

1976

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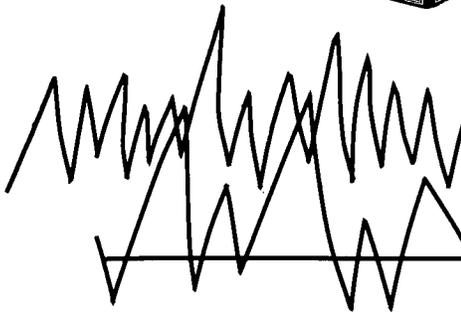
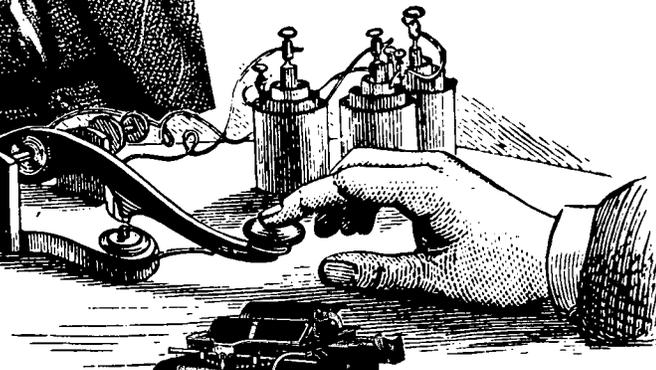
Recommended Citation

60 *Judicature* 84 (1976-1977)

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Will courts meet the challenge of technology?



by Jethro K. Lieberman

Almost everything we accept as part of our ordinary lives on the 200th anniversary of this nation's independence would have been wholly mystifying to those who lived in the Founding Age. That a businessman or tourist could lunch on the Pacific Coast and dine in the East on the same day, that anyone could routinely carry on a conversation with anyone else across the space of a town (or a continent or an ocean), that watching a live sporting event in Europe on a screen in the comfort of an American living room would be unremarkable—all these commonplace events and a thousand others would have earned the foolhardy prognosticator the opprobrium we reserve today for those who speak earnestly of having conversed with Venusians or who wish the world to prepare itself soon for time travel.

Even Benjamin Franklin, that most fruitful genius of the eighteenth century, could scarcely have guessed where his researches into the nature of electricity would lead technologically, much less what social effects the development of electric power would occasion. The most daring thing anyone could then conceive was steam power, which was just becoming commercially practicable.

One hundred years later, during the centennial celebrations, life had changed dramatically, yet it was still nothing like we know today. The most important application filed with the U.S. Patent Office in 1876 was Alexander Graham Bell's for the telephone (Edison patented the microphone and Otto perfected the gasoline engine in the same year). The telephone was surely the most far-reaching invention since C. Latham Sholes, the Milwaukee printer, patented his mechanical "Type-Writer" nine years before (a device only Mark Twain took seriously at first, it would not come into general commercial use until the turn of the century).

Today, the mere listing of the inventions

and discoveries that have transformed American life during the past 100 years would fill volumes. No significant institution has been left untouched by modern technology—with the possible exception of the courts.

That can't be true, you say? Think for a moment. Think for a moment beyond the automatic elevator that takes you to the proper floor, the telephone that sits on the judge's desk in chambers, the fluorescent lighting, the central heating and air conditioning, the simulated woodgrain plastic table tops, the electric typewriter yoked to a paper tape for speeding up the production of opinions—all the things that make the courthouse, as a building and an office, recognizable as belonging to the present rather than the past. In what manner have these innovations influenced the judicial procedures for determining truth and resolving disputes? In what manner have these modern appliances assisted in the struggle for justice?

Transport a jurist from the nineteenth century, bring him up to date in the English language, the substantive law, and the rules of procedure, and he could ascend the bench straightaway. The basic framework of litigation would not surprise him, nor would the functions performed by court personnel. Indeed, judges from remoter pasts than the centennial year could function in the modern role as well. Until very recent times, the technological revolution had largely passed the courts by. "The practice of law in most courtrooms today is about as modern as the practice of surgery in a barber shop," one group of technology advocates has written.

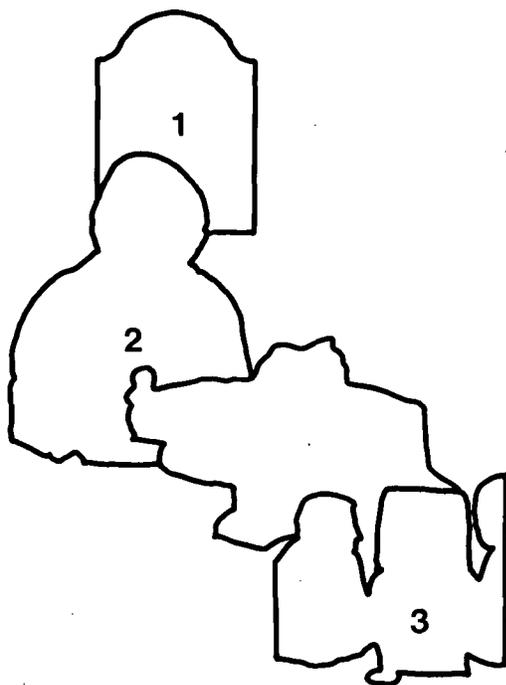
Now all that is changing. Computers and videotape, to name the most prominent technological developments, have invaded the back rooms and trial rooms of courts throughout the United States. In the short compass of the present article it will be possible only to set forth these develop-

ments (and hint at a few others) in broadest relief. Taking such a tack may prove useful, however, because all too many articles of late have failed to go beyond the immediate applications of the revolutions they preach.

Computers to the rescue?

Deprived of their computers, large-scale enterprises in the United States would collapse. No institution that must keep track of hundreds of thousands or millions of customers could conceivably continue to operate, at least without dramatically increased labor costs and a record of mistakes that would soon become a serious national issue. That, precisely, is where most courts are now.

Stories can be multiplied endlessly, so



1. Alexander Graham Bell's patent application for the telephone was filed in 1876. (Bettmann Archive) 2. Benjamin Franklin, inventive genius of revolutionary times. 3. A judge reviews court data on a cathode ray tube terminal.

consider just this one. A former assistant in the Manhattan district attorney's office recalls the case of a man locked up in the Tombs in the mid-1970's for two years pending trial because his file was lost. No one intended to make him wait; it was just that no one knew he was waiting at all. Despite its Hellerish overtones, the mistake is understandable: in a city that makes some 200,000 arrests every year, "slippage" is inevitable. But it is also intolerable, and it is here, in the area of clerical tasks that relate to the maintenance of lists—dockets, calendaring, individual case progress reports, jury selection—that the by now not-so-new computer technology will be most effectively harnessed.

There is much to be done. Clerical tasks are still largely performed manually. The court clerk's office in many large cities is a sluggish bureaucracy that might make the U.S. Army seem efficient. Important details of pending litigation are laboriously copied out in longhand into heavy ledgers; bulky files have to be transported from floor to floor, and documents (or entire case files) cannot always be found. Getting help on the telephone is possible but far from dependable.

The technological revolution in size and cost could wipe out these difficulties within the decade in every courtroom in the United States, legislatures and Congress willing. For it is now entirely feasible (as is being demonstrated in selected courts in many states) to store in computer memories every transaction in a given case, available for instant display on a television screen at the touch of a few buttons (with instant transcription on paper available at the touch of but one button more). Delay, one of the most serious impediments to justice, whether criminal or civil, could be eliminated—at least that delay caused by the clerical process, the press of business, and the size of the undertaking. Without computer aid, the problem can only grow worse.

In 1940, 68,135 cases were filed in the federal courts. Ten years later the total rose to 92,342. By 1960 the figure was down a little, to 89,112. The explosion came during the 1960's. In 1969, 112,606 cases were filed;

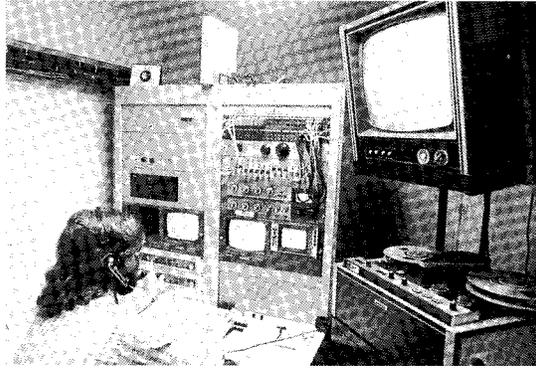
five years later the total climbed to 143,284. And though the number of authorized trial court judgeships more or less kept pace, many seats remained vacant for political reasons. In any event, this staggering case-load has been dumped on a clerical staff that has *not* kept pace, in terms of either staff or efficiency. The problem has been at least as acute in the state courts.

In a computerized system, data would be instantaneously "filed" in each case. Arrests, arraignments, indictments, complaints, answers, motions, postponements would all be noted in the record, and the text of all pertinent documents likewise would be contained therein. Someday, no doubt—the technology is available now—the plaintiff's attorney will enter the complaint directly into the computer, which will automatically notify and send copies to defendants. From his office the lawyer will be able to transact all business that he currently conducts in person in the clerk's office. When printouts of every case reach the administrator's desk, with flags attached to trouble spots, it will be impossible to keep a defendant incarcerated because a file is lost. Additionally, the computer would schedule the calendar, select jurors from voter lists, and prepare and address summonses and all other notices.

The existence of such extensive and easily obtainable files and systems may do more than increase the convenience of the parties or the clerks, however. It should:

- Force the employment of a higher-quality court personnel while reducing their total numbers. Computers are not toys, and adapting to computerized systems requires a high degree of skill and mental alertness. Rote and drudgery will largely be eliminated, leaving only more skilled tasks. (If qualified people are not found, the system will be doomed to fail.)

- Bring about a reorganization of staffs and procedures. Computer simulation, based on statistics which the computer systems will automatically generate, will enable administrators to determine for the first time how to deploy personnel most efficiently. Should cases be broken apart and assigned to different lawyers in the D.A.'s office, or should one lawyer carry them all



A technician monitors a mock trial in the video control room at Hastings College of the Law, University of California.

the way through? What would be the most efficient use of one or two or x number of extra attorneys? What types of cases or factors in the cases are not amenable to conventional litigation and ought to be assigned to arbitration or some other process? These questions can be answered now at best only by inspired hunches. Computer simulation will permit much of the guesswork to be removed.

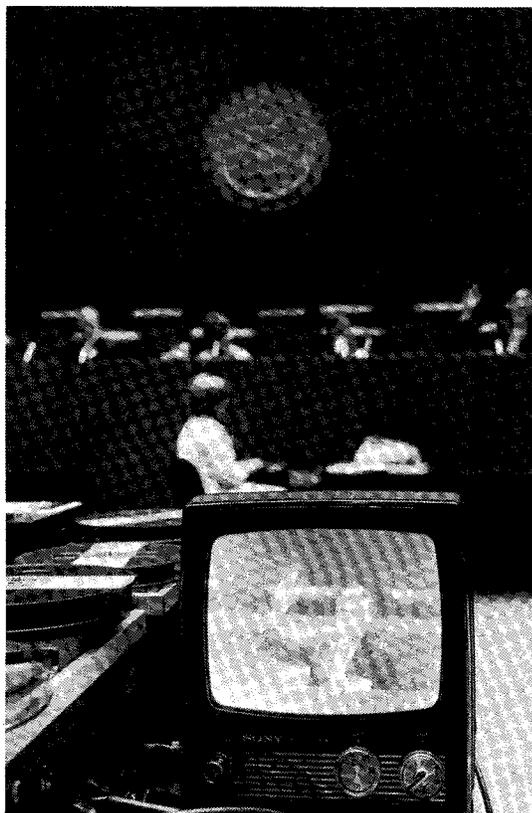
- Pressure judges and other court personnel to work harder. Efficiency of court personnel—including, especially, judges—will become a matter of statistical record. Just as the computerization of the private law firms' time records generates voluminous statistical evidence showing which of the associates—and partners—are most productive, so the computer will show whose docket is the oldest, whose is most crowded, who is most diligent, who wastes time. The potential impact of this development is huge and not necessarily beneficial. Many judges will resent being tethered—or feeling as if they were tethered—to an implacable disgorger of mile-long folded paper. They will fear the loss of their autonomy. They will resist computerization; they will attempt to sidetrack or minimize its impact; some may ultimately attempt to deceive or even sabotage it.

We can reject the arguments of those judges who fear the loss of long afternoons for golf without rejecting one aspect of their worries. Efficiency does not equal justice. General efficiency may make for a higher general standard of justice but result in

a greater injustice in a particular case. If a judge's worth comes to be measured by a constantly escalating case-per-hour ratio, no one wins. And at least one writer warns of the dangers of blackmail if law enforcement agencies, because they may operate a computer system for the courts, can learn through computer-generated statistical data how well or badly each judge performs.

Moreover, we know precious little about how our culture will change in general as a result of individuals' adapting themselves to computers, and we know nothing at all about this in the context of the courts. One problem cannot fail to have escaped the attention of anyone who has ever dealt with a store's accounting office that has recently converted to computerized credit. Catch the billing department in an error and point it out: nothing will happen. No, not quite nothing; the computer will demand payment in a carefully modulated campaign of rising invective. It can take months to force the store to correct the record, because the computer system is not designed to correct original errors. Any general judicial computerization will require, at a minimum, a program that can be promptly and easily corrected. This ought to be the function of a separate office—the computer ombudsman—perhaps attached to the general administrative office; in no event should the responsibility for correction be lodged with a particular attorney or judge handling the case.

This consideration gives rise to another—the loss of privacy. As a general rule, court records are open to the public. Anyone may inspect the documents and notations that pertain to a particular case, but the catch is that the curious—whether a member of the press, a political opponent, or one of the public at large—must come down to the courthouse. This “nuisance” is overshadowed by the difficulty of finding anything in a system that is notable for a lack of cross-referencing. If you know a docket number (or a name and the date on which the legal action commenced), you can generally find what you want. But these are not always available, and so, as a practical matter, material in the record does not travel very far.



A speaker is recorded simultaneously by videotape and court reporter.

The computer, however, changes all that. It is—or will be—programmed for cross-reference (dates, names, crimes, docket numbers—even social security numbers?). When such information as arrest and presentencing reports go into a state criminal history file, the potential for widespread dissemination of personal matters becomes apparent. Even if the information is locked in a “secure” memory, the potential for abuse by those with access to the password or by those who learn to tap into computers will remain a ticklish problem. In any event, it will focus attention on the question of precisely what types of information should be kept within the judicial system, forbidden to the public and to law enforcement agencies alike.

Toward a two-dimensional trial?

From some quarters, we hear that the most exciting technological prospect now awaiting the American court is the abolition of

trial tedium with the ultimate in American entertainment: television. The same videotape techniques pioneered for Superbowl instant replay will, it is confidently predicted by a number of enthusiastic writers, enable the jury to watch an edited version of the trial on a split screen. Instead of enduring the delays and fatigue of a drawn-out trial, the jurors will see a smooth, continuous version, available for review as necessary.

This is no fantasy. Dozens of such trials have already been conducted, and doubtless many more will follow. The restrained use of videotape makes sense, and many believe videotape will soon become a fixture in American courtrooms.

Regular readers of *JUDICATURE* are familiar with the literature and the issues, but it will be useful, at least for the uninitiated, to summarize videotape's three basic potential applications.

First is its use in preserving the trial record. This seems sensible. Most trial records are never transcribed simply because most cases are not appealed. It should be cheaper to record on reusable magnetic tape than to pay the top wages of a court reporter. This proposition is not entirely free from doubt; court reporters have heatedly raised a variety of arguments. They suggest, for example, that when a record does need to be prepared for appeal, the cost is higher when it is transcribed from magnetic tape than from a stenotypist's tape. Perhaps that is so, but we may assume these to be short-run difficulties. Direct computer transcription from sound will eventually become feasible. Such a development will largely answer the accurate observation that it is more time-consuming and less productive for appellate judges to study the videotape record than the traditional trial transcript (because the videotape has so much more unavoidable information, much of it irrelevant to the appellate court, packaged in). The belief that judges will be able to compare, analyze, and root out trial error by means of videotape rather than a written record is a McLuhanacy that no videotape technology can cure. But these problems will be surmounted instead by more sophisticated computer technology,

and these objections will vanish with the production of a printed transcript.

The second major function of videotape will be to put into evidence such things as testimony of witnesses and close-ups of documents by (as it were) remote control. At the moment the technology is crude—or to put the point more accurately, the economic base of the technology is underdeveloped. The idea is to save a distant or busy witness the trouble of having to come to court to testify. The county medical examiner or the expert witness now residing in Alaska can appear before the jury on tape. Of course, counsel will still be obliged to fly out to Alaska or go to the morgue for direct and cross-examination, so there may be no net saving of time, at least in the short run. Over the long haul, however, when videotelephones become as widespread as the voice telephone is today, an expert witness in Hawaii can be routinely questioned by lawyers in Alaska and Texas for a trial in New York.

In time, all depositions may be so handled, and it may likewise become unnecessary ever to come to court for motions. Judges, lawyers, and witnesses may conduct business outside the trial entirely by electronic image from the comfort of their respective offices. Of course, this is *video* but not *videotape*. Such use of technology will grow, for the most part without objection, since the saving clause will always have it that video conferences, depositions, and the like may be employed where necessary to save time. Since people rarely object to saving time, no one will object when video technology in fact does so.

This leads to the third and most controversial use of videotape: the prerecording of the entire trial. There are several supposed advantages: 1) It will save the jurors' time (the first full videotaped trial, in the courtroom of Ohio Judge James L. McCrystal in November 1971, was reduced from five days to a tape of two hours and forty minutes). 2) It will eliminate prejudice and errors (improper remarks can be deleted from the jury's tape so that the judge need no longer admonish jurors to ignore remarks just stricken from the record). 3) If a jury is hung, another

jury can witness the identical trial. 4) If an appellate court rules that the trial judge erroneously edited out testimony, the original tape can be played to a new jury (or the same one?), without the current necessity of retrying the case altogether.

But these advantages, attractive at first blush, are ambiguous. Time saved the jury must be spent at another's expense. There will be time consumed in editing. There will also be an inevitable tendency to play out all lines of questioning for pre-editing review by the trial judge—after all, the jury is not tainted with illicit or irrelevant knowledge if it can be edited out. And there will quickly develop a body of learning known as “proper editing”: is this elision sufficiently long, properly disguised? Can it be made without destroying the context of the discussion? Even the casual reader of Richard Nixon's abridged tape transcripts will recognize the difficulties.

Deeper, psychological problems remain. These relate to the perceptual reactions of participants and jurors to tape. Some preliminary studies have suggested that there are not significant perceptual differences in the minds of jurors between seeing live and taped testimony. But these studies are largely simple-minded. One such study, for example, took a relatively simple trial in which the merits of the two positions and the skills of the opposing attorneys were more or less evenly matched. This is hardly a typical case; moreover, the reactions tested were, of course, of two different juries, not the same group of people.

It does not take a great deal of imagination to see that squinting at a trial on a small, two-dimensional television screen—even one specially prepared for simultaneous display of distant, foreground, and close-up shots—may strike an impression on a juror profoundly different than seeing a witness in the flesh. Someday, perhaps, this difficulty can be overcome, at first by using lifesize screens and eventually through the use of full-scale, three-dimensional holographic processes that project the entire filmed scene into the jury room as though it were live. But that is a long way off. In the meantime, even proponents of videotape seem to recognize

the psychological difficulties, because they allow lawyers' summations to be presented to the jury live. Participant reactions, too, could be seriously affected, as anyone will realize who ever froze when asked to talk into a tape recorder or to leave a message with a telephone-answering machine.

Still other problems appear. The jury in a fully videotaped trial would forfeit forever the right—if it has not already been preempted by experts—to ask questions of witnesses and parties. Moreover, the severe time compression of the videotrial could seriously disrupt the deliberative process. As a research attorney with the American Bar Foundation has written: “Opportunities for thinking, rethinking, self-examination, and interaction with other jurors will be affected. In addition, the capacity of the jury to concentrate on the event will vary with the time and the medium. Concentrating on several consecutive hours of condensed legal proceedings on a screen may pose difficulties. Jurors might lose track, become distracted, or have a variety of other reactions.”

Too much presently remains unknown (and perhaps unknowable) to follow the siren call toward total tape. If the judiciary wishes to avoid baffling perplexities, it must take videotape in small doses.

More to come

The editors of this issue asked for projections into the third century of American life. Prediction is always hazardous, but it is eminently clear that computerization and videotaping are not the only technologies with which the courts will come into personal contact during the next several decades. Since we can expect the growth of new technologies to be exponential (we are now only at the beginning), the rate of innovation should be truly dizzying by the tricentennial. We might adopt as a rule of thumb that whatever we can now imagine will come true sooner rather than later. It is what we cannot imagine that takes a little longer. So, the following points are raised briefly as examples of what will come well within the next century and more than likely within the lifetimes of many of us.

New ways of determining truth: Advances in voice analysis and in our knowledge of the chemistry and biology of the brain will dramatically affect the adversary system and raise serious constitutional questions. For more than a century now, science has made steady and important contributions to the detection of crime. Fingerprint and laboratory analyses are standard weapons in the police armory, but these are useful only when there are in fact fingerprints or chemical traces relevant to the case. Too often a trial (civil or criminal) turns on the fading, failing, or crooked conscious memories of individual participants or witnesses. The lie detector is not sufficiently reliable for courts to permit its results into evidence. In any event, the lie detector simply indicates the probability of veracity with respect to particular questions; it does not provide any direct means of ferreting out the truth itself.

New technologies do. Voice analysis, if perfected, will become a conclusive means of identification. Far more important will be advances in brain research. Scientists now know that stimulation of certain portions of the brain can cause what are known as eidetic memories to be recalled—colors, sounds, odors, textures rush to the surface of the mind in minute detail. People relive whole experiences; entire conversations are dredged up. Will electrical and drug stimulation based on such researches be held to violate the Fifth Amendment or a person's right to privacy generally? Or will these techniques, too, become so irresistible that no one will any longer need to resort to cross-examination? Will machines be built to simulate eidetic memories so that any lie detector would be fooled? A frightening prospect? Perhaps, but one with which our grandchildren may well be faced.

Implications for sentencing: Brain research will also greatly sharpen our ability to control behavior. Already the law is having to face up to the consequences of behavior-altering drugs and operations. May a person who is not "competent" consent to drug "therapy" or brain operations? May a guardian consent for such a person? When the functioning of the brain is better understood, so that we can (or think we can)

predict with some confidence the likely behaviors of specific individuals, and when we can alter that behavior, there will necessarily be a revolution in sentencing. A whole new jurisprudence of punishment, rehabilitation, and preventive detention will displace the older learning, sweeping jails as we know them to history's garbage dump.

Jury collapse: Perhaps this is already upon us. The Patricia Hearst jury is only the most vivid example of evidence that is beyond the ability of non-experts (which we all are outside our specialities) to evaluate in any truly sensible manner. If half a dozen psychiatrists with a hundred years of schooling among them cannot agree, of what use is their learning to the courts? The problem can only worsen as claims are made that computer modeling, super-sophisticated detection techniques, and probability theories can precisely identify the guilty. When a California court chose to permit into evidence the statistical frequency of occurrence of a bank-robbing team consisting of a long-haired blonde woman and one black man as relevant to the guilt of a particular couple conforming to that description, it got into all kinds of trouble. Such trouble can only multiply in the years ahead.

Judges swamped: Super-sophisticated technology will also lead to techniques so subtle that entire trials may be consumed in testing the validity of operations performed on prodigious computer memories. In times to come, complex economic trials—antitrust and employment discrimination cases, for example—will depend heavily on computer modeling and simulations. Even now, the data in trials such as these are too voluminous to make much sense of manually. How will jurists, trained in law, cope with the relevance or validity of the modeling? More impossible still: when techniques for covertly altering computer memories or programs are perfected, how will anyone be able to rely on the technology at hand?

We can only hope that other technologies will have so altered social conditions in the coming "post-industrial," "quaternary" age that these fears become laughable—or moot. □