Listening, Looking, and Learning with MacLang

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ABSTRACT: This article describes how the capabilities of the MacLang authoring system allow the teacher to create computer-assisted instruction that fulfills the listening needs of foreign language courses. Examples are given of the use of audio and video interfaces which facilitate listening comprehension.

KEYWORDS: branching, context, interactive audio, interactive video, listening comprehension, MacLang, user control authoring

Fewer and fewer language teachers still resist the use of computers in language learning. Today's problem is no longer to persuade colleagues to include computer materials in their courses, but to influence them to base their utilization of computer-based language learning on pedagogical rather than technical factors, to choose technology for its effectiveness, not the "glitziness" of either hardware or software. Technology should not be merely a source of diversion or entertainment for students, but should really serve to help them learn better. As teachers, we should first decide what we are not doing well, and then see if the computer can remedy the situation.

For example, one area of language learning that we are not addressing well, and in some cases not addressing at all, is listening comprehension, the act of understanding the oral message of a speaker. Although, traditionally, language learning is assumed to involve four skills: writing, reading, speaking, and listening, many teachers concentrate on only the first three, often forgetting that "comprehension and production are indissoluble partners;"[1] that conversation is interactive with speech and represents, at most, one half of communication. Such teachers' courses produce students who may be able to request directions to the hospital but probably will not understand the answer, with the risk of dire consequences!

The order in which the four skills are introduced into a language course varies, depending on the grade level at which the language learning occurs. In elementary schools, foreign language instruction often consists of one or two hours each week during which songs, poems, or simple sentences are taught.[2]

Although listening is involved, it is usually for the purpose of learning sounds in order to be able to repeat them; there is little listening for meaning with the purpose of engaging in conversation.

Most junior high and high schools have, until recently, used a conventional grammar approach to language instruction. Reading and writing are the principal activities, with speaking often restricted to the recitation of written exercises. Listening activities may take place on occasional trips to the language laboratory, but students rarely hear authentic natural speech in the target language. Certainly, the advent of "oral proficiency" has modified the approach to the teaching of speech production, but the place of listening comprehension has not changed significantly.

At the college level, the situation improves. In general, language labs are better equipped and staffed, faculty is more aware of the importance of the lab, materials are more readily available, and students, being older, have a greater ability to use the lab independently. Nonetheless, listening comprehension is still rarely emphasized. Nearly all first year courses include an audio component, but these usually concentrate on pronunciation and grammar.[3] At the intermediate level, audio-tape series are often accompanied by scripts, and videotapes, when used, have subtitles. Changes seem to be occurring, at least in French, since it is now possible to acquire non-subtitled videotapes at reasonable prices. The question is whether or not teachers will implement them in such a way as to promote listening comprehension.

The question of integrating a listening component into language courses is of major importance. In spite of the lack of attention paid to listening comprehension, there are a number of linguists who, observing that listening seems to be the first step in learning one's native language, have developed approaches imitating the process, starting with listening and delaying speaking, reading and writing.[4] Regardless of their validity and effectiveness, such methods are difficult to adapt to our established educational system. In addition, since these methods all eventually include the other skills, they do not eliminate the need for finding a better way of integrating listening into our language courses, not only for teaching listening comprehension, but listening associated with the teaching of writing and speaking as well.

The computer, when interfaced with an audio or video component, can be used efficiently to develop students' listening skills. That listening can be improved by the computer, is supported by Ahmad et al. in a chart that divides language into production and reception, both oral and written and omits only speaking as a computer supported activity.[5] (see Figure 1)

Especially in the case of listening comprehension, the computer actually does something that it is almost impossible for the teacher to do with the class as a whole. Receiving and processing an oral message is a complicated process that

involves syntax, semantics, possession of previous knowledge, interpretation and inferencing. Since each student will do this differently, encountering different problems, verification of comprehension is not effective in class and is too time-consuming to be done on an individual basis. The computer, on the other hand, can identify individually what a student does or does not understand; it can also interact with a student based on the latter's listening skills.

THE COMPUTER'S POTENTIAL FOR LANGUAGE LEARNING WRITING, READING, LISTENING		
	PRODUCTION	RECEPTION
WRITTEN	YES (WRITING)	YES (READING)
SPOKEN	NO (SPEAKING)	YES (LISTENING)

FIGURE 1

While serving to improve listening comprehension, computer controlled audio and video interfaces can promote other aspects of language learning. First, hearing the language, with or without images, makes it seem more natural and provides a context for any aspect of the language that is to be learned. In addition, the audio or information, illustrate the visual component can offer cultural information, illustrate the correspondence between the written and spoken language, or serve as a stimulus for grammar and vocabulary learning.

Although the tape recorder and videodisc player (the two interfaces concerned here) can be used alone, their effectiveness increases when combined with the computer. The advantages of computer-based learning in general—interactivity, student control, individualization, and verification—enhance the value of audio and video materials in the learning experience. In the language lab, listening or viewing can easily become passive activities, but the inherently interactive nature of the computer means that passive reception of computer delivered audio and video material is impossible, since the computer progresses only in response to user action. In addition, the student control of audio and video peripherals when interfaced with a computer offers two advantages over using them alone. First, the intelligent computer allows the student to relocate specific tape segments in order to listen to them more than once, often necessary for complete understanding. The difficulty in

trying to do this with a simple tape recorder means that most students become frustrated and accept running through something just once without attempting to attain better understanding. Secondly, as will be shown below, the computer provides feedback unavailable on a simple tape recorder, VCR, or videodisc player.

The computer, of course, can be used to interface peripherals only with specific software. The remainder of this article will describe the capabilities of MacLang, an authoring system for the creation of courseware for the Macintosh, that allow it to fulfill the listening needs of foreign language courses.[6] A general introduction to MacLang will be followed by a discussion of the audio and then the videodisc interfaces with, for each one, a brief description of the hardware configuration, an explanation of the authoring process, and a rationale for the interface with examples of software.

General Description

MacLang is an authoring system that allows language teachers, even those inexperienced in computer use, to prepare computer-based language learning materials on a Macintosh computer.[7] With MacLang, teachers can create software specifically tailored to their syllabi and to the needs of their students. MacLang offers the possibility of using English and any one of eleven languages (French, German, Greek, Latin, Italian, Portuguese, Romanian, Spanish, Russian—Soviet or phonetic keyboards, Turkish, and Japanese Kana) to produce materials in five different formats. Two of the formats—vocabulary and "jumbles"(sentence word order) are appropriate for specific learning tasks, while the other three—fill-ins, "paragraphs" and multiple choice—can be adapted to a variety of activities. For example, since the "fill-ins" format allows for one blank of up to 57 characters in length, it can be adapted for short-answer questions, as well as for more conventional fill-ins, and can be utilized for a number of purposes—verification of comprehension or acquisition of facts or skills. The "paragraphs" format, which supports up to nineteen blanks (multiple blanks inserted at will or a cloze passage in which every nth word is omitted) is suitable for listening and reading comprehension and other contextualized activities. In the most recent version of MacLang, all five formats can be used within a single MacLang file; this multi-format activity type is extremely useful for videodisc implementation.

Options available in the MacLang Authoring System assure that MacLang courseware provides students with the immediate feedback and individual learning experience that are the main advantages of the computer as a learning aid over the traditional paper-based environment. Each activity, lesson, or exercise can be preceded by an introduction of unlimited length that can contain instructions or background information, or be transformed into a tutorial by the inclusion of a succinct review of a grammar point or a vocabulary topic.

MacLang questions accept more than one response, and can display appropriate and informative messages for all responses unanticipated by the author. Since the program stores all unanticipated responses, authors can continually update the unanticipated response file, eventually creating a completely interactive exercise in which virtually all responses are anticipated. Records of student performance—number of tries, number of correct answers, number of incorrect answers—can be kept, depending on the author's preferences. The program can be used at any level of proficiency in the target language, since the author determines the degree of difficulty of the content.

MacLang is appropriate for listening activities, as will be described below, because it contains audio and videodisc interfaces, which are enhanced by MacLang's static graphics capabilities. Additional features of MacLang include accessibility from Hypercard stacks and conditional branching that allows for the creation of story trees.

Authoring

MacLang is a menu driven system that uses dialog boxes and windows. Authors can enter content directly into an exercise using the mouse to choose items from pulldown menus or to click on buttons to bring up the appropriate question, answer or error message box. It is not necessary to learn any code or symbols; anyone who can click on a mouse can use MacLang!

Materials creation with MacLang is quite simple, even for computer novices. MacLang actually consists of two applications: 1) LangWrite, a scriptwriter; and 2) LangRead, a scriptrunner.

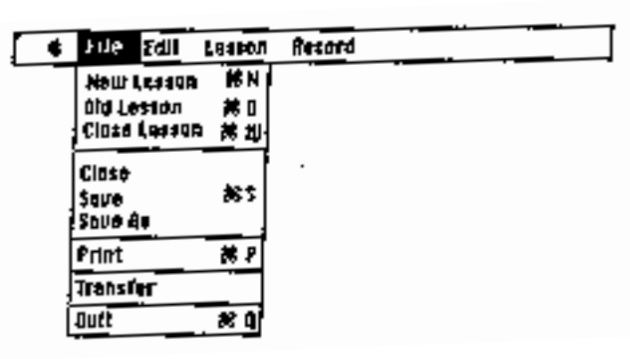

Figure 2

When LangWrite is opened, a menu bar (Figure 2) appears allowing users (after they have clicked on File) to choose to work on a "new lesson"[8] or to modify an "old lesson." if a new lesson is chosen, a dialog box appears (Figure 3-MacLang

3,3, Figure 4-MacLang 4) that allows the author to choose the features mentioned above.

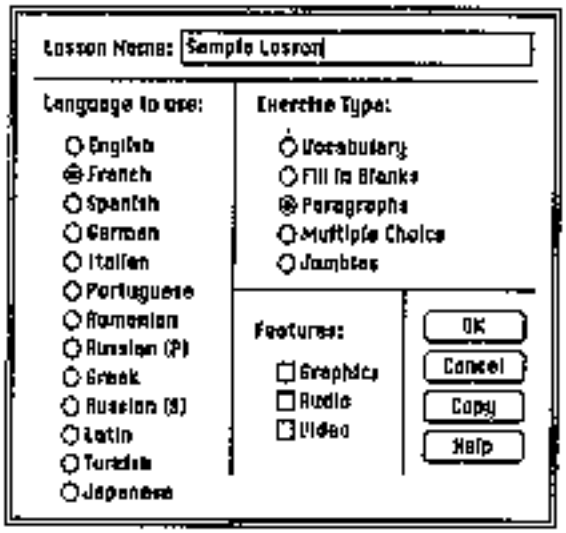

Figure 3: MacLang 3.3

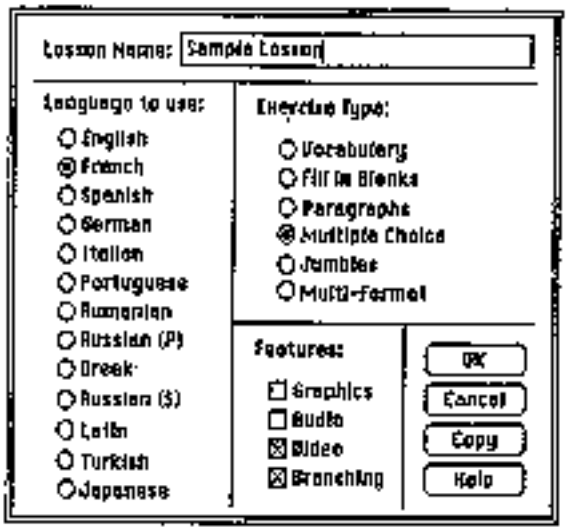

Figure 4: MacLang 4

Decisions regarding audio, video, graphics, branching and lesson type can be made only at the beginning of the lesson creation process and are irreversible; once the lesson format is determined, it cannot be changed. However, the "copy" feature gives authors a second chance, since any existing lesson can be copied into a new lesson that has different features.

When the OK button is clicked in the features dialog box (Figures 3 and 4) the box disappears, replaced by the MacLang Menu. The parts of a MacLang exercise are created using the pulldown menu (Figure 5) that appears when Lesson is clicked. The menu consists of five elements: Introduction, System Error Messages, Standard Error Messages, Questions and Answers, and Options.

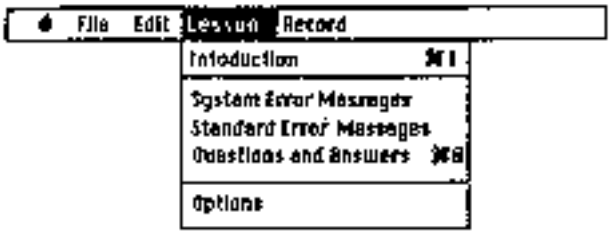

Figure 5

The Options, presented in a dialog box (Figure 6), allow for randomized presentation of items, removal of punctuation, partial highlighting of answers (from the leftmost incorrect character to the end of the answer), and a flexible number of tries. The options can be changed as often as the author wishes.

With the exception of Options, all of the items in the Lesson menu are presented in windows and can be opened simultaneously. Each element of an item— question; correct answers to the question, each with its own explanation; anticipated incorrect answers, each with a corresponding error message—is entered in its own window, in any order, eliminating the need, on the part of the author, to learn code or symbols or to conform to any restrictive procedures. All of the author windows contain a Help button; there is also a User's Manual with complete instructions.[9]

Audio Interface

Hardware/Software Configuration. The system requirements for the MacLang audio interface are a Macintosh 512KE or larger plus a Tandberg tape recorder, models TCCR 530, TAL 812, or TCR 5800. The configuration is composed of three hardware elements (computer, tape recorder, headset) and two software items (tape and diskette). There is also a special cable connecting the computer to the Tandberg. The student turns on the tape recorder and

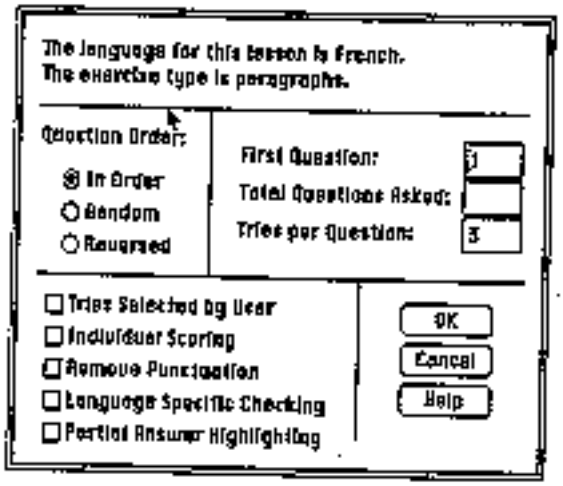

Figure 6

inserts the tapes, turns on the computer and inserts the MacLang diskette. MacLang starts up automatically, and the student has only to click on a menu item as in Figure 7 (or, if a hard disk is being used, first click on an icon and then click on a menu item) and, from that point on, all is automatic. Early articles on peripheral interfaces suggested that having students operate more than one

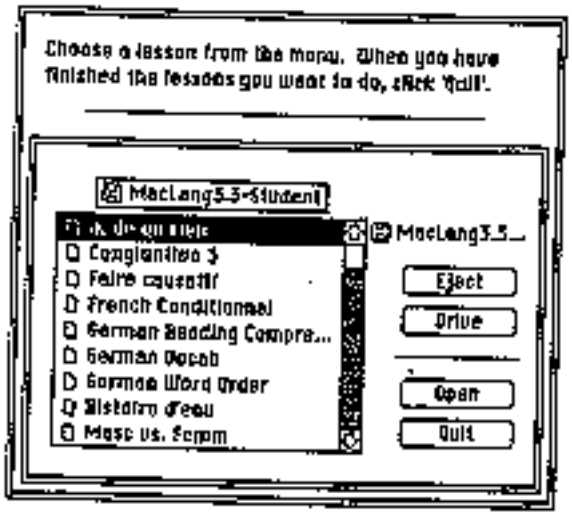

Figure 7

machine would be overwhelming. In fact, this is a problem in the minds of teachers, but experience has shown that students have absolutely no difficulty operating more than one machine.

Audio Authoring. Regardless of the type of exercise being prepared, each MacLang question can have three audio segments associated with it: the initial segment will be played the first time the question is asked; the secondary selection is played every subsequent time except the last; the final selection will be played on the student's last try. To establish the parameters for these three segments the author listens to the appropriate tape on the Tandberg, notes the time coordinates displayed on the tape recorder, and enters them into the MacLang Audio Information dialog box (Figure 8.)

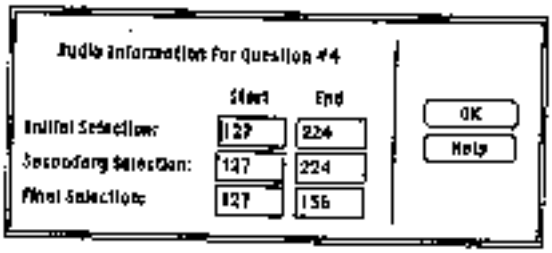

Figure 8

When the coordinates are entered, the author clicks OK and the dialog box disappears. These coordinates can be changed at any time, even after the exercise has been completed and used by students, by repeating the procedure using LangWrite.

The possibility of having three segments for each question or item is advantageous for different types of activities. With listening comprehension, it is possible to base a content question on a one or two minute segment and then shorten the segment to focus on the more relevant material, if the student's answer shows a lack of understanding (i.e. if the answer is incorrect.) In exercises concentrating on grammar, vocabulary, or phonetics, MacLang can use the last try to play the correct answer and, at the same time, to provide a written explanation.

It is important to note that, since the MacLang-Tandberg audio interface is based on time coordinates, it is not necessary to have specially marked tapes; an author can use any tape at his or her disposal as the basis for an exercise or activity. Authors can also record their own material even if they do not have access to a recording studio or a sophisticated audio-visual department in their institution. They can use interviews recorded during their travels or use commercially recorded tapes without re-recording or changing their format in any way. This is important since re-recording or changing commercially available tapes would be a violation of copyright laws. This time-based system allows for great flexibility since tape segmentation can be modified

instantaneously, and more than one segment can be used for the same item or question. It also means that recorded natural, authentic conversations will be heard by students in their natural state.

Rationale and Examples. Given the multiple exercise formats and features of MacLang (determined by the author's choices made in the initial MacLang dialog box—Figures 3 and 4) the author can create a variety of exercises and activities promoting the acquisition of listening competency, from the elementary to the advanced levels. Exercises can be constructed so that students acquire global understanding or so that they learn to identify discreet items, such as phonemes or specific words. Since a demonstration cannot be given in an article, we will present descriptions of possible listening activities, explaining how students would use them and the purposes they would serve. We will start with simple exercises that can be implemented as early as the first week of the first year and proceed to more sophisticated activities that can be used at the advanced level. These exercises are presented in five categories: listening and pronunciation; listening and grammar; listening and vocabulary; acquisition of listening skills; listening for information; and creative listening

Listening and Pronunciation—Minimal Pairs

At the elementary and intermediate levels, students can listen to minimal pairs and type the sound they hear (fill-in format) or type the letter or number that corresponds to the sound as represented on the screen (multiple choice question.) The student could hear the series of words : *tout*, *bout*, *cuve*, *fou*, *fut*, *cou*, *tu*, *but*, and for each one see a following question box asking them to indicate whether they have heard the sound "ou" or "u" (Figure 9).

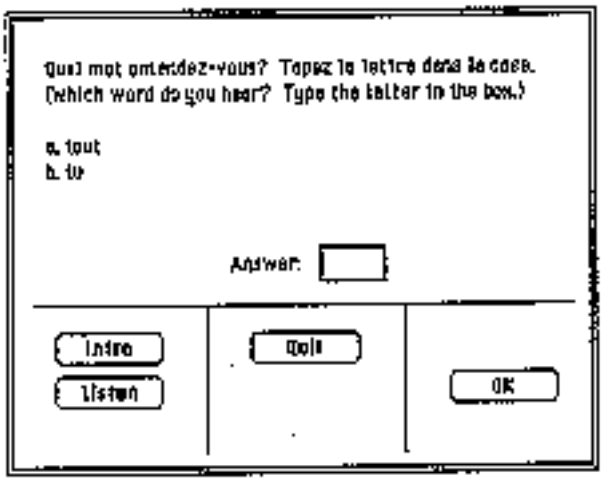

Figure 9

Besides the question, answer choices, and answer box, the question box contains three buttons that merit explanations.[10] All three buttons are based on the MacLang philosophy of providing maximum user-friendliness and allowing maximum student control.[11] Intro calls up the introduction, which can consist of directions for the exercise or include a complete explanation of the material on which the exercise is based (this can be a grammatical explanation or background information relating to the content of the item, whether a listening comprehension or reading comprehension passage, or cultural information.) Since this button appears on all question boxes and students always have access to this information (the introduction also serves as a help function). Students can also always click the Quit button to escape from an activity, another aspect of MacLang that gives student users control over their learning environment.

The most important button with regard to the audio interface is LISTEN which, when clicked, activates the tape recorder so that the student can listen to the appropriate segment, as determined by the author. It is the student who decides when and how often to listen. The complete control exercised by students reduces the tension usually associated with listening experiences, and allows students to concentrate all of their attention on what they are hearing. Regardless of the number of tries the students have for answering a question, they can listen as often as they want within a single try. This is an important difference between the computer-controlled tape recorder and the usual language laboratory tape recorder. Without the computer, students (and most normal people) do not usually listen to items or tape portions a second time because it is too difficult to find a specific point on the tape. However, the computer provides instantaneous (perhaps a few seconds wait if the segment is long) replay of the segment associated with a question.

In fact, as soon as the student clicks on the Listen button, Listen becomes Stop. This means that listening canbe terminated whenever the student wishes, adding another element of student control to the learning environment, in contrast to the usual classroom or lab situation in which the student is being channeled into certain behavior patterns. The Stop button is especially useful with longer segments which the student may want to listen to more than once, but not necessarily to the entire segment.

Returning to the minimal pairs exercise, since there are only two choices, it would be meaningless to give students more than one try. Instead, the branching feature of MacLang 4 can be used to add additional questions to an exercise when students seem to be having difficulty.[12] Whenever students get an answer wrong, they can be given a supplemental question. In this way, referring to the *u/ou* discrimination exercise, the basic exercise could consist of ten items with the weaker students doing more, depending on their performance.

Listening and Grammar

Simple grammar exercises can be presented in such a way that the student cannot answer the question without a correct understanding of the aural stimulus. This transforms the activity into a meaningful listening experience that, by providing needed information, serves an essential function. A good example of this is a first-year Spanish exercise on the distinction between "ser" and "estar."[13] For each item, the question box (see Figure 10) contains the subject of the sentence, followed by an answer blank. Students hear the entire sentence with the exception of the verb, and must choose between "ser" and "estar" based only on what they hear. For example, in one question, the student sees: "Pablo y Teresa _____," hears"{beep} de vacaciones en Paris," and therefore should type "están." In another question, seeing "Ana _____" but hearing "{beep} de Guatemala," the student would have to type "es." In this exercise students work on three aspects of the language at once: grammar—because they are learning the correct usage of"ser" and "estar," writing—because they must type the verb correctly, and listening—because they must identify the clue ("de vacaciones en Paris" or "de Guatemala") to choose the appropriate verb aurally. With this type of exercise, students are associating reception and production in the early stages of their language learning experience, something rarely done in mot language courses. It is obvious that for this type of exercise to be effective, the author must write the questions in such a way that the student cannot answer them without listening to and understanding the question.

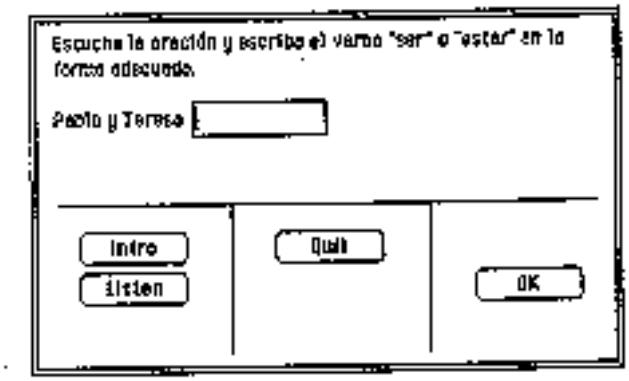

Figure 10

Listening and Vocabulary

A variation of the approach presented above could be used for vocabulary learning. The students could listen to a story that appears on the screen with words omitted. In each case, there could be a possibility of more than one word

that would make sense in the given context (otherwise the students could do the exercise without listening!) For example, in a hypothetical ESL activity, the blank in the sentence: "The _____ way playing in the snow," couldbe replaced by any one of a number of words, such as "boy," "girl," "child," or "dog," but only one word would have been used on the tape. The student's task would be to identify the specific word.

Combining vocabulary and minimal pairs distinction, students could listen to a poem and be asked to fill in the rhyming words. This could be done giving any degree of information. For example, the students could see only the blanks and none of the text of the poem, or they could see the entire poem except for the last word of student each line.

In an activity that would reinforce understanding and writing of vocabulary while contributing to the acquisition of listening skills, as described below, students would listen to definitions in the target languge and then type the appropriate word. The list of words among which they could choose could be given in the introduction. A MacPaint document containing the list could also be accessed by clicking Picture onthe question box (Figure 11). In this way they could refer to it but could not see it while typing their answer. Note that authors can use ResEdit to change the button names (for example from "Picture" to "Glossary") if they wish.

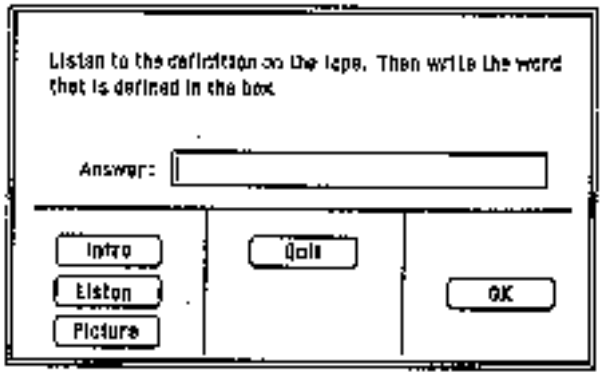

Figure 11

Acquisition of Listening Skills

One of the problems with our students' ability to understand the target language is that they usually do not know how to listen in a foreign language. That is, they believe (and unfortunately, we teach in such a way as to foster this belief) that they should be able to identify each word and attribute a specific meaning to it. While it is true that attention to detail, or the need for accuracy,

has a place in fostering learners' listening fluency[14], and we have given examples of ways to do this, there is a more important aspect to listening comprehension. In fact, when we listen in our native language, we grasp meanings based on certain sound and semantic signals rather than hearing each word; this is what we should be teaching students to do in the target language. Instead of giving them long vocabulary lists, scripts, or subtitles (in the case of video) to use as crutches while listening, we should be presenting them with opportunities to improve their global understanding. We should be providing exercises in what Rivers calls "macro-language use" and using what Elisabeth Lhote calls "l'approche paysagiste" or the total landscape approach.[15] MacLang activities that could promote this skill, even at the elementary levels, are:

a) The students listen to a sentence or a short segment of speech and answer multiple choice questions on the context in which the speech occurred. This sensitizes them to the meaning of intonation.

For example:

"Is the person who is speaking:

a. asking a question?

b. making a statement?

c. giving an order?

"Is the person who is speaking:

a. angry?

b. happy?

c. sad?

b) After listening to a short segment, students could be asked questions to see if they have understood the general idea. This type of activity could take three forms:

1) A fill -in question in which the student does not have to use the same word as was used in the aural stimulus, but can use any word that appropriately describes the situation. For example, if the Segment describes the disasters befalling students on a class trip, the question could be:

"The class went to New York and had a _____ time," where any adjective such as horrible, horrendous, or bad would be accepted as an appropriate answer.

2) A multiple choice question in which the student identifies the Picture that most closely corresponds to the content of the listening segment. The students could hear a story that takes place in bad weather and then see the picture and be asked the question that you see in Figure 12.

3) A multiple choice question in which the student must choose the sentence that best summarizes what he or she has heard.

Listening for Information

At all levels, but especially at the advanced levels, audio materials are used not only for practice, but also for acquisition of content that will be used in follow-up discussions in the classroom or in assignments outside of class. In

these cases, it is necessary for students to understand specific details about what they are listening to. Many authentic sound documents, often too difficult even for advanced students, can become accessible with interactive audio.

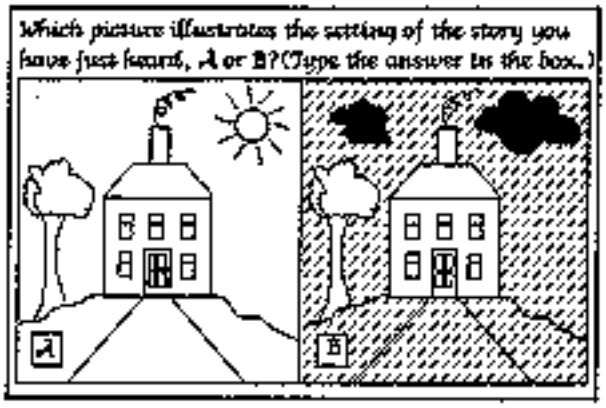

Figure 12

Comprehension of tapes of authentic, natural target Language (TL) speech, such as interviews, songs, poems or radio broadcasts can be verified by asking students to answer general or specific questions about them. The possibility of playing three different segments for each question is especially useful in this case. With the second and third tries, the segment can be shortened to concentrate on the part response. The author can provide partial or complete on-line that contains the information most relevant to the appropriate transcripts or written hints for the students with the MacLang error message and answer explanation features.

Creative Listening

Originally described as computer-assisted language instruction (CALI) or computer-assisted language learning (CALL), most foreign language courseware, until recently, presented students with traditional learning tasks stressing the learning of concepts or skills or the acquisition of data, the aim was, to use Rivers's terms, more "skill-getting" than "skill'using."[16] While skill-getting, that is the understanding of the structure of the language and the internalization of language production rules, is essential to language acquisition, educators have realized that students need more opportunities for skill using, that is, experimentation with using the language in active communication. When applied to software, we can divide the two types of activities into internalization activities and exploratory activities.

Thus far in this article, we have concentrated on internalization type activities that can be created with MacLang 3.2 or 3.3. MacLang 4, because of its conditional branching capabilities, can be used to create activities of an exploratory nature. First, in the framework of a multiple choice format, TL conversations can be simulated by having the student choose a reply in response to what the speaker says on the tape. For example:

Tape: Would you like to go to the movies tonight?

Possible rejoinders as presented on the screen to the student:

a. Yes, I would. What would you like to see?
b. No. I don't feel well.
c. No, I'd rather go out to eat.

Depending on the student's answer, the tape would be advanced to the appropriate reply. If the student chose "a," the tape could reply with a suggestion:

Tape: There's a Woody Allen festival. Do you like him? Rejoinder choices presented on the computer screen:

a. I prefer serious films.
b. I've seen them all and I don't want to see them again.
c. I love him.
d. It depends. Which one do you want to see?

Rather than being right or wrong answers, the rejoinders are continuations of a meaningful conversation. By asking students to report in class on the outcome of their computer conversation, the computer activity can be linked to classroom activity and provide students with real information to share with their classmates.

This same type of tape branching can be used for an oral adventure game. The students could hear the story, rather than seeing it on the screen as they do in most commercially available adventure games. Students would use the fill-in format with a specified list of commands, which are given in the introduction and could always be refered to, and a graphic for each step of the game. With this information, students could base their moves on what they hear on the tape. The listening would acquire a real purpose rather than being an academic exercise.

Videodisc Interface

Hardware/Software Configuration. The videodisc interface is available only with MacLang4. The current version can be used with a Sony 1500 videodisc player, but the final version will offer the choice between the Sony and the Pioneer 4200. The hardware configuration consists of the Macintosh computer[17], the videodisc player, a monitor, and the appropriate cables. The software items are MacLang and a CAV videodiscs look like records but consist of 55,000 individually numbered frames, with image and sound.

Videodisc Authoring. When using LangWrite, authors choose Video on the New Lesson dialog box (Figure 4.) If Video is selected, an additional item on the menu bar, "Video,"(Iocated between Lesson and Record on the menu bar, Figure

5) makes it possible for the author to view any single frame or sequence of frames of the videodisc while creating the lesson in order to determine the parameters of a segment for a given question. Once the parameters (or frame numbers) for the question have been identified, the author clicks on the Video button on the question entry box in LangWrite and enters them into the Video Information dialog box (Figure 13). It is also possible to choose between two sound tracks or to turn the picture off. As in the MacLang audio interface, it is possible to have three segments associated with any one question and to change the parameters at any time.

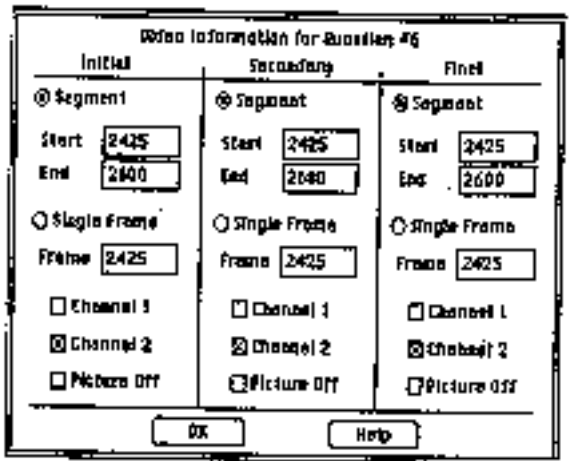

Figure 13

Rationale and Implementation. A videodisc interface has been added to MacLang4 because of the contribution that this medium can make to language learning. While the interfacing of the computer and the tape recorder provides a rich learning experience for the student, as described above, the linking of the computer and the videodisc player vastly expands the linguistic and cultural environment for learning the target language. The videodisc supplies the background information that, according to Halliday, is necessary for an individual to understand a message:

> "From a sociolinguistic standpoint, a text is meaningful not so much because the hearer does *not* know what the speaker is going to say . . . but because he *does* know. He has abundant evidence, both from his knowledge of the general ... properties of the linguistic system and from his sensibility to the particular cultural, situational and verbal context; and this enables him to make informed guesses about the meanings that are coming his way."[18]

In fact, students who have never seen the target language country nor interacted with native speakers do not have the knowledge of the "particular cultural and situational context" mentioned by Halliday, and that is why they have difficulty making "informed guesses" that facilitate comprehension. Videodiscs with authentic, natural speech in authentic TL settings provide essential visual clues—gestures, body movements, and facial expressions—and cultural context—everyday objects, dress, architecture-- to students who have never left their own country, giving them a better understanding of the language.

Interactive videodisc has at least three advantages over simple videotape. First, by definition, interactive videodisc demands active participation on the part of the student, while video watching is often only a passive activity. As one college English professor recently stated: "I don't believe people really *think* when they watch video."[19] As with interactive audio, as described above, when accompanied by appropriate software, students must intervene actively in the implementation of an interactive videodisc, making it impossible for them to doze while supposedly listening or watching. Secondly, because it can be randomly accessed, the computer-interfaced interactive videodisc, unlike a videotape, offers non-linear viewing.

The third advantage of the computer-controlled interactive videodisc is its ability to facilitate students' appreciation and comprehension of authentic, natural speech by providing on-line explanations and translations without resorting to subtitles. MacLang video implementation allows authors to choose among a few solutions to this problem. In MacLang, video activities, questions (or screens) are presented to students successively, with a Look button on each screen so that students can see the video segment associated with the question or screen. As was true with the Listen button in the audio interface, students can click Look as often as they want, and Look becomes Stop as soon as it is clicked so that students can always escape. Authors can make a videodisc segment more accessible to students in four ways: 1) The script of the segment can be put in the explanation that appears automatically when students choose an inappropriate response or that they can choose to see if they get the answer right; 2) Using the conditional branching capabilities, the questions can be written is such a way that students who do not understand the content of the segment they are listening to can proceed to a question that provides more comprehensible segments; 3)A summary of the action, in the target language, can be included in the introduction; 4) Difficult words or expressions can be included in a MacPaint document that can be accessed by the Picture button on any student question box (see the explanation of Listening and Vocabulary, above). Providing the script in these ways is quite different from showing videotapes with subtitles that are always present on the screen blocking the students' perception of the visual content and serving as a crutch.[20] With the MacLang approach, although

students who are having trouble can see the text, they must consciously perform an action to do so. When they are viewing the videodisc on the monitor, they are not distracted by subtitles and can concentrate on the total message transmitted by the words and the image as well.

Another way of facilitating comprehension is to allow students to listen to an alternate sound track of more comprehensible speech, if one exists. Although a second sound track can also be made available on a simple videocassette, using it is much more difficult for the student because the inaccuracy of the counter on a VCR makes it difficult to review specific tape segments. If the author wants students to concentrate on the words without being distracted by the image, the videodisc can be played with the picture turned off.

MacLang 4 can provide a variety of activities for videodiscs, being capable of doing all that was explained in the examples for the audio interface, especially in the categories of acquisition of listening skills, listening for information and creative listening. Simulations of conversations, as explained under "Creative Listening," could be done even more effectively with a videodisc. Using the conditional branching feature, students can create their own stories or adventure games given a videodisc with a number of scenes that do not tell a linear story. The comprehension of films on videodiscs can be verified since MacLang4 can create activities in which students can see short scenes that focus on essential details, can refer back to scenes already viewed, and be directed to special segments for remediation. The multi-format type exercise is particularly well-suited to implementation of videodiscs of feature films; a fill-in question might be appropriate for a scene with minimal dialog, while the multiple-choice format would be more effective in a scene with a lengthy conversation.

Conclusion

Although this article began with the contention that listening and looking, while both integral aspects of communication, are often ignored, misrepresented or used as entertainment or diversions, these essential aspects of the language learning process have been receiving more attention lately. People are even realizing that the conventional laboratory tape recorders and VCR's are not solving the problem, and more and more schools and colleges are turning to computer-interfaced tape recorders and videodisc players, and more and more foreign language videodiscs are also becoming available. As this happens, teachers will want to adapt audio and videodisc materials to their own teaching and learning environments. MacLang, while less powerful than some other authoring systems or Hypercard, fosters the acquisition of listening and looking skills and offers flexibility, diversity, and a simplicity for both author and student-user that can often be an advantage.

Notes

[1] Wilga M. Rivers, "Comprehension and Production in Interactive Lqnguge Teaching," *Modern Language Journal*, 70, i (1986), p. 2.

[2] I am sure that there are exceptions to this pattern and in the past few years these exceptions may have increased. However, I am equally sure that the approach I am describing here is, unfortunately, the dominant one.

[3] One exception is the tape program for *Face à Face* (Steele and Frommer, D.C. Heath, 1985) in which each of the twenty lessons includes a listening comprehension activity based on an authentic natural conversation recorded in France.

[4] John H. Underwood, *Linguistics, Computers and the Language Teacher* (Rowley, Massachusetts: Newbury House, 1984), ch. 3.

[5] Ahmad et al. *Computers, Language Learning and Language Teaching* (New York: Cambridge University Press, 1985), 129-135.

[6] MacLang was developed by Dr. Judith Frommer, Department of Romance Languages and Literatures, Harvard University and programmed by Harvard students: David McKenzie, David Maymudes, and Scott Roy. MacLang development hasbeen supported by the Harvard Committee to Fund Innovative Uses of Computers in Undergraduate Education, the Andrew W. Mellon Doundation, The Consortium for Language Learning and Teaching, Tandberg Educational, Inc., and Apple Computer, Inc.

[7] Versions 3 and 3.2 of MacLang canbe used on a Macintosh 512K or larger. VErsion 3.3 requires a minimum of 512KE (System file 4.2, Finder 6.0).

[8] "lesson" is used to refer to a MacLang produced file, which is not necessarily a traditional teaching lesson. Whether MacLang files are lessons, exercises, or activities depends on the author's intentions and the content.

[9] The MacLang Authoring System, with two diskettes and a User's Manual, is distributed by Kinko's Academic Courseware Exchange.

[10] All MacLang answers are typed in an answer box. A flashing cursor indicates to the students where the answer will appear.

[11] An unpublished study of student response to CALL, done at Harvard during the summer of 1984, found that students place high priority on being able to control their computer experience.

[12] MacLang 4 should be available in the fall of 1989.

[13] A complete program of first-year Spanish MacLang audio exercisesby maria De Arenas and first-year German MacLang audio exercises by Karl-Heinz Finken were created at Harvard with a grant from Tandberg.

[14] Christopher Brumfit, *Communicative Methodology in Language Teaching: The roles offluency and accuracy* (New York: Cambridge University Press), 1984, P. 83.

[15] Wilga M. Rivers, *Teaching French: A Practical Guide*, 2nd edition (Lincolnwood, Illinois: National Textbook Company), 1988, pp 87-88. Elisabeth Lhote, "Comprendre en français: une approche paysagiste de l'écoute dans une langue étrangère," unpublished paper presented at the Colloque de Beijing: Le français et le développement, March, 1989, Beijing, China.

[16] *Ibid*, p. 4.

[17] MacLang 4 will function with the same system requirements as MacLang 3.3: Macintosh 512KE or larger; System file 4.2 or above; Finder 6.0 or above.

[18] M.S.K. Halliday, *Language as Social Semiotic* (Baltimore: University Park Press, 1978), p. 61.

[19] Richard Marius, quoted in an interview in the *Harvard Gazette*, March 3, 1989, p. 5.

[20] Françoise Massadier-Kenny, "La Vidéo: Mode d'emploi," *AATF National Bulletin*, 14, No. 1 (1988), 10-12.

Author's Biodata

Judith Frommer, developer of MacLang, has also produced audio-visual materials in French. Her publications include textbooks (*Face à Face*, *La France et la francophonie*) and articles on language teaching and computer-assisted instruction.

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