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A Revolution in Consecutive Interpretation: Digital Voice Recorder-Assisted CI

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A revolution in consecutive interpretation is in the making. This article will tell you all about it and help you get connected, so that you can quickly begin to profit from this new technology. As discussed below, a study conducted at Florida International University (FIU) showed that using digital voice recorders (DVRs) helped consecutive interpreters to improve their accuracy by an average of 35%, with little or no errors, regardless of the length of the statements interpreted.

For many years, I had been a freelance state and federal court interpreter, contending with the challenges and limitations that memory places on consecutive interpretation (CI), and struggling with the always-cumbersome note-taking system. Then, on Fathers Day 1997, I received a present that would eventually change my interpreting life. It was a keychain attached to a digital memo recorder, capable of recording a single voice message lasting only a few seconds. The recording quality was dismal, so my present was no good for interpreting, but I immediately recognized the impact that the miracle of instant playback (no tape to rewind!) would one day have on the profession.

That same year, I began my present position as professor of interpretation at FIU. Seeing my students struggle every semester with CI, memory techniques, and note-taking practice, only to achieve very modest improvements in accuracy, I began to research digital recording and playback technology with an ear for its application to CI. For the next few years, I canvassed electronic suppliers for the latest DVR technology, but all the recorders I tested had limited memory capacity and poor recording quality, which was still

quite inadequate for professional interpretation. Determined to develop my own high quality prototype, I consulted with electrical and acoustic engineers, but the high development and production costs would not be warranted for such a small, specialized market. In the meantime, commercially available DVR technology was steadily improving. I learned that recording quality was a function of processing speed, and that a detailed, high quality

“...The interpreted session will move faster, with more efficient and effective communication...”

digital recording needed an adequate memory capacity. By then, DVRs were available with a very adequate four-megabyte memory chip, but still not enough processing speed.

At last, in October 2002, I found a high quality DVR and matched it with high quality ear buds. I soon began to use it for interpreting in legal depositions, with fantastic results. It boosted my accuracy, and I found that I no longer had to interrupt the speakers. But most importantly, knowing that I had every word recorded and available right in the palm of my hand gave me such confidence, such a feeling of relief and relaxation, that my endurance nearly doubled. My clients even commented on the high quality of my interpretation.

Now all I needed to do was to test this new method in experimental trials and document the results. So, in January 2003, I began to prepare, and in April, I conducted experimental trials with the students in my legal interpreting class (test description

and results are reported here). Again, the outcome was phenomenal: average accuracy improved from 71% to 96%, regardless of statement length. Later that month, one of my students sent me a copy of an article on “Digital Recorder-Assisted Consecutive Interpretation” that had just come out in *Proteus* (Volume XII, No. 2, Spring 2003), the newsletter of the National Association of Judiciary Interpreters and Translators (www.najit.org). The author, federal court interpreter John Lombardi, had also realized the potential of the first DVRs, and had been looking for a suitable model, which he finally found in December 2002. Among many useful things he mentions in his article, Lombardi stresses the difficulty of choosing a suitable model among the various DVRs available on the market. I had tested over 20 different models and found only one that met my standards. Yet, shortly after my experimental trials, my high quality \$129 DVR model was discontinued and phased out of the market.

I then enlisted the help of my colleague at FIU, linguistics professor Dr. John B. Jensen, an experienced conference interpreter and electronics buff. We tested all new promising models and finally settled on an outstanding DVR incorporating the following features:

- Reasonably priced (under \$100);
- High-capacity memory chip for over 30 minutes of high quality recording;
- High processing speed and high quality setting for rich, high quality sound;
- Quick response time for near-instant playback;
- Built-in directional microphone with high sensitivity setting;

-
- Input and output stereo jacks; and
 - Compact ergonomic design and simple controls that can be easily operated with one hand, without looking.

Not all ear buds are created equal either. Selecting a high quality set with the best frequency response range can make an enormous difference in obtaining a clear and rich voice recording that is adequately free from noise and distortion. After testing ear buds and settling on a suitable model, we then established the LinguaSonic™ label under my language consulting firm, Verb-A-Team Inc., and put together a package that takes all the expensive guesswork out of selecting the right equipment and devising the appropriate techniques. The LinguaSonic™ package is comprised of a prime DVR, high fidelity ear buds, a telephone adapter for application to telephonic interpretation, complete instructions, and a practice audiotape to master operation and techniques. For more information, visit www.verb-a-team.com.

How It Works

The LinguaSonic™ system consists of digitally recording the source message, without the need for interrupting the speaker. Once the speaker has finished his or her statement, the interpreter listens to an instant playback of the digital recording through an earpiece, and then interprets simultaneously off the recording. That is, the interpreter has the opportunity to listen to the original message live and to begin formulating an interpretation. The instant digital playback serves as a reminder and second opportunity to listen to the message, which the interpreter now renders in the simultaneous mode. If the rate of speech is too fast, the

interpreter may pause the DVR by pressing <Stop> in order to catch up, and then press <Play> when he or she is ready to continue. Unlike a tape recorder, the DVR picks up exactly where it left off without missing a beat. The step-by-step process is described below.

By using this type of system, interpreters can dramatically improve their accuracy, virtually eliminating the need to constantly interrupt the speaker (which often results in a piecemeal, fragment-by-fragment interpretation), thus leading to a more fluid rendition. The ability of digital playback ensures that no part of the message is forgotten, thus offering a significant improvement over conventional CI. The system also allows the interpreter to listen to the entire message first, and to start preparing before simultaneously interpreting the playback. In fact, it combines the advantages of both consecutive and simultaneous interpretation. However, it is designed primarily as an alternative to conventional CI, not SI. The system can be applied wherever the consecutive mode of interpretation is used, such as in court for direct and cross examination during witness testimony, as well as in depositions, interrogations, interviews, and exchanges. It can also be used in legal, medical, social services, and business settings. It can be used both during face-to-face and, with the phone adapter, during over-the-telephone interpretation.

Conventional CI, the way it has been practiced for decades worldwide, has many drawbacks. The interpreter is supposed to interpret verbatim, without summarizing, omitting, adding, or otherwise editing any aspect of meaning. That is, the interpreter must keep the entire message in short-term memory (STM) in order to

render it accurately and completely. However, because STM capacity is limited (generally from three to seven items or pieces of information), the interpreter must interrupt the speaker every few seconds, before STM gets saturated, in order to be able to render a faithful interpretation. Even then, recall is not always accurate, and the potential for omissions, misinterpretations, and other interpreter errors is quite high. The reason for this is that the interpreter must carry out several tasks at the same time, or in rapid succession, including listening, understanding, analyzing, memorizing, formulating, delivering the interpretation, and monitoring the delivery. Commonly, the memorizing and formulating functions tend to interfere with each other. A digital recording relieves interpreters from the burden of memorizing, enabling them to shift more time and attention to formulating the interpretation. This way, when it comes time to interpret the playback in simultaneous mode, the interpretation is already partially and more carefully formulated, resulting in a more polished rendition.

In conventional CI, the only viable solution has been to interrupt the speaker every few seconds, but this is far from ideal. The speaker often loses his or her train of thought. The entire statement or testimony tends to be shortened, because the speaker is not able to speak freely or fluidly, and thus becomes less forthcoming. The speaker has more time to think and measure his or her words, resulting in less than spontaneous testimony or speech. The adverse impact of conventional CI on courtroom testimony has been amply documented (O'Barr, 1982; Berk-Seligson, 1990). The listeners, on the other hand, have to contend not only with an interpretation of the original, but also with a fragmented and ➡

partly disjointed message, the result of constant interruptions. All of these factors become crucial when listeners (or a jury) are evaluating the speaker's credibility, as is the case in courtroom testimony and in most interviews and CI sessions. Finally, the interruptions make for a laborious and often repetitious communication process that is not very time-efficient.

In order to cut down on interruptions, note-taking was developed. In 1956, Jean-François Rozan published his famous note-taking system for CI, which remains essentially unchanged today, despite several studies and revisions (van Hoof, 1962; Seleskovitch, 1975; Mikkelsen, 1983; Mahmoodzadeh, 1992; Alexieva, 1994; Gile, 1995). Yet, the Rozan method and note-taking in general also have many drawbacks. Note-taking is merely an aid to STM that allows an interpreter to handle segments of speech that are only a few seconds longer than what can accurately be stored in STM, but it still requires frequent interruptions. Moreover, the attention devoted to note-taking tends to interfere with other interpreting tasks, particularly with listening, memorizing, and formulating the interpretation. In note-taking, each interpreter must develop his or her own personalized system of abstract visual symbols that can then be "read" or rendered into the target language. For this reason, it takes years of practice to develop a somewhat effective, though still limited, note-taking system. For beginners, learning note-taking is a frustrating experience, because they find that it diverts their attention from, and gets in the way of, recalling the original message. Most beginners and many seasoned interpreters report that they recall and interpret better without notes. As a result, many interpreters

never develop a note-taking system at all. Moreover, since notes do not preserve the paralinguistic aspects of speech (such as intonation, voice quality, and expressiveness), these tend to get lost in the interpretation. An interpreter taking and reading notes is unable to establish eye contact with the speakers in order to "read" their faces for cues to determine intent and understanding. When interpreting from notes, the interpreter's voice will tend to sound like someone who is reading or deciphering a set of symbols and abbreviations, rather than someone faithfully reproducing the tone and spirit of the original message. Finally, even the best note takers are unable to keep up with a normal rate of speech, so when the speaker finishes, they may still be completing their notes instead of beginning their rendition, resulting in an awkward and inappropriate delay.

One of the most difficult aspects of CI training is developing memory techniques, including visualization, rehearsal, and note-taking. Once an interpreter is fully bilingual and has a command of the vocabulary, improving accuracy becomes primarily a function of developing memory, a process that takes many months of intensive practice. Nevertheless, many bilingually proficient individuals are unable to ever become effective interpreters because of limited memory skills. Now, with a DVR system, memory is less of an issue. Speaker interruptions and the need for laborious note-taking is drastically reduced. Interpreters will experience an immediate and dramatic boost in their accuracy and completeness, as well as in their confidence, without the stress of attempting to remember long segments of speech or the fear of forgetting important details in their rendition. Performance and quality

will also be enhanced. Using this system might also shorten interpreter training periods. Speakers will be free to express themselves fluently and spontaneously. Listeners will receive a smooth, cogent, and natural sounding message, free from interruptions and distractions. The interpreted session will move faster, with more efficient and effective communication.

Process

The following is the simple step-by-step process for using a DVR-assisted system.

1. The recorder must be set to the High Quality (HQ) mode for enhanced recording quality.
2. A high quality bud-type earphone is plugged into the recorder's output jack and inserted into the interpreter's "listening ear" (the ear with which one usually answers the telephone). Studies in hemispheric specialization of the brain have shown that simultaneous interpreters commit fewer mistakes when receiving the source message through only one earphone on their "listening ear" (Lambert, 1994).
3. The recorder's built-in directional microphone is pointed in the general direction of the speaker, and the <Record> button is pressed.
4. When the speaker finishes, the <Stop> and <Play> buttons are pressed in rapid succession for immediate playback (there is no tape to rewind).
5. If interpreting over the telephone, the phone adapter needs to be connected to the telephone and plugged into the "input" jack on the recorder. The recorder's ear

Table 1

	Group I	Group II
Round 1	DVR : English→Spanish DVR : Spanish→English	CI + Notes : English→Spanish CI + Notes : Spanish→English
Round 2	CI + Notes : English→Spanish CI + Notes : Spanish→English	DVR : English→Spanish DVR : Spanish→English

bud is still placed in the “listening ear” and the telephone handset or headset is placed right over the ear bud, also on the listening ear.

Method

Based on our research, the following is the LinguaSonic™ recommended method for DVR-assisted CI:

1. Following the process just described, the interpreter records a speaker’s question or statement.
2. While recording, the interpreter listens, understands, analyzes, and retains the message, exactly as though preparing to render a consecutive interpretation.
3. The interpreter takes notes only of names and numbers, such as dates, addresses, ID numbers, etc. In experimental trials, such items have shown to give interpreters trouble, even during simultaneous interpretation of the playback.
4. While listening to the original message, the interpreter prepares a partial formulation of the interpretation, focusing mostly on any special terms, difficult phrases to interpret, and clauses that require marked changes in structure or word order, and begins to work out solutions for these difficult spots.

5. If the interpreter does not understand or needs clarification of any portion of the message, the interpreter makes a mental note of it, allows the speaker to finish, seeks permission to ask the speaker a question, and receives the needed clarification *before* beginning the playback and interpretation of the segment.

6. When the speaker finishes, the interpreter presses <Stop> and then <Play>, and does a standard simultaneous interpretation of the recording, formulating on the go, and pausing the playback as needed.
7. When interpreting answers to questions, if the interpreter notices that an answer is non-responsive, the interpreter may interrupt the speaker in order to interpret what was said so far, rather than allow the speaker to carry on with a non-responsive narrative. This will allow the interested parties to determine the appropriateness of the answer, raise timely objections, or reformulate the question, if necessary.

Experimental Trials

In April 2003, experimental trials were conducted at FIU with a group of 24 participants comprised of advanced interpreting students and beginning professional interpreters. The participants were randomly divided into

Group I and Group II (see Table 1). In the first round, both groups were presented with a series of unrelated statements of increasing length to be interpreted from English into Spanish. They were then presented with another series of statements to be interpreted from Spanish into English. Group I used the DVR, while Group II used conventional CI with note-taking. In the second round, two fresh series of statements were again presented, the first for interpreting from English into Spanish, and the second from Spanish into English. This time, Group II used the DVR, while Group I used conventional CI with note-taking. In this manner, controls were provided to account for any differences in skills between both groups and target languages, and the effect of using the DVR could be measured as an isolated variable.

The statements presented for interpretation ranged from 18 to 95 words in length. Each subject’s interpretation was tape-recorded and later rated for accuracy in terms of the percentage of words missed in each statement. The accuracy percentage for all 24 subjects was averaged for each length of statement. The average accuracy per length of statement was then used to compare renditions using the DVR against those using conventional CI with note-taking.

Results

The chart on page 45 shows a dramatic improvement in accuracy rates, unaffected by statement length, when using the DVR. In contrast, accuracy rates quickly declined in conventional CI with note-taking as statement length increased. Other than the use of the DVR, no significant difference in accuracy was observed between Group I and Group II or between ➡

English and Spanish interpretation. The overall accuracy rate increased from 71% to 96% with the DVR, which represents an immediate improvement of 35% on average.

It is important to note that the subjects were allowed only five minutes of practice to familiarize themselves with the controls of the DVR before beginning the experiment. Also, for the sake of consistency when using the DVR, subjects were not allowed to take supplemental notes or use the <Pause> button during playback. Many of the few mistakes made while using the DVR were due to these three factors: 1) lack of practice and dexterity with the controls; 2) misinterpreting a date or address for lack of supplemental notes; and 3) falling behind during simultaneous interpretation of the playback. Therefore, it is expected that with a little more practice, and the use of both supplemental notes and the <Pause> function, as recommended in the *LinguaSonic™* method, the accuracy rate will quickly increase from 96% to 99%.

Ethical and Practical Considerations

The introduction of a recorder in an interpreted session raises a preliminary ethical issue concerning the confidentiality of the proceeding. Therefore, the interpreter must explain to all parties that the recorder will be used only as an interpreting aid, and that it will be completely erased at the end of the proceeding.

In any informal face-to-face interpretation session, authorization to use the recorder simply becomes a matter of agreement between the parties. The same applies to legal depositions and other formal sessions outside of court where a record of the proceeding is being kept. In such instances, it is customary for one of

the parties, usually the deposing attorney, to make a statement for the record stipulating that there is no objection to the use of the recorder for aiding in the interpretation, and that the recorder will be erased at the end of the session. The interpreter then makes a point of erasing it in front of the parties for everyone to see. Aside from this simple protocol, DVR-assisted CI is ready for use, and is indeed being used in all kinds of face-to-face interpretations outside of court.

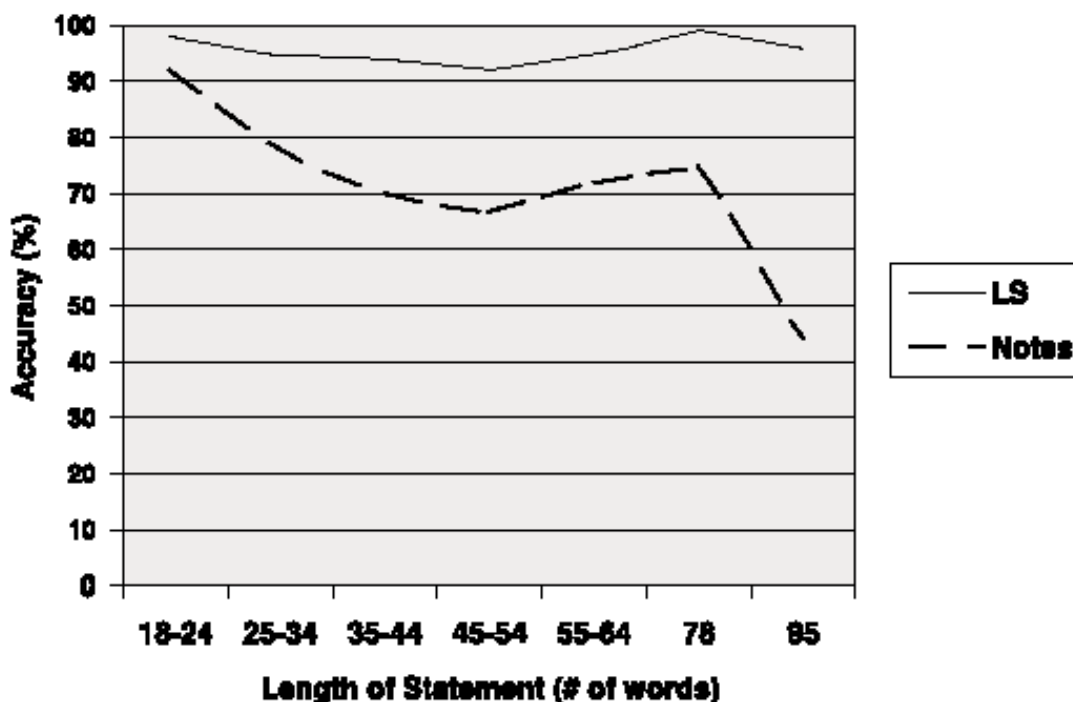
To use the DVR method in court or in administrative hearings, the judge or presiding officer would first have to approve the use of the recorder, provided that there are no objections from the parties in the case. Rather than seeking approval on a case-by-case basis, interpreters interested in using a DVR in court should work with the court administration, through the interpreters' office, the clerk's office, and the chief judge, to secure authorization as a standard procedure throughout the courthouse or jurisdiction. The same protocol for safeguarding confidentiality, described above for legal depositions, would apply. In addition to erasing the recorder at the end of the session, the court may decide as a matter of policy that the recorder should remain in the courthouse at all times, as court property, and that only recorders supplied by the court are to be used.

In the case of telephonic interpretation, there are two considerations. First, the interpreter will obviously not be able to erase the recorder "in front" of the parties. So the parties will have to take the interpreter's word for it and rely on his or her adherence to the interpreter code of ethics regarding confidentiality. Second, it is unlawful in most states

to record a telephone conversation without the parties' knowledge. So, again, the interpreter has an obligation to inform the parties that a recorder will be used to aid in the interpretation and that it will be completely erased at the end of the session, and then confirm in closing that the recorder has been erased. On both these accounts, the interpreter should seek approval from the telephonic interpretation company he or she works for. It would be beneficial if the confidentiality assurance is presented as matter of company policy, instead of the client having to take the interpreter's word for it as an individual. There should also be a company-approved way of informing the clients that "this call may be recorded for quality assurance purposes." Such announcements have become commonplace in many formal transactions conducted over the telephone.

Now that its benefits have been scientifically documented, having the DVR method approved by the courts or telephonic interpreting companies should not be difficult, once administrators are made aware of the immense gains in quality and effectiveness that this revolutionary method provides. Courts will soon realize its positive impact for the administration of justice, while, for telephonic interpreting companies, it will become a matter of having a decisive edge in an increasingly competitive field. It is only a matter of time before this becomes the preferred method of CI, one in which memory is no longer such a challenge. At that point, the old note-taking system will face its irremediable obsolescence, and interpreter training programs and qualification testing, both of which are heavily dependent upon memory development and mnemonics, will

Accuracy Rates for LinguaSonic vs. Note-Taking



Length of Statement Intervals in # of words	18-24	25-34	35-44	45-54	55-64	78	95	Accuracy Rate Overall
LinguaSonic								
Avg. # of Words missed	0.4	1.3	2.3	3.7	3.0	0.5	3.4	
% Accuracy	98	95	94	92	95	99	96	96%
Conventional CI (w/note-taking)								
Avg. # of Words missed	1.8	6.3	8.8	15.9	16.0	19.8	52.3	
% Accuracy	92	78	70	67	72	75	45	71%

have to be revised. The focus for enhancing interpreter accuracy will shift from memory to the finer points of bilingual proficiency: lexical and

stylistic development. Most importantly, this paradigm shift will open the doors for many individuals, both interpreters and clients alike, to the

possibilities of top-quality professional interpretation. ➔

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