With the beginning of 2001, the staff of the Language Laboratories and Archives is taking on several major projects: the transformation of Cobb 210 into a true interactive computer classroom (this was promised as part of the Mellon grant for More Frequently Taught Languages), barcoding of the Labs’ media holdings and equipment (for improved inventory control and ease of check-out), and exploration of putting some of the Labs’ media holdings on line (where copyright is not a problem). All of the projects are designed to enhance the Labs’ facilities and services.

The new year also marks the beginning of the return of Saturday hours for the Social Sciences site of the Labs. SS4 will be open on Saturdays from 1 P.M. to 5 P.M. These hours were added in response to the results of a survey conducted last quarter with the Labs’ patrons. If these hours prove to be well used during Winter Quarter, they will be extended through Spring Quarter.

Finally, we hope that in this new year you will resolve to make a habit of regularly visiting the Labs’ web site: humanities.uchicago.edu/lla. Check the News section and the Calendar to keep up to date with what is happening in the Labs. And, when you have some time, check out all of the other resources on the site. They are designed to assist you with your teaching and research.

The survey of patrons, the barcode and on-line sound projects were motivated, in part, by suggestions and requests we received from faculty. We appreciate your feedback and we hope to receive it in abundance in 2001!

Karen Landahl
Academic Director
LLA Reports on Language and Technology Meetings

Barbara Need

On a regular basis the staff of the LLA attends seminars and conferences to help us keep patrons informed of new developments in language study and research. In this issue we report on meetings that focused on technological issues related to foreign language research and teaching that Barbara Need attended during 2000. Her reports on these meetings appear here in chronological order.

Voice Disorders: A Two-Day Course

On March 31, 2000 and April 1, 2000, I attended "Assessment and Treatment of Voice Disorders in Children and Adults", a Continuing Education Course offered by Northern Speech Services, Inc., and sponsored by Kay Elemetrics. The speakers were Daniel E. Martin, Ph.D., and Jacquelynne P. Corey, M.D., both of the University of Chicago Hospitals, and Daniel R. Boone, Ph.D., of the University of Arizona (Emeritus). The LLA has a variety of equipment from Kay Elemetrics (Computerized Speech Lab™ 4300 and 4300B, DSP Sona Graph™ and printer, VisiPitch™ 6095/6097 and VisiPitch II™, Palatometer™, Aerophone™, and MultiSpeech™), and I attended the seminar as a means of catching up with their latest developments.

On the basis of comments made by the speakers and the audience, it appeared that the majority of the participants were voice therapists. "Voice" in this context specifically refers to the larynx, and the speakers focused on problems that can arise on or near the vocal folds (such as polyps or paralysis), sources for the problems (e.g., overuse of the voice, illness, trauma, etc.), and suggestions for treatment. We saw videotapes of a laryngoscopy and a demonstration of a device made by Kay called the Facilitator™.

The Facilitator™ may have some potential for second language learning. It provides auditory feedback in five modes: speech-voice amplification, looping playback, delayed auditory feedback (DAF), speech noise-masking, and metronomic pacing. The device has a set of headphones which provide the feedback. DAF, in which the feedback can be delayed from 10 to 500 msec, and speech noise-masking, in which the feedback is degraded or eliminated, have been shown to improve fluency in stutterers. Metronomic pacing, in which a click is produced on a regular basis, has shown good results with accent reduction.

As a linguist, I had several linguistically oriented questions during the two-day course (not specifically related to the aims of the presentations). For example, how might the metronomic pacing feature of the Facilitator™ be used with syllable-timed vs. stress-timed vs. mora-timed languages (e.g., Spanish, English and Japanese), and how might its use differ among these? Do voice disorders develop in people who speak languages which have unusual phonation types, such as creaky voice or breathy voice? These types resemble both the symptoms of some speech pathologies, like hoarseness, and the causes of speech disorders, such as speaking too low in one’s vocal range. What is the normal physiology of these speakers? That is, do speakers of languages with creaky voice display abnormalities on their vocal folds similar to those speakers of languages without creaky voice who are experiencing voice disorders?

COMDEX

On 18 April, I attended the Chicago COMDEX trade show. COMDEX takes place twice a year and showcases developments in computing technologies. My visit coincided with President Clinton’s visit to the show; for security reasons, some of the floor was closed off most of the morning. This meant I did not have a chance to check out the Linux displays as much as I would have liked to have done. I also missed the roll-out of the PocketPC, Microsoft’s version of a PDA (Personal Digital Assistant, like the PalmPilot), because that occurred the next day.

As usual, there was a wide variety of displays: some booths were showing off the latest equipment; several booths stocked component parts; vendors of items like...
Technical Aspects of the Hindi and Middle Egyptian Distance Learning Projects

Sandra Schloen

This article is a summary of a presentation that Ms. Schloen gave on November 8, 2000 as part of the LLA Seminar Series. The Hindi and Middle Egyptian projects, described below are funded by a grant from the Mellon Foundation.

This presentation focused on some key technical issues that proved to be particularly challenging in the development of cross-platform, interactive, educational Web sites for the teaching of modern, spoken Hindi, on the one hand, and ancient, written Middle Egyptian on the other. Although the two projects have some similarities, each has had specific issues that have needed to be resolved, resulting in quite different accomplishments to date. The Hindi project was used as an example of "front-end" issues dealing primarily with user-interface design, interaction, animation and integration of various types of media. The Middle Egyptian project was demonstrated with "back-end" issues in mind, particularly the problems of structuring, linking and storing complex texts along with their grammatical analyses.

One of the key issues common to both projects was the need to integrate and present multiple and, in the case of Middle Egyptian hieroglyphs, very complex, custom fonts. This requirement, along with the need for cross-platform compatibility, animation, and multimedia capabilities, led us to choose Macromedia’s Director/Shockwave Studio as our primary develop-

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LLA Researchers Bring CALL to the Learning of Japanese Pronunciation

Yukari Hirata, Karen Landahl, Mike Ziolkowski & Barbara Need
(abstract prepared by Joseph Toth)

Yukari Hirata, former U of C graduate student in Linguistics and now assistant professor of East Asian Languages and Literatures at Colgate University, working under the supervision of Karen L. Landahl (associate professor in Linguistics and academic director of the LLA) and with the assistance of graduate students Mike S. Ziolkowski and Barbara Need (also in Linguistics), has carried out research to make the advantages of computer-assisted language learning (CALL) available to students trying to master spoken Japanese. The results of the research were presented at the fourth Foreign Language Education and Technology (FLEAT) conference, held last year in Kobe, Japan. Here is a summary of the paper prepared by the four co-authors, "Assessing a computer-assisted training program for the acquisition of Japanese pitch: Cooperation among foreign language instructors, linguists, lab directors/managers and technology specialists". It is due to appear in the proceedings of the conference.

1. Introduction
Technology has brought us many opportunities to create materials for foreign language learning, but we cannot always tell if the materials are useful, and what exactly they contribute to language acquisition, if anything. One problem with currently available CALL programs is that we still lack methods for identifying the specific influences of the products, and for finding objective ways of measuring learners’ changing abilities while using a product. These problems are complicated by Human Subjects’ issues: for example, language instructors, who have a practical concern for their students’ educational needs, are reluctant to put those students through lengthy and exhausting experimental sessions.

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ment environment. Director’s "embedded font" feature has proven to be a satisfactory solution for this necessary component of our projects, at least for the present.

The rich toolset built into Director for producing animation allowed us to create an engaging, colorful, animated user interface for the Hindi project, based on a culturally familiar mandala, the Sri Yantra. Its multi-dimensional symbology was fashioned into a subtle, yet simple, menu structure providing an overall scheme for organizing lesson content. Animation is also used to illustrate how characters in the Hindi script are drawn, and students are given the opportunity to interact with the script.

If the Hindi project serves as an example of user-interface design and "front-end" issues, the Middle Egyptian project illustrates a solution for organizing and structuring complex content. A custom XML (eXtensible Markup Language) format was designed for storing and linking the text in all of its representations: hieroglyphic, transliteration, translation and grammatical markup. A carefully designed Web-based, data entry system was created to produce texts in this format. Current work on this project aims to present these specially formatted texts to students in educationally meaningful ways.

The presentation concluded with some general comments regarding challenges due to the distributed nature of client-server, Web-based applications. These included dealing with multiple layers of software, understanding variations in browser functionality, managing remote content and access to this content, and working within system-resource limitations. Other implications of being on the "bleeding edge" included: having to work with the newest, and often buggy, versions of available software; moving ahead of still-developing standards in the relevant fields (for example, SVG – scalable vector graphics – for font representation); and, finally, staying abreast of constantly developing options for the future of these projects.

At the LLA we have made efforts to solve these problems by conducting experiments with novel methodologies that assess the efficacy of computer-assisted training for the acquisition of Japanese pitch and duration. We utilized Kay Elemetrics’ VisiPitch™ and later its CSL-Pitch Program, which enable us to see real-time representations of spoken utterances on a computer screen, and to compare a learner’s speech with that of a model; i.e., these programs exhibit the fundamental frequency contours of each utterance, which correspond to our perception of pitch. However, what is seen on the screen cannot be easily interpreted by non-phoneticians. For example, word boundaries do not correspond to breaks in the fundamental frequency lines, and the length of the line (though representing the duration of the utterance) does not always make clear whether a short or a long vowel is being represented. To address the interpretation problem, we created prosody graphs as supplementary materials throughout training. These graphs show how fundamental frequency contours correspond to our perception of pitch height, words, and rhythmic beats.

We asked ourselves the following questions: Can a program using visual feedback of fundamental frequency contours and prosody graphs be used by non-experts (i.e., on a self-study basis)? Given the difficulties of interpreting the visuals, would it ever be possible for learners on their own to practice fluent sentences in addition to isolated words? Does this program actually enhance the learners’ pronunciation and intelligibility? Is training with the visual feedback program useful for the learners’ listening comprehension as well as speaking abilities? We addressed these questions using the facilities of the LLA, where the director and the manager make special efforts to bring together various professionals and students who work on language.

2. Method
2.1 Subjects
Subjects were eight native speakers of English who were taking the intermediate Japanese course here at the University. Traditionally, the training group participates in a pre-test, the training itself, and a post-test; then the researchers compare the results of these two tests with those of a control group that takes the tests but does not participate in the training. However, in a real educational setting such an experiment would be undesirable, inasmuch as language instructors want to

—Sandra Schloen is the web project manager and programmer for the Casting a Wider Net ... distance learning project, which is funded by a generous grant from the Mellon Foundation.

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A Digital Day in the Language Labs: Managing Digital Decisions

Barbara Need, Kay Yang, Michael Berger & Karen Landahl
(abstract prepared by Barbara Need)

The following article is an abstract of a talk presented by Barbara Need and Kay Yang at the Midwest Association of Learning Laboratories (MWALL) conference in Madison, WI on October 13, 2000. The topic of the fall conference was “Digital Directions”.

Most days in the Language Labs somebody wants to do something digital: digitize sound for research or development, capture digital images, make a web page. A number of issues need to be considered when advising users, including technical details of audio recording and digital capture, editing techniques, copyright, and keeping projects manageable. Three major areas that the LLA has recently been involved in are audio, moving images, and still images and graphics.

Audio
The advantages of digital audio include a clean signal (no tape noise) and no transference loss when making subsequent digital copies. The main disadvantage is cost; a good digital field recorder is at least twice as expensive as a good analog one; and the tapes are three to four times as expensive as audio cassettes (but they can hold more data—the LLA stocks 60-min. and 120-min. DATs (digital audio tapes), and 60-min. analog cassettes, of which we recommend recordists use only one side, or 30 minutes).

One of the reasons people want to make digital recordings is to put them on line, but a major issue is how to go about making the recording so that it is most useful. We always recommend that our users record with a sampling rate of 48 KHz and quantization of 16 bits. This guarantees the most flexible recording, since you can always resample at lower rates. We do not recommend that you record directly to computer. Recording to tape insures that your data are not limited to a particular computer format. Macintosh and Windows computers use incompatible wave-file formats, and recording to DAT will not limit you or future researchers to one computer platform or the other. In addition, the computer file formats may change in the future, rendering your files difficult to access. However, the most flexible recording is not always the most convenient form for web distribution, since the file size can be quite large (1 min. ≈ 10 MB). Many recordings on the web are compressed to reduce the file size, but there is information loss from compression. We recommend that you use compression sparingly.

Other issues related to going digital include copyright, storage space, man-hours and the life of the storage medium. Putting recordings, such as the LLA holdings, on the web is a form of broadcasting, which we do not have rights for, and we would have to track down the copyright holders (a task which might be difficult for our older materials). If we maintain our digital materials on tape, we have to find room for the tapes (and we are running out of room for our analog materials). If we wanted to store the material on computer disk, we would need hundreds of gigabytes of storage space, since we have several thousands of hours of recorded material in analog format. In addition, all of the digitizing is done in real time: one hour of tape takes (at least) one hour of recording. That adds up to many man-hours of recording time! A final question to consider is the longevity of the digital storage medium. Experience has taught us that the shelf life of 1.5-mil mylar tape on open reel is about 20 years. We do not yet know how long CD or DVD-RAM disks will last, nor do we know how long digital audio tapes will last and we don’t know how long particular computer file formats will be readable by developing technologies.

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Moving Images
In the past few years, we have expanded our digital video-editing capabilities with one stand-alone product (Casablanca) and two software programs (iMovie and FinalCut Pro, both from Apple). Special effects transitions between segments were employed in the Labs for the first time with the introduction of the Casablanca unit. However, the Casablanca only allows one project per drive and has a fairly steep learning curve. When iMovie, a product designed for the consumer market, came out, we found this was easier for the students to master; and, with the addition of digital cameras, it was very easy for them to transfer their footage for editing. FinalCut Pro, like Casablanca, has a steeper learning curve, but its primary purpose is not for student assignments, but development projects. With FinalCut Pro, the editor has more control over the video and audio.

Some technical issues with digital video are the incorporation of analog contents—easy enough to do with an analog-digital converter—and compatibility between formats and managing video files. As in the analog video world, there are different standards for DVD, and differences between cameras. Some brands work better than others with the Apple software, and some decks and cameras can’t read tapes made in other units. Another concern, as with digital audio, is file size: an iMovie of only a few minutes can be several gigabytes in size, and even a QuickTime movie can be several megabytes. Compression is the usual solution to achieve smaller file size, but again, at a loss of quality. Other issues to keep in mind when planning digital video are keeping the projects focused (some students have created extremely elaborate presentations requiring enormous amounts of editing) and copyright.

Still Images and Graphics
Finally, people often want to use still images or graphics in digital presentations (or to send the image to a friend by e-mail). If you are not using a digital still camera, you will need to digitize the image; this is done by scanning. Things to consider when digitizing include image resolution and size, and file size and format. If the image will be displayed only on a computer screen, there is no need for resolutions greater than 72 pixels per inch. You can also select only part of the original image to digitize. Both of these factors (i.e., resolution and image size) along with choosing the right format for your image (gif for line art or logos, jpeg for photos) will determine how big the file size is. However, as with digital audio, it is always advisable to save your original image uncompressed and in a large scale—allowing yourself the option of going back to make a better quality version in case you want to print it or create another image with different compression.

As with the other two digital formats, copyright is an issue here, especially with respect to using existing digital images: it is important to keep in mind that images that appear on the web are not necessarily in the public domain (and the web site you found it on may not be the copyright holder). There are, however, some non-digital solutions for using copyrighted images: in an educational setting you may be able to project an image through a document camera or onto an electronic whiteboard without violating the conditions of the copyright. (For more information on document cameras and electronic whiteboards, featured at the LLA Workshop on October 25, please contact Michael Berger at lfrc@uchicago.edu or Barbara Need at language-labs@uchicago.edu)

—Barbara Need is manager of the SS4 site of the Language Laboratories and Archives and also serves as the LLA’s computer specialist and archivist; Kay Yang is manager and multimedia specialist at the LLA; Michael Berger, on-site manager of the LFRC, is also faculty liaison and grants administrator for the LLA; Karen Landahl is the academic director of the LLA, associate professor of linguistics and associate dean for computer and language technologies in the Division of Humanities.

THE NATIVE SPEAKER is the newsletter of the Language Laboratories and Archives. Comments, inquiries and submissions can be directed to the editor, Michael Berger at the LFRC. To receive The Native Speaker, send your name, department, affiliation and address to the LFRC (5811 S. Ellis Avenue, Room 211, Chicago, IL 60637), or e-mail lfrc@uchicago.edu. The Native Speaker is also available to view and print as a PDF (Portable Document File) format on the LLA web site.
http://humanities.uchicago.edu/lla.
Back issues are available upon request.
give their students equal opportunities. Therefore, we
added a training session for the control group after the
two experimental tests had taken place. In this way, we
gave both groups an equal opportunity to experience
visual feedback while allowing us to assign the students
randomly to the two groups.

2.2 Training Procedure
Training materials included pairs and triplets of words
contrasting in pitch or duration, or in both, e.g., áme vs.
amé, tori vs. toori, and ñ-sho vs. ish-sho vs. ish-sho-o.
Out of 10 training sessions, only the first three sessions
dealt with words in isolation; the rest consisted of
phrases or sentences. (These utterances were recorded
by four native speakers of Japanese, two males and two
females.) A handout was made for each of the ten ses-
sions, explaining how to pronounce the utterances with
proper pitch control using prosody graphs (see figure
1). The training procedure was as follows: The subjects
came individually to the Language Labs to practice
with the VisiPitch™. In each of ten training sessions
subjects did the following:

1) read the handout,
2) opened each model audio file, e.g., kiru and kiru,
3) listened to the model tokens and watched their pitch
patterns in real time,
4) produced the words on another empty window,
5) overlaid the model pitch contour onto their own
pitch contour, and
6) repeated the procedure, producing the same words
until their pitch contours matched those of the models.
Each session took about 30 minutes. The training ses-
sions were completed in three and a half weeks.

3. Tests and Results
3.1 Production tests
In order to assess the subjects’ changing abilities, we
conducted production and perception tests before and
after the training. For the production tests, two native
speakers identified all the utterances produced by sub-
jects. A difference between the training and the control
groups was found in the sentence tests; the amount of
improvement from the pre-test to the post-test was 21%
for the training group, and 4.6% for the control group.
That is, the intelligibility of the training group increased
from the pre-test to the post-test, more than that of the
control group. For the word test, improvement made by
the training group was greater than that of the control
group as well, but the difference between the two
groups was less (11.9% vs. 5.8%).

3.2 Perception tests
We found similar results for the perception tests. For
the word tests, there was no difference in the amount of
improvement between the training and the control
groups. However, for the sentence tests, there was a
clear difference between the two groups. This means
that the VisiPitch™ production training had an effect on
the subjects’ perceptual ability, particularly at the sen-
tence level.

4. Conclusion
In summary, the results indicate that the training pro-
gram with visual feedback is effective for the acquisi-
tion of Japanese pitch and duration, and that sentence-
level training is possible with additional written materi-
als. Second, this production training can affect both the
learners’ production and perceptual abilities. Furthermore, all the students successfully participated
in the experiments while attending regular classes. This
demonstrates, too, that the training program is an effec-
tive supplement to a regular Japanese curriculum.

Finally, the methodology used in this project suggests a
new way of conducting systematic but non-disruptive
experiments in educational settings. Furthermore, the
pillows for neck relief or foot massagers were in good supply. One product recently acquired by the LLA for both Windows and Macintosh, the mimio™ (which had been "best of show" a couple of times last year) was displayed in a big booth at one of the two entrances to the floor. I had gone looking for text-to-speech technologies and support, but found little. However, three of the items I looked at will become important technologies at the LLA in the near future: barcoding, the VideoDidact system and shared storage. (I attended a seminar on shared storage on Dec 5, 2000 and will report on it in the spring issue of The Native Speaker.)

Barcodes appear on just about everything today. As explained in the report of the TechTeach Seminar (see below), we would like to use the existing barcodes on University IDs along with barcode labels we create to help us keep track of our equipment and media and to help us get a better sense of their use. The VideoDidact system is a way to control a classroom of computers—just as the Sony console in SS4 controls a cluster of carrels with audio and video units. Because of the high storage demands of digital video and audio editing, hard drive storage is an important issue for the LLA. Hard drive storage at present is limited to the hard drive space on the drives connected and controlled by the computers in the LLA. Shared storage, whereby any authorized computer can directly access any storage device transparently, is more stable than server mirroring (duplicate servers) or server-to-server connections (such as AppleTalk on campus), and there is no performance degradation. We are considering shared storage for larger projects (especially video), since this would make the data equally accessible from any computer (currently, data on one computer may be accessible from another, but it can take quite a lot of time to access the data remotely—think downloads).

Other interesting products included a device that lets one use a computer to make a telephone call (with which I called my office and my parents in North Carolina), and keyboard overlays and templates, which might be useful for people who regularly use other fonts or language kits.

SciTech 2000

In May 2000, I attended SciTech 2000, a morning-long presentation given at Apple by four vendors: National Instruments, SAS, Research Systems and YellowDog Linux. The morning began with multimedia presentations, after which we had a chance to look at the products in action and ask questions specific to our needs. Several of the products being presented were technologies or materials we have long been interested in as part of the LLA's mission of supporting linguistic research.

National Instruments provides software and hardware solutions for measurement. For instance, they could help us design a tool which would capture information about the temperature and humidity in SS4 and store it in a computer database; they also make hardware and software to capture and analyze sound.

SAS produces, among other things, statistics software, which LLA researchers use for linguistic analysis. The two programs they demonstrated have different emphases: JMP is a discovery package and is designed in such a way that the target users need not know anything about statistics. The SAS program proper is designed for a user who knows more about statistics.

Research Systems produces IDL and ENVL, software for "data reduction", "remote sensing" and data visualization. This seemed to be very abstract software, designed to provide geographical analyses.

YellowDog Linux makes a product called YellowDog Linux, which is one of the first versions of Linux designed for the Macintosh. The YellowDog version is designed to function with a server/client pair (in this arrangement, the server has most of the software, and the client accesses the server for that software); however, for stand-alone units, there is BlackDog Linux. During the demos, YellowDog Linux representatives presented their Beowulf cluster, which uses multiple CPUs to speed up certain processing tasks. They formed a fractal, first using one computer, which took about 5 minutes, then using Beowulf with five machines, with which the fractal was formed in just a brief moment. I should note that they named their
machines after characters in *Beowulf*, including Grendel (which I told them was bad karma) and Wigalf (a misspelling for Wiglaf).

**ARSC Meeting**

In early June 2000, I attended the annual meeting of the Association of Recorded Sound Collections (ARSC), which was preceded by an all-day workshop on the basic care and management of recorded collections. The LLA maintains an extensive collection of recorded materials, some of which are quite old (for more information, check our Archives web page), and I wanted to learn the latest information available on their care and storage. Most of the presentations (and most of the people present) were involved with music recordings, and several interesting advances in the playback of cylinder recordings, LPs and 78s (using lasers), and wire recordings were discussed and demonstrated. There was an afternoon devoted to digital recording (mention was made of sampling rates of up to 96 KHz; the fact that DAT players will eat tapes, mostly when first inserted or when ejected; etc.). The Library of Congress reported that to preserve the content of their recorded materials they plan on "migrating" recordings from media to media as technology changes. Several people mentioned a variety of ways to reduce the amount of noise in a signal.

**ScanSource TechTeach on Barcoding**

On 29 August, I attended a series of presentations sponsored by ScanSource, a "value-added" middle-man company, which coordinates the relationships of manufacturers and resellers and does not sell to end users. Their target audience was the resellers; however, several interesting points came out of the presentations and the floor-show that followed. Several tracks of related presentations were offered, and the track that I followed was on barcoding, a technology I had first explored at COMDEX.

I met a vice-president of Emerald Datacom Products, Inc., the company that worked with the Library to supply their barcode systems. He mentioned to me that the Regenstein Library had purchased a barcode printer and suggested that we might be able to print barcodes there, rather than buy our own printer. Representatives of two other local, coding technology companies also gave me their cards (one of whom we are now working with).

I discovered that there are two kinds of barcode readers: one functions as a simple input device (as if you were entering the data from a keyboard), the other stores data and then downloads it. (If you have ever returned a rental car and been given a receipt at the car, you have seen one of the latter units.) The former can be wireless or wired; the latter are generally wireless.

A useful concept for the LLA is the wireless PAN (Personal Area Network), which can function within a radius of 100 feet from the terminal. Such a unit could be used to advantage in the Service Area of the SS4 site. We could set up a FileMaker database and when patrons check in, the attendant would swipe the ID card and the tape to be used. When the patron checks out, the card and tape are swiped by the unit again. A wireless PAN would improve the way in which we gather statistics on the use of the lab, equipment and teaching materials. At least one PAN model will work with a Mac.

I also saw an electronic label called Zebra RFID (Radio Frequency ID). These are like the stickers on some items in Walgreens and other stores. They look like regular labels (barcoded or not), but there is circuitry underneath, which can be programmed. The advantage of this sort of coding label is that there is no line-of-sight required. An antenna could be set up along the front desk of the LFRC and as equipment moves in and out of the room, it would be scanned and the information entered in a database.

**SPSS Statistical Software**

On October 6, 2000, Joanna Lowenstein, Tamra Wysocki and I went to a seminar at Apple's downtown headquarters on SPSS, a statistical software package. After several years of not synchronizing the upgrades of the Macintosh and Windows versions of their software, SPSS unveiled their new version 10 for the Mac (SPSS 10 for Windows has been out for some time), which comes in several varieties: standard, expanded (with extra modules) and student, all of which are supported with web-based training. Improvements include a new help system, new statistics, better import/export functionality. And (since this was a sales pitch!), there is no price difference from the Windows version. (The University of Chicago is exploring a site-license for the Macintosh version.)

One of the reasons for the delay in producing a Macintosh upgrade was the reliance of the Windows

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version on Windows technology, making it difficult to port to the Macintosh platform. However, with the improvement in Apple's performance and at the urging of schools using the Macintosh platform, SPSS decided to make the effort. The help system includes a results coach and statistics coach to help beginning users understand the results and decide what analysis would be most useful. It is not known at this time if there are performance differences between the two versions.

—Barbara Need is manager of the SS4 site of the Language Laboratories and Archives and also serves as the LLA’s computer specialist and archivist.

Continued from Page 7, LLA Researchers Bring CALL... project has brought together professionals in various fields: a director and a manager of a language laboratory; foreign language instructors; phoneticians/linguists; and technology specialists. We have found that cooperation among these groups is extremely valuable. We believe that these professionals must continue working together to bridge the humanity/technology gap in foreign language teaching and learning.

—Joseph Toth is a former manager of the Language Laboratories and Archives and since his retirement in 1998, has worked on a part-time basis at the LLA as an assistant for special projects.