, the parties should so stipulate. *Id.*

[83] *See* SAUL KASSIN & LAWRENCE WRIGHTSMAN, THE AMERICAN JURY ON TRIAL 128 (1988) ("Although the Supreme Court has never directly addressed the question [of juror note-taking], it has long been a source of controversy."). Kassin and Wrightsman, writing in 1988, relied on an Administrative Office of the U.S. Courts estimate that "90 percent of the federal judges do *not* permit jurors to take notes." *Id.* Given judges' reticence to adopt the practice, they asked: "So why is there so much resistance?" *Id.* at 129.

[84] *See, e.g.*, Larry Heurer & Steven Penrod, *Juror Notetaking and Question Asking During Trials*, 18 LAW & HUMAN BEHAV. 121, 140 (1994) ("Both judges and attorneys were significantly more enthusiastic about notetaking if they had experience with jurors taking notes."); Leonard B. Sand & Steven Alan Reiss, *A Report on Seven Experiments Conducted by District Court Judges in the Second Circuit*, 60 N.Y.U. L. REV. 423, 446-52 (1985) (reporting generally favorable reactions by judges and lawyers to juror note-taking).

[85] *See* Heurer & Penrod, *supra* note 84, at 124 ("The concern [with juror note-taking] was that if a single juror could read the materials, that juror would be inordinately persuasive with his illiterate fellow jurors."); Bob Ortega, *Any Questions? Juries Take on an Active Role*, WALL ST. J., Apr. 26, 1999, at B1 ("Back when most citizens were illiterate, the concern about note taking was that one or two literate jurors might disproportionately influence their uneducated peers.").

longer holds. In fact, one of the statutory criteria for serving as a juror today, at least in federal court, is the ability to read and write English.[86]

Although the original justification for prohibiting note-taking has long since disappeared, many judges and lawyers have continued to argue in favor of maintaining this prohibition. Among the arguments to justify the no note-taking rule were that jurors would be distracted by note-taking and would fail to pay attention to witnesses' demeanor, which was important for assessing witness credibility. In addition, jurors might give more weight to a juror's notes than to another juror's recollections during deliberations and jurors' notes could be used to challenge the verdict.[87] These arguments, however, have given way only gradually and recently to countervailing arguments such as the following: jurors, like students, learn best by taking notes, jurors should be able to take notes for the same reason that judges take notes during a trial, and note-taking is particularly useful as an aid to memory and as an antidote to boredom in a long or complicated trial.[88]

Note-taking is a tool that allows jurors to assume an active stance. Note-taking challenges the conventional view of the juror as a passive receptacle into which evidence and testimony can simply flow during the length of the trial and can be recalled instantaneously during the deliberations. Note-taking suggests that jurors have a role to play in organizing and absorbing the information presented at trial. Jurors should think critically about the evidence and testimony, try to discern connections with earlier evidence and testimony, and record questions that they believe should be discussed during deliberations. Although note-taking hardly involves state-of-the-art technology—simply a pencil and paper—it is an example of how a basic tool can be used to transform the juror from passive spectator to active participant.

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[86] *See* 28 U.S.C. § 1865(b)(2)(2000).

[87] *See* KASSIN & WRIGHTSMAN, *supra* note 83, at 128-29; Sand & Reiss, *supra* note 84, at 447.

[88] *See* KASSIN & WRIGHTSMAN, *supra* note 83, at 128-29; Sand & Reiss, *supra* note 84, at 450-51.

b. *Written and Recorded Instructions*

There are several courtroom innovations that are best described as low-tech because they are one step up from note-taking, but could nevertheless assist jurors in taking charge of their own learning. For example, although many judges now permit jurors to take a copy (or copies) of the written charge into the jury room,[89] the next step would be to allow jurors to take a tape- or video-recording of the judge's instructions into the jury room.[90] A tape-recording would allow jurors to hear the judge reading the instructions again whenever they feel that hearing the judge's phrasing and intonations would be useful. A video-recording would allow jurors to replay portions of the judge's presentation as needed. The traditional way of achieving this effect is to have the jury send a note to the judge requesting a read-back of a portion of the instruction. However, with a recording or video, the jurors need not wait until the judge, lawyers and parties have re-assembled in the courtroom; rather, they can replay the particular portion of the instruction whenever and as often as they want. They also can replay the instruction as they re-read the written copy and they could stop at any point to discuss what they have just heard or seen. The combination of written and recorded instructions would allow jurors to read and listen to the instructions, thus giving jurors at least two different forms from which to understand and remember the information.[91]

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[89] *See* ABA/BROOKINGS SYMPOSIUM, *supra* note 17, at 24 ("Jurors should receive copies of the final written instructions when they retire to deliberate."); JURY TRIAL INNOVATIONS, *supra* note 62, at 174 ("The judge provides jurors with written copies of the jury instructions before they are read by the judge.").

[90] *See* JURY TRIAL INNOVATIONS, *supra* note 62, at 174-76 (describing the process of providing jurors with written and recorded copies of the judge's instructions).

[91] *See id.* at 19 ("[M]aterial is better remembered when it is presented in several different forms than in a single form. Having the jurors both listen to and read the instructions should capitalize on this effect.").

c. *Juror Notebooks*

Another low-tech innovation that is one step above juror note-taking is for the court to provide jurors with notebooks that contain information useful for understanding the case and the trial process. A number of courts currently provide jurors with notebooks,[92] particularly when they anticipate lengthy or complicated trials.[93] These notebooks typically contain such basic information as a list of the parties, lawyers, witnesses, copies of key exhibits, preliminary jury instructions, and a seating chart for the courtroom that identifies the trial participants.[94] They also can include legal terms of art that are likely to arise in the case. They might also include a schedule for the trial, particularly if the judge and lawyers already know that the trial will not be proceeding on certain days or times because of prior commitments. In sum, the notebook is a tool for enabling jurors to better understand the case and the trial process. By giving jurors this information at the beginning of the trial and collecting it in one source, which they can refer back to as necessary, courts may help jurors to feel less intimidated by their solemn surroundings, the expertise of the judge and lawyers, and their inexperience as jurors. Even a low-tech juror notebook would give jurors greater familiarity with their task, which should in turn lead to greater juror confidence, and perhaps even assertiveness. Judges should, however, review the content of the notebook to make sure that it does not become a compendium of all the evidence presented at trial, and thus, overwhelm the jurors.

d. *Post-Verdict Postcards*

Another low-tech tool is the post-verdict postcard.[95] Although it may be a stretch to call "snail mail" a form of

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[92] *See, e.g.*, ARIZ. R. CIV. P. 47(g) (authorizing the use of juror notebooks).

[93] *See* JURY TRIAL INNOVATIONS, *supra* note 62, at 109 ("In lengthy trials and trials of complex cases, jurors are supplied with three-ring notebooks for keeping documents and other information about the case.").

[94] *See id.* at 110 (suggesting contents of notebooks); THE POWER OF 12, *supra* note 48, at 79 (same).

[95] *See* Shelton, *supra* note 53 (describing his use of post-verdict letters, which offer more space and privacy than a postcard would).

technology, given the nascent state of technology in most courtrooms, this may be legitimately included in the category. The post-verdict postcard is simply a way for the juror to indicate that he or she would like to be informed as to how the case is finally resolved. In a criminal case in which the defendant is convicted, this would mean notifying the juror of the sentence. In a civil case in which there is a finding of liability and an award of damages, this would mean informing the juror whether the judge had granted a motion for judgment as a matter of law[96] or had agreed to remittitur[97] or additur.[98] Jurors who are interested in finding out the outcome of the case can simply complete a postcard with their address so that they will receive this information. The post-verdict postcard allows courts to treat jurors as human beings who have performed the difficult task of judging[99] and who want to know how the case has finally been resolved. Jurors are not simply cogs in the wheel of justice; rather, they are co-decisionmakers along with the judge. Just as trial judges might want to know what happened to their cases on appeal, jurors might want to know what happened to their cases upon sentencing or review of the verdict or damage award. This simple low-tech tool allows courts to treat jurors with dignity and appreciation. The court should treat jurors in this manner both during and after the trial so that jurors will see their role in a positive light while they are serving, and when they return to their community and share their jury experience with others.[100]

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[96] *See* FED. R. CIV. P. 50 (Judgment as a Matter of Law).

[97] Remittitur, "[t]he power to reduce damages," is recognized "by virtually all judicial systems." JACK H. FRIEDENTHAL ET AL., CIVIL PROCEDURE § 12.4, at 560 (2d ed. 1993).

[98] Additur, which is "the power to increase damages . . . has not been accepted in all courts," *id.*, largely because it did not exist under common law, leading the Supreme Court to hold in *Dimick v. Schiedt*, 293 U.S. 474 (1935), that additur violated the Seventh Amendment. *Id.* However, some state courts have upheld its constitutionality under state law. *See* FRIEDENTHAL ET AL., *supra* note 97, at 561.

[99] *Cf.* Robert M. Cover, *Violence and the Word*, 95 YALE L.J. 1601, 1609 (1986) ("[J]udges deal pain and death.").

[100] *See* Nancy S. Marder, *Deliberations and Disclosures: A Study of Post-Verdict Interviews of Jurors*, 82 IOWA L. REV. 465, 474-89 (1997) (providing content analysis of jurors' post-verdict interviews with the press to show the types of issues that jurors discussed pertaining to their jury experience).

III. SPECULATING ON FUTURE DIRECTIONS IN TECHNOLOGY

The use of computers, both by prospective jurors in their homes and by jurors already seated on a jury, holds great potential as a tool for enabling jurors to be active participants, thereby enhancing the jury's capacity to perform its roles.

A. *Pre-Courtroom Technology*

1. Internet Voir Dire

Through the use of home computers, courts could reduce the time for in-court voir dire and minimize the demoralizing effect of endless waiting for prospective jurors. One way to expedite voir dire would be to allow prospective jurors to complete the basic information typically elicited in traditional in-court voir dire[101] via an online questionnaire. Although this would not eliminate the need for voir dire in the courtroom, it would cover such basic information as a prospective juror's occupation, marital status, prior jury service, and occupations of spouse and children.[102] In this way, the courtroom voir dire would not be as tedious and time-consuming for prospective jurors and parties as it is now. It would also enable the judge and attorneys to focus on prospective jurors' relevant attitudes and opinions, and of course, their demeanors as they respond to the questions. In cases where a written questionnaire supplements in-court voir dire,[103] Internet voir dire would still save time because it is much quicker to tabulate the results of information submitted by computer than on handwritten forms.

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[101] For a typical voir dire in federal court, see *United States v. Torres*, No. 77 Cr. 680 (S.D.N.Y. May 19, 1980) (transcript of jury selection).

[102] For an example of a questionnaire that is currently available online, but is submitted in hard copy, see Unified Judicial System Official Court Forms, *at* http://www.alacourt.org/Forms/Other/jury.htm (last visited July 23, 2001).

[103] *See, e.g.*, Richard B. Klein, *Low-Tech Automated Jury Instructions*, JUDGES' J., Summer 1996, at 36, 37 (describing the Philadelphia courts' system of having prospective jurors watch an introductory videotape and then complete a standardized written questionnaire for basic voir dire information followed by some questions asked orally in court).

A further benefit of Internet voir dire is that it would allow prospective jurors to gain some control over voir dire. Under current practice, prospective jurors are questioned in a group in open court.[104] When questioned in this way, some prospective jurors choose not to reply even though the question pertains to them.[105] Prospective jurors are supposed to answer truthfully and completely during voir dire, and remaining silent in response to relevant questions is contrary to those expectations. However, with Internet voir dire, prospective jurors cannot remain silent. Moreover, they might be more comfortable responding in written form at home because they can take time to think about the question and they do not have to address an entire courtroom, which may be embarrassing or difficult for some prospective jurors.[106] Even though their Internet questionnaire responses are not confidential and are part of the record, the responses do not have to identify the prospective jurors when made available to the public.[107] In addition, the prospective jurors are able to respond from the comfort and security of their home, and at a time of their own choosing, thus making the voir dire process more convenient.

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[104] *But see* Kimba M. Wood, *The 1995 Justice Lester W. Roth Lecture: Reexamining the Access Doctrine*, 69 S. CAL. L. REV. 1105, 1118-20 (1996) (suggesting that jurors would be more forthcoming during voir dire if they were questioned in the robing room rather than the courtroom when being asked personal questions); Sand & Reiss, *supra* note 84, at 436 (describing lawyers' and judges' generally favorable responses to individual voir dire in an experiment with the procedure).

[105] *See, e.g.*, Gregory E. Mize, *On Better Jury Selection: Spotting UFO Jurors Before They Enter the Jury Room*, COURT REV., Spring 1999, at 10 (recommending that prospective jurors be questioned individually so that even those who remained silent in the group voir dire could be pressed to respond). Whether prospective jurors remain silent through shyness, embarrassment, ignorance, or deviousness is unclear; however, the effect is that parties may fail to learn important and relevant information.

[106] For example, "[s]trong social pressures against racist or sexist attitudes . . . discourage people from admitting such beliefs publicly. The more public the forum, the more pressure there is to portray oneself in socially desirable ways." JURY TRIAL INNOVATIONS, *supra* note 62, at 12.

[107] California has gone so far as to seal the names and addresses of jurors after a criminal trial has ended. *See Tougher Jury Confidentiality Law Proposed in California*, WEST'S LEGAL NEWS, Jan. 16, 1996, at 233, *available at* 1996 WL 257973 (describing S.B. 508, which was enacted into law and seals jurors' identities after a trial, and S.B. 1199, which was introduced and would seal jurors' identities at the start of a criminal trial if it would be " 'in the best interest of the jurors' ").

2. Juror Orientation by Internet or CD-ROM

Although some courts are already experimenting with juror orientation on the Internet,[108] these presentations could be more sophisticated than they currently are. They also could be supplemented or supplanted by a CD-ROM. Internet juror orientation could be visual and/or textual. It could consist of a video that is similar to those now shown to prospective jurors who are waiting to be called for a panel. The advantages of this visual presentation, as suggested earlier,[109] are that the prospective juror can watch it at home in a quiet setting, view it more than once, and enter the courthouse feeling knowledgeable and confident. The Internet juror orientation also could be textual, with links to more information for prospective jurors whose curiosity about the jury had been piqued, as well as visual, with images of the courthouse, courtroom, and jury room.[110] The Internet juror orientation could also be interactive with a question-and-answer format that would test the prospective jurors' understanding of the orientation materials. Such a format would also serve as a record that the prospective jurors had, in fact, watched the orientation presentation.

A CD-ROM would provide another means of juror orientation via home computer. The CD-ROM orientation could take a variety of forms that the Internet, due to its current slowness, cannot provide, at least at this time. For example, the orientation could be in a game format, which might appeal to younger prospective jurors. Indeed some aspects of law school subjects are taught through games, such as discovery games in Civil Procedure.[111] The CD-ROM juror orientation could also be in the form of a mock-jury trial in which the prospective juror would have to participate. Some law schools offer a mock-jury trial as part of their first-year student

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[108] *See supra* Part II.A.3.

[109] *See id.*

[110] *See* Christine Frey, *Images, Hyperlinks Invite Longer Stays, Offer Gateway to the Web*, L.A. TIMES, Mar. 15, 2001, at T6 ("Pages of nothing but text are not very inviting. Adding more sophisticated elements . . . such as links and images improves [the Web site's] use and looks . . . .").

[111] *See, e.g.*, Center for Computer-Assisted Legal Instruction (CALI), *at* http://lessons.cali.org/cat-civ.html (last visited July 23, 2001).

orientation because it quickly introduces students to the courtroom, the participants, the trial process, evidence, and legal issues, and it also allows students to participate by actually having to deliberate in mock juries and to reach a verdict.[112]

With Internet and CD-ROM juror orientation, the goal would be to educate prospective jurors as to their roles. Prospective jurors could choose from a variety of educational methods available. After all, not everyone learns most effectively from the same format, from only one format, or from viewing the material only once. If prospective jurors receive a more effective education about the process and the task ahead of them, they would begin their jury service with the background and confidence to be more active jurors from the outset.

B. *Courtroom Technology*

1. Laptop Computers

To be an active and full participant, the juror of the future will need a computer in the courtroom. The next generation of jurors is already accustomed to doing much of its learning on the computer.[113] For example, today's college students use their computers to take lecture notes, do research, write papers, and communicate with their friends.[114] The computer has become as much a tool for learning on today's college campus as the typewriter or the notebook and pen were

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[112] For example, Chicago-Kent has such a program as part of its orientation of first-year students. The trial is presented by second- and third-year law students and is presided over by a local judge. Students are assigned to twelve-person mock juries, where they deliberate and try to reach a verdict. A trial advocacy professor then conducts a post-verdict discussion. *See* First-Year Juror Orientation, Chicago-Kent College of Law, Aug. 14, 2000 (material on file with author).

[113] *See, e.g.*, Green, *supra* note 78, at D6 (" 'The value of the computer is that it allows kids to learn by doing . . . . People don't learn by being talked at. They learn when they attempt to do something and fail.' ") (quoting Roger C. Schank, Director, Institute for Learning Sciences at Northwestern University).

[114] *See* Guernsey, *supra* note 78, at D7 ("The computer has . . . become the portal through which students do everything they need to do on campus.").

for earlier generations. To ask young people to serve as jurors, which for many of them might be their most serious undertaking to date,[115] and yet to deprive them of the very tool by which they are accustomed to learning and organizing material, might be to disadvantage them.

Many of today's older citizens also have become accustomed to using computers as a learning tool.[116] According to one study, online users over the age of sixty-five increased by 54% in the past year, and those between the ages of fifty-five and sixty-four increased by 36%, bringing the total number of online users in these two age groups to 14 million.[117] These older citizens have gone online primarily to acquire information and to communicate with family members[118] without having to leave home.[119] In addition, computers can provide visual presentations of material at a time in their lives when reading may have become more difficult.

For the middle-aged Baby Boomers, now between the ages of thirty-seven and fifty-five,[120] personal computers may not yet have become as integral for learning as for other generations. Unlike today's younger generation, those who are now middle-aged were raised and educated when mainframes, rather than personal computers, were the only type of computer.[121] Unlike today's senior citizens, many of those who

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[115] *See, e.g.*, Seth Mydans, *Juror in Denny Case Recounts Stress and an Obsession with Detail*, N.Y. TIMES, Oct. 27, 1993, at A18 (interviewing the mother of a young juror in the Reginald Denny beating who explained that her daughter "had never before been forced to make difficult decisions like this").

[116] *See, e.g.*, *Over-65 Group Takes to Web in Droves*, CHI. TRIB., Mar. 21, 2001, at 20 ("In fact, over the last year, those age 65-99 were the fastest-growing group online.").

[117] *See id.* (citing study by Nielsen/NetRatings).

[118] *See id.* ("E-mail is the primary reason seniors use the Internet . . . .") (citing a joint survey by SeniorNet and Charles Schwab & Co.); *id.* ("Other top reasons include researching travel and genealogy, finding health or medical information and joining discussion/community groups.") (quoting Stacy Dieter, vice president of SeniorNet in San Francisco).

[119] *See, e.g.*, Robert Nolin, *Cyber Seniors*, SUN-SENTINEL (Ft. Lauderdale), June 21, 1999, at 1A ("For homebound seniors, computers can be a splendid vehicle for armchair exploration.").

[120] *See* Korky Vann, *Boomers' 55th Birthday a Defining Moment*, HARTFORD COURANT, Mar. 13, 2001, at D4 ("Of the 76 million Americans born between 1946 and 1964, three million will turn 55 this year.").

[121] *See* Carrie Johnson, *Mainframes Falling Out of Mainstream*, CHI. TRIB., Mar. 5, 2001, § 4, at 2 ("Baby Boomers . . . cut their teeth on the [mainframe] machines . . . .").

are now middle-aged constitute the so-called "sandwich generation" because they are responsible for the care of their children and their elderly parents,[122] and their obligations may leave them with little time to learn new technologies such as computers. Courts would need to provide some transition time for this generation of jurors before computers can become a tool in every courtroom.

After some transition time, however, computers would be an extraordinarily powerful tool for jurors in the courtroom, enabling them to organize, process, and analyze huge amounts of information. So many jurors are accustomed to using computers in their everyday lives, from the student who takes lecture notes on a laptop to the consultant who organizes data on a spreadsheet, that to ask jurors to work on a project of such importance without this tool is to put them at a great disadvantage. If jurors were given laptops in the courtroom, those laptops could contain all the material that is currently included in a three-ring juror notebook.[123] Jurors could take their notes on a laptop, which would allow them to cut and paste and organize the trial material in a way that made sense to them. After the judge instructs the jurors on the law, the instructions could also be downloaded into the laptop for easy reference during deliberations. For deliberations, jurors' laptops could also contain programs that would allow them to do calculations and work on spreadsheets; these features would be particularly useful for civil juries asked to award damages. Laptops would provide jurors with a powerful tool that would help to refute the charge that today's jury is ill-equipped to resolve complicated issues in lengthy trials.[124]

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[122] Tom Anderson, *Taking a Bite Out of the Sandwich Generation*, USA TODAY, Nov. 1, 1999, (Magazine) at 18 ("[T]here is . . . a name for people being squeezed between the demands of their children and the responsibility they feel to assist their aging parents—the Sandwich Generation.").

[123] *See supra* text accompanying notes 92-94.

[124] *See, e.g.*, Glaberson, *supra* note 4, at A1 (" 'It is simply impossible . . . to achieve fairness when each case is decided by a different group of 12 people who are called to serve on a civil jury perhaps only once in their lives.' ") (quoting John E. Babiarz, Jr., Delaware Superior Court Judge).

2. Post-Verdict Updates

Whereas some courts currently use post-verdict notices to communicate with jurors about developments in the case after they have completed their jury service,[125] the Internet could fulfill this function as well. Even after jurors have rendered their verdict, they still have an interest in learning how the case has finally been resolved.[126] Rather than relying on "snail mail," courts could use the Internet to post updates about the case just as some courts today use the Internet to post information about prospective jurors' status prior to jury service.[127] Jurors could be given a personal identification number so that only those jurors who served on that case could obtain the information. Alternatively, that information could be available to any member of the public with an interest in reading about it online. Just as trials and post-trial motions are open to the public, the online case update could be made available to the public. In this way, members of the public could learn about post-verdict developments in a case, such as sentences in criminal cases and damage awards in civil cases. Although this information is already publicly available in that the courtroom is open to members of the public, it is information that may be available long after the verdict has been rendered and public interest in the case has waned. By providing the information over the Internet, courts would make it easier for the public to follow post-verdict developments, which are often overlooked.[128]

IV. ANTICIPATING CONCERNS

Although technology is not a panacea, it offers important tools that courts can give jurors so that they are able to perform their difficult tasks with greater competence. The

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[125] *See* Shelton, *supra* note 53.

[126] *See supra* text accompanying notes 95-100.

[127] *See supra* Part II.A.4.

[128] *See, e.g.*, Nancy S. Marder, *Juries and Damages: A Commentary*, 48 DEPAUL L. REV. 427, 437 (1998) (lamenting the fact that the public focuses on the jury's damage award and fails to consider that the judge will also review the award, and perhaps adjust it).

idea underlying this approach is that rather than constraining the jury's power and limiting the jurors' role, courts should consider updating the tools jurors have at their disposal so that they can function effectively as decision makers. However, even judges that agree with this approach still might have concerns. These concerns are worth identifying in order to see whether they can be allayed.

A. *Cost*

The first concern is that courts do not have any additional funds with which to purchase new equipment.[129] Although new equipment, like video presenters or laptop computers, would certainly cost money, some of the other tools, such as using the Internet for juror orientation or voir dire, would not add much expense once the court had a Web site and technical support staff. Since the staff would serve all the judges in a courthouse, the cost seems unlikely to be prohibitive. In addition, because courts already expend some funds to produce a juror orientation film and handbook, these funds could simply be transferred to the creation of an Internet orientation video and handbook. For the low-technology tools, like tape-recorded instructions or juror notebooks, the cost would be fairly modest, and some courtrooms already have the equipment, such as a tape recorder or three-ring binders.

One of the most expensive recommendations would be to provide jurors with laptop computers. Although this would certainly entail an outlay of funds, notwithstanding falling computer prices, the expenditure might be offset somewhat through the savings in juror pay, meals, bailiff overtime, and hotels (for sequestered juries) to the extent that juries deliberate more quickly and reach fewer impasses as a result of using laptops. There would also be benefits in juror satisfaction that are not easy to quantify, but are important nevertheless. For example, jurors often feel frustrated when they labor at

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[129] This concern was raised by one judge at the Jury Summit 2001. *See* Shelton, *supra* note 53. *But see* Dewitt, *supra* note 81, at 3 ("Getting started doesn't have to be expensive . . . . 'If you can find $15,000 to $25,000 in your budget, you can do 90 percent of what we have in the Courtroom of the Future . . . .' ") (quoting University of Arizona College of Law Professor Winton Woods).

calculating a damage award only to have the judge reduce it later.[130] If jurors had access to calculators, spreadsheets, and other organizing tools on their laptops, they might be able to arrive at damage awards that were more likely to withstand judicial scrutiny.[131]

B. *Tradition*

Another concern is that the use of any new tools is contrary to traditional ways of having jurors perform their role. Judges may be hesitant to introduce new tools to the jury either because they are contrary to tradition or because they may have unintended effects.

As to the first concern, adherence to tradition for tradition's sake is not a compelling reason to keep tools from the jury, particularly when the world outside the courtroom is changing. Certainly, it is far-fetched to require jurors to use quill pens for note-taking today simply because those types of pens would have been used if jurors at the time of our country's founding were permitted to take notes. As tools become more sophisticated, and ordinary citizens grow accustomed to using these tools in their everyday lives, it makes little sense to deprive them of these tools when they become jurors. At a time when the jury is under attack, and judges[132] and others question whether the jury is able to perform the tasks of modern-day judging, especially in cases with complicated issues and lengthy presentations, it seems that at the very least, the jury should be given the tools that would enable it to render verdicts in these types of cases. Judges and other critics should not be able to have it both ways: insisting that juries

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[130] *See* Glaberson, *supra* note 4, at A1 (quoting jurors who felt betrayed by a process in which their jury's damage award was overturned by a judge).

[131] If jurors were given more guidance by the judge about assessing damages, this would help as well. *See* Shari Seidman Diamond et al., *Jury Awards for Medical Malpractice and Post-Verdict Adjustments of Those Awards*, 48 DEPAUL L. REV. 265, 318-20 (1998) (urging judges to give jurors guideposts based on jury awards in comparable cases).

[132] *See* Glaberson, *supra* note 4, at A1 (describing survey of 594 federal trial judges, of which 27.4% said that juries should decide fewer types of cases).

are no longer capable of deciding certain types of cases and limiting jurors to the tools that they have traditionally been given (which is to say, no tools at all).

As to the second concern that new tools may have unintended effects, there is certainly a basis for this concern. There is risk when changes are made. Some changes will be successful; others will fail, and success or failure may occur in unexpected ways. For example, the introduction of Internet voir dire, which would allow prospective jurors to complete the basic portion of voir dire from their home computers, may accomplish its purpose of making jury duty more convenient and may give prospective jurors more control over the preliminary proceedings. However, Internet voir dire also may have unintended consequences, such as preventing jurors from knowing as much about each other as they would in the past because they no longer hear the basic information as a group or inspiring jurors to be more or less candid about the information they provide from a distance through Internet voir dire.[133] The point is that there is no way of knowing which effect will transpire until the new method is tried. Although respect for tradition suggests making changes slowly and only when they are proven needed so that the concomitant risk is worth taking, there is also a risk in adhering too rigorously to tradition and in not making any changes, and that risk is that the jury will become an outmoded institution.

In addition, judges have certain tools at their disposal to handle some of the unintended consequences. For example, if judges find that jurors with laptops are taking notes too intently and not paying enough attention to the witnesses as they testify, they can instruct jurors to resist the temptation to record everything, and to pay sufficient attention to the witnesses' demeanor. Such an instruction is similar to the one given to jurors who are permitted to take handwritten notes during the trial.[134]

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[133] *Cf.* Reed Abelson, *By the Water Cooler in Cyberspace, The Talk Turns Ugly*, N.Y. TIMES, Apr. 29, 2001, at A1 ("On message boards for particular companies on third-party Web sites . . . some employees are anonymously expressing thoughts they would not dare say out loud. They are freely showing their prejudices . . . .").

[134] For a sample instruction on note-taking, see JURY TRIAL INNOVATIONS, *supra* note 62, at 259 (App. 3) ("Notebooks and pencils have been provided for note taking. No juror is required to take notes. Some of you may feel that note taking is not

C. *Digital Divide*

Another legitimate concern of judges is that technological tools will intimidate jurors who are not technologically savvy. They worry that jurors who have not had experience with technology will feel at a distinct disadvantage were it to be introduced into the courtroom or used at home (if it is available at home) prior to jury service. Their concern is almost a due process type of concern for the technological novice who may be unfamiliar with the technology or not have access to it at home.

Courts' concern about introducing technological tools when some jurors are unfamiliar with technology has been a concern in other contexts. The use of computers and the Internet has not reached all demographic groups at the same pace. There have been reports of a "digital divide" between rich and poor,[135] whites and minorities,[136] men and women,[137] and developed and developing nations[138] in terms of computer use. Educators worry about whether students from a lower-class

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helpful because it may interfere with the hearing and evaluation of evidence.").

[135] *See, e.g.*, John Owens, *Helping Close the Digital Divide*, CHI. TRIB., Aug. 7, 2000, at B1 (describing the work of Street-Level Youth Media, a non-profit organization that provides access to video and computer technology to underprivileged youth in parts of Chicago in an effort to "bridg[e] the gap in the 'digital divide,' the technological chasm between the upper- and lower-income communities in America").

[136] *See id.*

[137] The gender "digital divide" describes "the fact that fewer women are entering today's booming technology fields." *Technology's Gender Gap*, N.Y. TIMES, Sept. 5, 2000, at A30. Although studies show that women are active users of new technology and outnumber men in terms of Internet use, they are not entering the information technology work force in proportion to their numbers in society. *Id.* Women's absence is significant because the new technology will not reflect women's interests and needs. *Id.* In addition, there is a glass ceiling for women, " ' where women are more likely to be in the bottom range of the pay scale and men are more than likely to be on top.' " Andy Vuong, *Women Facing High-Tech Hurdles*, CHI. TRIB., June 24, 2001, § 6, at 7 (quoting Marla J. Williams, President of the Women's Foundation of Colorado).

[138] *See, e.g.*, John Markoff, *High-Tech Executives Urge Action on World's Digital Divide*, N.Y. TIMES, July 20, 2000, at A6 (describing the efforts by a group of high-technology executives to encourage nations to take steps to reduce the "digital divide," such as Japan's commitment of $12 billion in loans and $3 billion in grants over five years to information-technology initiatives in the developing world); John Markoff, *It Takes a World Wide Web to Raise a Village*, N.Y. TIMES, Aug. 7, 2000, at C1 (describing the efforts of Bernard Krisher, a former journalist, who is trying to bridge the "digital divide" by bringing the Internet to several rural communities in Cambodia).

background are at a disadvantage when computers are used in schools because students from middle- and upper-class backgrounds may have been exposed to computers at home and will be more comfortable with them at school.[139] On the other hand, schools provide a setting for introducing all students to computers, thus helping to bridge the digital divide.

The jury could ultimately play a similar equalizing role. Undoubtedly, some jurors may be reticent about using computers and the Internet because they are unfamiliar with them or do not have access to them. For those jurors, the more traditional means of note-taking or voir dire should be available. A transition period is necessary, during which new technologies and old technologies co-exist. For example, a prospective juror should be given the option of completing an online voir dire questionnaire or a handwritten copy. Many businesses have already adopted such a multifaceted approach so that consumers can make purchases online or by telephone, fax, or written request. The jury would be no different. Without the new technologies, jury service will cease to attract young jurors, and without the old technologies, jury service may intimidate some middle-aged or elderly jurors. However, the divide will lessen over time[140] and a transition period will only be needed for a while.

Juries should continue to provide one of those rare settings, like schools, where rich and poor, white and minority, men and women, and young and old work together on an equal footing. Jurors are given tools, some of which are familiar and some of which are new, but all of which are meant to assist them in performing their tasks. The introduction of new jury tools would help the jury fulfill one of the goals that Alexis de

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[139] *See* Amy Harmon, *Computing in the '90s: The Great Divide*, L.A. TIMES, Oct. 7, 1996, at D1 (" 'The way our society is built today, your fate in life is very strongly connected to how you do in school. . . . Parents who can provide their children with computers at home give them an important advantage.' ") (quoting U.C. Berkeley sociologist Claude Fischer).

[140] For one prediction, see Digital Divide To Close Within the Decade, EPF News Release, Jan. 11, 2001, *at* http://www.epf.org/media/newsreleases/2001/-nr20010111.htm ("The gap between high- and low-income households and computer ownership is quickly closing and should disappear by 2009, according to a new analysis released today by the Employment Policy Foundation."). In the meantime, public libraries and schools also provide access to computers for those who do not have them at home.

Tocqueville identified for it over 170 years ago, which is to serve as a "free school"[141] that teaches citizens important lessons about democracy and self-government. Toward that end, jury service would be educating citizens about new technologies, with which they would feel more comfortable as a result of their jury service. Jurors who were unfamiliar with new technologies could learn from jurors who had experience with them, just as jurors today rely on each other for their expertise, experience, and perspectives. Jurors would leave their jury service not only with first-hand knowledge about an important democratic institution, but also with first-hand experience in using the new tools of a democracy.

D. *Juror Distractions*

Yet another concern that judges could have with respect to new tools is that jurors will be distracted by them in the courtroom. Jurors are supposed to determine the facts by observing the witnesses as they testify, the exhibits as they are introduced into evidence, and the lawyers as they present their arguments. They are supposed to focus their attention on what is happening in the courtroom, as it is happening. The concern, then, is that if they are busy organizing material on their laptops while an important witness is providing crucial testimony on the stand, they will fail to pay attention and miss the witness' demeanor or an important link in one side's case.

Another concern is that some of the tools might mediate the experience of being a juror, because the juror is no longer watching the witness testify, but is watching an image of the witness on a monitor. If jurors are watching videos in the courtroom just as they do for home entertainment they might lose track of the seriousness of their purpose in the courtroom and confuse it with the entertainment they derive from videos at home. If they watch an image rather than the actual person, they might miss details that a camera might obscure.

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[141] 1 ALEXIS DE TOCQUEVILLE, DEMOCRACY IN AMERICA 270-76 (J.P. Mayer ed. & George Lawrence trans., Doubleday & Co. 1969) (13th ed. 1850).

These are all fair concerns. However, experiences with students and laptops in the classroom can provide some guidance.[142] One answer is that even if students use laptops for diversion, diversion is not a new phenomenon. Today's laptops provide distractions just as newspapers, doodling, and crossword puzzles did in the past. Just as students in a pre-laptop era did not always pay attention throughout the entire class, jurors do not always pay attention throughout the entire trial. Jurors have been known to drift off to sleep, and when that occurs, it is the judge's responsibility to give the jurors a break. Similarly, the judge would also have to discern when jurors with laptops were too deeply buried in their laptops and would have to remind them to focus on the testimony and witnesses.[143]

As to the concern that the introduction of videos will blur the boundaries between entertainment and the courtroom, studies show that jurors take their responsibilities seriously.[144] From the moment they take their oath,[145] they are usually transformed from ordinary citizens who had wanted to avoid

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[142] One lesson that can be learned from the classroom and applied to the courtroom is not to give jurors a modem with their laptop. There is no reason for jurors to have access to the Internet in the courtroom or the jury room and the temptations of e-mail and web-surfing are difficult to resist, at least they have been for some students. *See* Ian Ayres, *Lectures v. Laptops*, N.Y. TIMES, Mar. 20, 2001, at A29 ("At Yale, where classrooms are wired to the Internet, students can also surf the Web, send e-mail or even trade stock."); Sara Silver, *Wired Classes Give Lesson in Interest of Students; Access to Web Can Turn Off Attention*, CHI. TRIB., Mar. 12, 2001, at 6 (" '[H]aving a fully wired classroom is an unfortunate temptation [that] somehow disengages the student from what's going on in front of the classroom.' ") (quoting UCLA Professor Scott Carr). Courts would also have to ensure that the laptops were purged of any materials from previous trials. Of course, new technologies will require new safeguards. *See, e.g.*, Glenn Fleishman, *The Web, Without Wires, Wherever*, N.Y. TIMES, Feb. 22, 2001, at D1 ("Wireless high-speed Internet access . . . is finally arriving at hundreds of access points in public and private places across the United States.").

[143] *See supra* text accompanying note 134.

[144] *See, e.g.*, ABA/BROOKINGS SYMPOSIUM, *supra* note 17, at 8 ("The evidence indicates the jurors take their responsibilities very seriously and attempt to reach fair and just results."); Joe S. Cecil et al., *Citizen Comprehension of Difficult Issues: Lessons from Civil Jury Trials*, 40 AM. U. L. REV. 727, 751 (1991) (discussing a study that showed that jurors in both long and short trials took their task extremely seriously).

[145] In California Superior Court, for example, jurors in criminal trials take the following oath: "You and each of you, do solemnly swear that you will well and truly try the cause now pending before this Court, and a true verdict render therein, according to the evidence and the instructions of the Court, so help you God?" CALIFORNIA SUPERIOR COURT CRIMINAL TRIAL JUDGES' DESKBOOK 356 (Ronald M. George ed., 1988).

jury duty into citizens who are eager to serve on the jury and to perform their job well. In addition, the courtroom setting,[146] replete with its official seal, flag, court reporter, and bailiff, and presided over by a robed judge, all convey the seriousness of purpose for which the jurors have been summoned. Although there is drama in a trial, few jurors will confuse the trial's drama with a production they might see in the theatre. Although there might be monitors or videos, it seems unlikely that jurors will view the equipment as if it were there for entertainment purposes.

Admittedly, cameras can fail to show certain perspectives that jurors might have observed if they had seen the remote witness actually testify in court; yet, this remains a problem even when jurors actually observe the witness testify. All twelve jurors will have a slightly different perspective from their seats in the jury box. Thus, one juror may be able to observe a detail that another juror cannot see. Yet an advantage of group deliberation is that it allows for the consideration of individual jurors' perspectives, recollections, and interpretations.[147] Moreover, while the camera's focus might obscure some details, the close-up of the witness' face might highlight other details that would otherwise not be visible to the jurors if the witness had been testifying from the witness box.

V. OVERCOMING BARRIERS

A. *Finding Advocates for Change*

One difficulty in seeking new tools for jurors is that there is nobody to advocate on their behalf. Most trial judges have grown comfortable with their own courtroom procedures and have little incentive to change them. Attorneys have also become accustomed to certain ways of proceeding at trial. If

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[146] *Cf.* Patricia Ewick & Susan S. Silbey, *The Architecture of Authority: The Spatial Nexus of Law and Science, in* THE PLACE OF LAW, AMHERST SERIES IN LAW, JURISPRUDENCE AND SOCIAL THOUGHT (Austin Sarat ed., forthcoming 2002) (describing the ways in which the laboratory setting confers credibility on scientific findings).

[147] *See, e.g.*, Ballew v. Georgia, 435 U.S. 223, 232-38 (1978).

attorneys enjoy success for their clients with traditional methods, then they, too, have little reason to seek change. Change is uncomfortable and unpredictable. The repeat players, judges and attorneys, who are in the best position to have an overview of the trial and the tools that may be most helpful to jurors, also have strong incentives to resist change. New tools introduce new uncertainties; attorneys worry about how any new tools might affect their clients' chances of success and their own sense of control, while trial judges worry about how they might affect appellate judges' rulings.

Jurors are unlikely advocates for new tools because their service is temporary. Some judges ask for jurors' opinions after a verdict has been reached, either in post-verdict interviews[148] or through exit surveys,[149] but most judges do not solicit the views of jurors. Jurors serve and then they depart. Some who feel strongly about an issue might write to the judge afterward,[150] but for the most part, jurors keep their views to themselves. Even if they would have liked certain tools with which to do their job, once they have been dismissed their input is no longer sought.

B. *Educating Appellate Courts*

One possible source of change is the appellate judge. If trial judges knew that appellate judges would support new tools for jurors, they might be inclined to experiment. At present, however, trial judges must worry that they put the verdict in jeopardy whenever they deviate from traditional practice.[151] One reason that trial judges rely so heavily on

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[148] *See, e.g.*, JURY TRIAL INNOVATIONS, *supra* note 62, at 200-02 (describing procedures for post-verdict conversations between judge and jury).

[149] *See, e.g., id.* at 209-10 (describing the use of exit surveys by the court); *id.* at App. 15 (providing samples of exit surveys).

[150] *See, e.g., id.* at App. 13 (providing a letter from a juror in a high-profile case who described the stresses of jury service and recommended that the court provide jurors with information after the verdict about whom to turn to in case of emotional difficulties in re-adjusting to daily life).

[151] *See, e.g.*, Commonwealth v. Kerpan, 498 A.2d 829, 831-32 (Pa. 1995) (holding that an instruction telling jurors that they could discuss questions with each other during the trial was such "a clear departure from the common practice in the courts of this Commonwealth" that it constituted ineffective assistance of counsel and required a new trial).

pattern jury instructions is that they have been tested and upheld by appellate courts.[152] Trial judges are wary of deviating from the language of pattern instructions, even when it would be in the interest of plain English to do so. They fear that the appellate court will reverse the verdicts and that all the work and resources invested in the first trial will have to be reinvested in a second trial. However, if appellate courts took a deferential view toward experimentation with jury tools, and even recommended jury tools,[153] then trial judges might have more confidence in introducing new tools to the jury.

C. *Educating Citizens*

Another route is to educate citizens about jury duty and to encourage them to think about the tools that would enable them to perform their role more effectively. This route is consistent with the idea of the active juror. Why wait until jury duty to encourage active participation? Why not begin educating citizens before they are summoned to serve and ask them to start thinking about the tools they would need to perform their role as jurors effectively?

A number of groups have already begun thinking along these lines. For example, the Fully Informed Jury Association ("FIJA") seeks to educate citizens about the jury's power to nullify, so that when citizens are seated on the jury, they know about this power even though the court will never tell them of it.[154] They seek to educate citizens through a Web

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[152] For an example of pattern instructions, see CALIFORNIA JURY INSTRUCTIONS, *supra* note 33. For a recent challenge to these inscrutable instructions by a "group of reform-minded legal experts and lay citizens," see Mike Kataoka, *Eschewing Obfuscation: The Judicial Council Strives for Plain English With Its New Jury Instructions*, CAL. LAW., Dec. 2000, at 52; *see id.* at 83 ("CALJIC . . . tend[s] to parrot the language of the state's statutes and appellate opinions. The task force, on the other hand, is seeking to promote clarity without sacrificing precision.").

[153] For example, the Seventh Circuit suggested that trial judges consider providing jurors with a copy of the written charge or a recording of it for the jury room so as to reduce the need for additional instructions and the introduction of possible error. *See* Sand & Reiss, *supra* note 84, at 456-57 (suggesting, as a means of error reduction, " 'sending into the jury room . . . either a written copy or tape recording of, together with equipment to enable the jury to hear, the complete instructions' ").

[154] *See* Marder, *supra* note 2, at 956-58 (urging courts to instruct jurors about their broader role, including the possibility of nullification).

site,[155] bumper stickers,[156] newsletters,[157] and leaflets distributed outside the courthouse door. FIJA also lobbies legislators to introduce bills that would require courts to inform juries of their power to nullify.[158] Professor Paul Butler has also urged churches and grass-roots organizations in the African-American community to inform their members about race-based nullification. He recommends that African-American jurors vote to acquit in cases in which African-American defendants have been charged with and are being tried for non-violent, victimless felonies, such as drug offenses.[159] His theory is that African-American jurors need to engage in race-based nullification so that African-American defendants will remain in the community where their contributions and presence are sorely needed rather than in prison.[160]

Although FIJA and Professor Butler have recognized the need to educate citizens about their rights and power as jurors (albeit for different ends), courts should not leave civic education to various special interest groups. If students learn about the jury in school[161] and on court Web sites,[162] and if

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[155] *See* FIJA Official Web Page, *at* http://www.fija.org (last visited July 23, 2001).

[156] *See* FIJA Order Form Activists' Supply Shop, *at* http://www.montana.-com/fija/orderfrm.htm (last visited July 23, 2001).

[157] *See generally* FIJA ACTIVIST (Helmville, Mont.).

[158] *See, e.g.*, Joe Lambe, *Bill Would Let Juries Decide Law in Cases; Legal Establishment Reacts to Measure with Shock, Dread*, KANSAS CITY STAR, Apr. 8, 1996, at A1 (describing FIJA's efforts to introduce "[s]imilar bills . . . in 25 state legislatures since 1991"); Frank Santiago, *A Red-Hot Subject for Judges, Lawyers*, DES MOINES REG., Dec. 17, 1995, at 1 (describing FIJA's efforts to introduce a bill in the Iowa House in 1994 that would inform jurors about nullification).

[159] *See* Paul Butler, *Racially Based Jury Nullification: Black Power in the Criminal Justice System*, 105 YALE L.J. 677, 679 (1995).

[160] *See id.* at 715 ("Finally, in cases involving nonviolent, *malum prohibitum* offenses, including 'victimless' crimes like narcotics offenses, there should be a presumption in favor of nullification. . . . If my model is faithfully executed, the result would be that fewer black people would go to prison . . . .").

[161] *See* JURY TRIAL INNOVATIONS, *supra* note 62, at 27 (describing The Council for Court Excellence's "You Decide" educational package, complete with a companion teacher's guide, which is now being used by school systems in more than twenty states); National Jury Web Site, Jury Summit 2001, N.Y., N.Y. (Feb. 3, 2001) (describing efforts by several individuals who design programs to educate students about the jury).

[162] *See* Donald E. Shelton & Michael R. Arkfeld, *Communicating with the Public on the Internet*, JUDGES' J., Winter 2000, at 22 (providing examples of courts that have Web sites to teach children about the court system).

courts continue this education by teaching all adults about jury duty through the techniques pioneered by the special interest groups, citizens who are called to serve will be better informed in advance of their jury service. They will be in a better position to be active jurors who can advocate for change on their own behalf.[163] If courts fail to step in, then citizens will continue to be educated about the jury from such dubious sources as television shows, movies, and special interest groups with political agendas.

CONCLUSION

The institution of the jury is under attack. Critics charge that the jury is a moribund institution that can no longer perform the complicated tasks that are required of a modern decision maker. Rather than giving in to these charges, the more sensible course is to update the tools that jurors use to perform their tasks in an increasingly complicated world, so that jurors can play an active role from the outset. Some of these tools rely on widely available technologies, such as notebooks and tape recorders, while others require more state-of-the-art technologies, like Web sites and laptop computers. Courts should introduce these tools into the courtroom to enable jurors to move from the passive model that has characterized the juror's role throughout much of our modern-day history, to an active model that should become the model of the juror in the twenty-first century.

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[163] *See* JURY TRIAL INNOVATIONS, *supra* note 62, at 26-27 (describing various campaigns to educate citizens about the jury, including one in Pittsburgh, Pennsylvania, with the slogan "Jury Service: Your Role in the Justice System," which made use of a giant electronic billboard and a booth in the City-County Building, with staff who passed out literature, demonstrated a new automation system, distributed a "juror quiz," gave out bumper stickers, and ran a juror orientation video).