Communication in the Courtroom

Technology is helping to provide equal access to the law

by Dorothy Smith

The court stenographer's hands are poised over the keyboard as the defense attorney rises to make her opening statement. The eyes of the spectators, judges, and jury follow the attorney as she approaches the jury box. Her client, meanwhile, sits at the defense table and intently watches. . .television.

It's not because of indifference that the defendant is staring at a TV screen rather than at his lawyer. He is deaf and is watching the proceedings of his trial through computerized real-time captioning equipment, an example of one of the ways technology is making the legal system more accessible to hearing impaired people today.

Because hearing impaired people may be in court in a variety of roles, including those of witness, defendant, plaintiff, juror, attorney, judge, or spectator, a variety of communication modes may be needed. In some of these cases, the court is required to provide communication access to the proceedings for the hearing impaired person. In many instances, however, deaf people have been denied equal access to the judicial system through a lack of adequate communication options available to them.

As recently as the early 1970s, before the strengthening of laws requiring the courts to provide hearing impaired people with qualified sign language interpreters and before modern technology entered the courtroom, deaf people who had to go to court were not able to understand much of the legal proceedings going on around them.

Defense attorney Richard Ricks uses an FM system as he argues a case before the Superior Court of the District of Columbia.

Dorothy Smith is a writer-editor in the Scientific Communications Program in the Gallaudet Research Institute.

Indeed, some convictions in cases involving deaf defendants have been overturned because the court determined that the defendants were not able to understand the proceedings and take an active role in their own defense. In the Los Angeles Superior Court trial of Michael Hernandez Contreras, accused of two counts of murder, one attempted murder, and two counts of possession of a deadly weapon, for example, the court relied on modern computerized court reporting technology to make certain that the defendant was "legally present" during this trial, in an attempt to prevent the decision from being overturned as it had been in an earlier conviction on another charge.

For many deaf people who are skilled in sign language, the presence of a highly trained legal interpreter in the courtroom can provide an effective flow of information, despite the rapid pace and legal terminology of the trial. Through sign language interpreters, or oral interpreters for hearing impaired people who are skilled at speechreading and prefer this mode of communication, deaf people can participate more fully in court proceedings.

Some court officials are reluctant to use qualified interpreters, how-

ever, because of funding concerns; others claim that interpreters will prove distracting during the proceedings or jury deliberations. And some opposing attorneys challenge the competence of the courtroom interpreters in an attempt to have the court's decisions reversed. For these reasons, some courtrooms videotape the interpreter's performance in case questions of competence and interpretation arise on appeal.

However, for hearing impaired people who have experienced their hearing loss as adults and who may not have developed speechreading or sign language skills to a high degree, providing an interpreter in the courtroom does not automatically ensure effective communication. In these situations, technology of some kind often plays a significant role.

In 1982, when Michael A. Chatoff became the first deaf attorney to argue a case before the United States Supreme Court, he was assisted by a computerized transcribing machine. The event was the first time in its history that the Supreme Court had allowed outside electronic devices to be used during argument, and in so doing the court opened the door a little wider to more complete access to the legal system for hearing impaired people.

Attorney Chatoff lost his hearing during law school and had not acquired sufficient speechreading and sign language skills at the time of the 1982 Supreme Court hearing to benefit from either sign language or oral interpreters. In earlier hearings in lower courts he had relied on notes taken by an assistant during the hearings, but admitted that he had missed "about 50 percent" of what the judges were saying. Chatoff won permission from the Supreme Court to use a computerized transcribing machine that would permit him to read and respond to what the justices and others said with only a few seconds of lag time. Since the 1982 Supreme Court argument, such computerized "real-time" captioning systems have appeared in courts across the country, representing the beginning of an era of technological advancement in the courtroom.

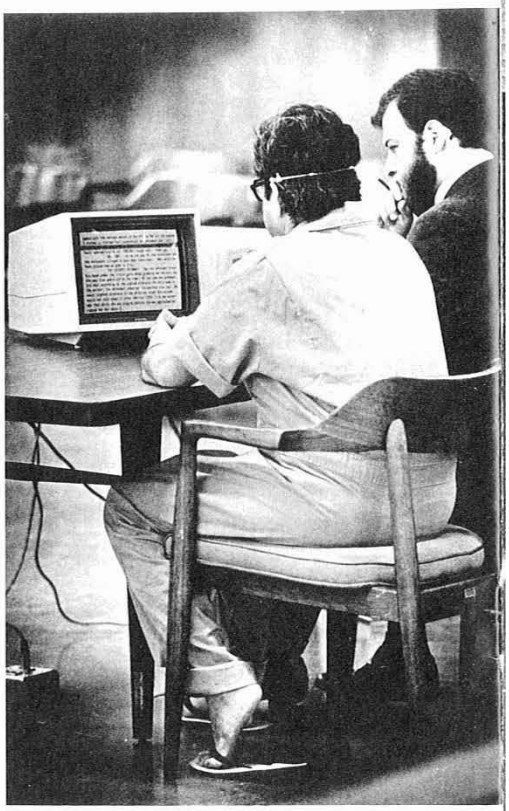
The computer-aided transcription (CAT) system requires a specially trained court reporter, a standard courtroom transcription machine, a computer, and peripherals such as monitors for reading the text of the proceedings or writing boards for recording responses from hearing impaired people whose speech is unintelligible. Such real-time captioning requires technology capable of generating accurate text at speeds as high as 300 words per minute, and thus far only shorthand reporting technology can achieve such speed, with accuracy rates as high as 99 percent (one error in every 100 words).

The court reporter generates shorthand notations on the 23-key stenograph machine by striking the keyboard as many as four to six times each second. The phonetically coded notation is then electronically transferred to a computer containing the reporter's dictionary. The dictionary, which can be updated by the reporter to include proper names and terminology specific to each court case, translates the phonetic entries into their English equivalents. The English words are then sent to an output device such as a television monitor or screen. The entire process—from spoken word to visible English equivalent—takes about three seconds. This process, incidentally, is the same as that used to produce real-time captions for other live, unscripted, or partially scripted events such as the Emmy awards and television news programs.

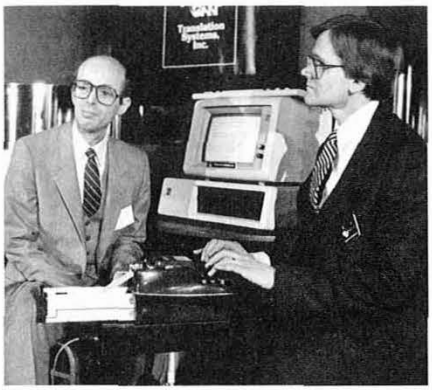
Gallaudet played a significant role in the 1982 Supreme Court case involving Michael Chatoff. Chatoff originally contacted his friend Dr. Robert Davila, vice president for Pre-College Programs, to ask if there were some way Gallaudet could help him. Davila contacted Dr. Donald Torr of what was then known as College Educational Resources, who in turn got in touch with Translation Systems Inc., a Rockville, Md., company. With minor modifications to an existing system, suggested Torr, it might be possible to help Chatoff, if the Supreme Court could be convinced. Translation Systems Inc. and Jacquard Systems, the computer manufacturer, agreed to help. After two test runs and a live run using the equipment, the justices granted their permission for its use during the actual argument on March 23, 1982, when Chatoff and the CAT equipment made history.

Deaf lawyers like Chatoff are not the only ones benefiting from such technology. A deaf judge, the Hon. Richard S. Brown of the Court of Appeals in Wisconsin, District II, has used CAT equipment in his courtroom and office since 1983. Judge Brown, who became deaf that same year from surgery, uses the technology mainly for telephone conversations and once a month to receive oral arguments in court.

Hearing impaired people are not the only beneficiaries of this new technology. Court reporters who have purchased CAT equipment often use it to expedite their preparation of transcripts. In courtrooms equipped



A deaf defendant, along with his lawyer, reads a transcript generated by real-time captioning during the court proceedings. (Photo reprinted with permission from the Milwaukee Journal.*)*



Court reporter Joe Karlovits (right) provides real-time captioning for deaf attorney Michael Chatoff at a 1982 press conference following Chatoff's appearance before the United States Supreme Court. Chatoff, the first deaf attorney to argue before that court, also used real-time captioning in the courtroom. (Photo reprinted with permission from the National Shorthand Reporter.*)*

with CAT monitors, the judge or attorneys can scroll back through the transcript to review something on their monitor that was said several minutes before without interrupting the proceedings. In addition, with permission from the judge, jurors can access the computer from the jury room to review testimony to help them reach a verdict. The machines can also be connected to a printer to provide an instant transcript of the day's proceedings. With additional software, attorneys can use the CAT equipment, connected through a modem to their own office computers, to research cases or review testimony from previous courtroom appearances.

It is important to note that although such computerized court reporting systems may be exactly what some hearing impaired people need to make the activities of the courtroom accessible to them, the same equipment may be of little or no value to a deaf person whose English language skills are not as highly developed or who has not had the opportunity to become familiar with legal terminology and courtroom procedures. Attempting to read the unfamiliar legal language during the fast pace of courtroom activities may actually inhibit rather than enhance communication, and in such cases a qualified sign language interpreter may be the most efficient means of communicating. Each hearing impaired person has unique communication needs, and the most efficient technological support for one deaf person may prove to be a hindrance to another.

For some hearing impaired people, a hearing aid may be all that is needed to improve communication; for others, especially those with more severe hearing losses, additional technology may be required. An audio loop, for example, can be used with certain hearing aids to allow the hearing impaired person to pick up specially amplified sound. With such an induction loop system, the speaker talks into a microphone that is connected to an amplifier. The amplified sound is sent through a cable (the loop) placed around the entire courtroom or a section of the room. Hearing impaired listeners whose hearing aids are equipped with a telecoil ("T" switch) and who sit within the loop area can pick up the amplified speech by turning on the "T" switch.

Another assistive listening device used by some hearing impaired people in courtrooms involves a wireless FM system in which the hearing person wears or holds a special transmitter unit to send speech sounds directly to a hearing impaired person who is wearing both a receiver on a neck loop and a hearing aid with a telecoil. Deaf lawyer Richard Ricks, a court-appointed defense attorney in the Superior Court of the District of Columbia, for example, uses such an FM system during lawyer/client conferences as well as in the courtroom, where both the judge and prosecuting attorney wear a microphone transmitter.

While the technology used in FM systems and real-time captioning has existed for a number of years, another form of technology, automatic speech recognition, is still in its infancy. Automatic speech recognition—the ability of a specially programmed computer to recognize normal conversational speech and convert that speech into either text or synthetic speech—is a technology that may someday raise hearing impaired people's equal access to legal proceedings to an even higher level.

There are about 40 to 50 products on the market today that involve speech recognition technology, but the usefulness of that technology in courtrooms varies considerably. Automatic speech recognition systems range from those programmed to recognize only a few isolated words spoken only by one specific speaker to those programmed for continuous speech that is not speaker-dependent. Speaker-dependent recognition systems can be programmed to understand "unintelligible" speech as long as the speaker is consistent in the production of the sounds, but the time required to program the system and train the speaker may be prohibitive for use in courtroom situations.

Automatic speech recognition systems can make errors in several ways, including deleting or ignoring correctly spoken words that match those in the computer's vocabulary software, and inserting incorrect words that were actually caused by background noises rather than the speaker. Some automatic speech recognition devices in use today have very small vocabularies, too restrictive for use in a courtroom, while others have higher than acceptable error rates. Nevertheless, assuming the bugs can be worked out in automatic speech recognition technology, in the courtroom of the future it may be possible for computers automatically to convert speech into printed text as it is spoken.

Computers, FM systems, and audio loops, along with the valuable roles played by sign language and oral interpreters, can provide hearing impaired people, who have a wide range of communication needs, greater access to the legal system. □