

Instructional Basis of *Libra*

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Introduction

Over the past fifteen years foreign language listening comprehension has become an increasingly important component in language instruction, especially in the beginning stages of language acquisition. Even a cursory review of the literature on foreign language education shows widespread discussion of the importance of listening comprehension proficiency as an early objective in a variety of language curricula.¹ For example, advocates of the comprehension approach to language acquisition posit that listening comprehension is the primary mechanism by which learners acquire competency in the foreign language. Comprehensible input, both oral and written, are basic constructs within Krashen's Monitor Model. Comprehensible input and the $i + 1$ net have formed the basis of numerous studies on the role of listening comprehension. Proficiency oriented teaching, originally focused on the assessment of speaking proficiency, now includes a listening comprehension proficiency scale. Other more recently formulated approaches to language teaching depend extensively on understanding and reacting to authentic texts as the basis for classroom instruction.²

Interactive videodisc (IAV) programs offer significant advantages over more traditional audio programs towards the goal of helping students to develop listening comprehension proficiency. As more and more institutions acquire computer hardware and software, it can be expected that IAV programs will play an even more substantial role in foreign language instruction in the future.³ IAV programs provide highly individualized instructional programs in which the computer functions as a patient tutor and guide under students' immediate control. The computer permits instantaneous access to precisely defined video sequences to focus students' attention on specific linguistic expressions and salient contextual

features. The inclusion of questions and comprehension checks in IAV software programs, supported by appropriate feedback, prompts, and other pedagogical features, assures students' consistent interactivity with the video material. The use of on line help devices such as scripts, dictionaries, grammatical explanations, cultural notes, graphic displays, and digitized audio files adds considerably to the quality of the learning environment for students. For these reasons, and others which will be presented below, well designed IAV programs represent one of the most effective ways to facilitate students' development of listening comprehension proficiency.

Research Base

Current views of foreign language listening comprehension have evolved considerably from earlier conceptions in which students were assumed to be passive recipients of linguistic messages or at best decoders of surface level syntactic structures. Advances made by discourse processing theory in native language comprehension and by schema theory in second language comprehension have added new perspectives in which to view listening comprehension processes. Far from being a passive or low level decoding skill, listening comprehension involves the active use of a flexible set of cognitive processing strategies which enable listeners to construct a personally meaningful mental representation of their understanding of a linguistic text.

Anderson 1990 provides a general cognitive framework of listening comprehension processes. This framework includes three interrelated levels of processing strategies: low level perception-segmentation strategies, intermediate level parsing strategies, and high level utilization strategies.⁴ Perception-segmentation strategies are the processing strategies necessary to enable listeners to segment the speech signal into words and other morpho-syntactic units.⁵ To help students to acquire these skills, foreign language teachers have become accustomed to doing classroom exercises which require students to attend to individual words or expressions in phrases or to identify grammatical markers, such as plural noun markers or verbal tense markers, in isolated sentences. Virtually all text book audio programs include discrete-point aural discrimination tasks which test students' ability to identify specific surface structure forms.

Parsing strategies involve assigning syntactic roles to sentence constituents such as subject, verb, and object. This process operates on sentence structures above the level of individual words and leads to semantic representations in

which the functional roles of sentence constituents are clearly specified. While most foreign language students do not normally experience persistent problems in developing perception-segmentation strategies, some may have considerable difficulty reaching this intermediate level of sentence parsing because they tend to remain focused on individual words.⁶ If students are to develop effective listening comprehension strategies and to reach higher levels of text processing, they will of course need to be able to progress from identifying individual words in concrete phrases to processing sentences in terms of their constituent structure.⁷

Utilization strategies involve relating information that comprehenders derive from linguistic texts to knowledge they have previously acquired and stored in long-term memory. It is at this level of text processing that discourse processing theory and schema theory have made their greatest contributions to understanding listening comprehension processes.

The fundamental principle of discourse processing theory posits that comprehenders actively construct a mental representation of their understanding of a linguistic text. The construction of this mental representation depends not only on information extracted from the linguistic text but also on prior knowledge of the situation described in the text and other general knowledge.⁸ Comprehenders initially encode information extracted from the linguistic text in the form of the semantic representations described above, commonly called micro-propositions in discourse processing theory. As they process successive sentences in the text, they begin to conjoin points of information contained of individual micro-propositions into more inclusive macro-propositions. They continue this process by progressively integrating information from these macro-propositions into yet more inclusive macro-propositions until they arrive ultimately at a representation of the overall theme or gist of the complete text. For example, suppose a text contains an episode describing someone's taking a trip by plane.⁹ The description in the text may specify numerous details about the trip such as driving to the airport, finding a parking place, parking the car, walking to the terminal, checking luggage in, getting a boarding pass, waiting in the gate area, boarding the plane, etc. As comprehenders process the text, they integrate individual micro-propositions (e.g., driving to the airport, finding a parking place, parking the car) into a more general macro-proposition (e.g., getting to the airport). During subsequent textual processing, this macro-proposition is integrated with other macro-propositions resulting in a single, much more abstract macro-propo-

sition representing this episode of the individual's airplane trip.

Prior to arriving at a single representation of the meaning of a whole text, comprehenders gradually build their understanding of the text's meaning by relating macro-propositions which correspond to their perceptions of the episodes of the text to each other in some meaningful pattern. Their recognition of the causal relationships or other logical connections among these macro-propositions is essential for the construction of a coherent mental representation, and the conceptual framework that comprehenders develop as they proceed through the text forms the basis of their view of its internal cohesiveness. Thus the reader of the story containing the description of the airplane trip above will relate that episode to other episodes in the story to form an overview of the story's plot and thematic structure.

Different kinds of texts will of course exhibit different configurations of narrative structures. For example, descriptions normally portray the object or person being described as the primary narrative focus of the text and then list several characteristic features of that object or person. However advertisements for commercial products usually show cause and effect relationships (albeit sometimes specious ones) between the use of the product and some desired result.¹⁰ Although it may be difficult to predict the precise narrative structure of text genres, it remains clear that comprehenders' ability to perceive logical relationships among the text's components underlies higher level text processing.

As students' tendency to retain their focus on concrete words and phrases hampers their ability to use effective parsing strategies, so does it interfere with their ability to proceed to the next higher level of text processing to relate textual components to each other. Students who are not able to progress to this level of text processing generally have a disorganized or fragmented view of the text's meaning. It is in fact at this level that foreign language students' failures to understand a text are frequently made manifest. Their efforts are often characterized by an ability to understand isolated words and phrases but an inability to fit these pieces of information together in a rational manner. If foreign language students are to develop a meaningful and coherent mental model of the text's meaning as a whole, many of them will need explicit guidance to fit textual macro-structures together in a logical pattern. In simpler or straightforward narratives it is probably sufficient to remind students to pay attention to the plot line of the story. In more complex narrative structures it may

be necessary to call students' attention to specific segments in the story and to point out their logical relationship to the overall structure of the text.

As comprehenders process information from the text, the construction of their mental representation of its meaning is an on-going, dynamic process. They evaluate the importance of new textual information on the basis of its relevance to information already processed and stored in their mental representation. If the new information is judged to be useful to the development of their understanding of the text, they will integrate that information with information already included in their mental model and update it accordingly. New information which is not judged to be sufficiently important is not normally processed into the mental representation. It is for this reason that unimportant textual details are not recoded for storage in long-term memory and therefore forgotten. In addition as comprehenders' understanding of the text evolves, less important previously processed information may lose its value as primary information in the mental representation and be subsumed under more general memory structures or perhaps eventually lost from memory altogether.¹¹ What comprehenders generally retain in long-term memory is a representation of their understanding of the general message of a text supported by salient details which reinforce that message.

The development of comprehenders' understanding of a text entails not only processing information from lower levels to build mental structures at higher levels but also using information from higher levels to facilitate their interpretation of information at lower levels. For example, comprehenders routinely identify words at the perception-segmentation level in order to parse sentences at the next higher level of text processing. Conversely they may also use their knowledge of the syntactic structure of a sentence at the parsing level to identify individual words at the lower level. Of particular interest here is comprehenders' ability to use higher order knowledge to assess the relevance of new information they encounter in a text. Information already stored in their mental model and other general knowledge lead comprehenders to expect certain kinds of events in specific contexts. These expectations allow them then to anticipate events in the situation described in the text and facilitate their processing of new information consistent with these expectations. The interplay between using strategies from lower levels to support processing at higher levels and using knowledge from higher levels to facilitate processing at lower levels forms

the cornerstone of what is commonly called macro-/micro-level processing or top-down/bottom-up processing. Several studies have clearly shown that such bidirectional processing plays a critically important role in the development of understanding of a linguistic text.

Foreign language schema theorists emphasize the use of previously acquired knowledge in top-down information processing. Previously acquired knowledge is normally defined to include knowledge of common communicative or social situations stored in memory as scripts or schemata, other general knowledge of the world, and perhaps knowledge of the narrative structure of specific text genres.¹² Comprehenders' prior knowledge is said to be "instantiated" during the initial stages of text processing, that is, information mentioned early in the text is thought to activate their knowledge relevant to the situation in question. Once activated, comprehenders then have access to this knowledge to help them to process information from the text and to construct a rich mental representation of the text's meaning replete with their own inferences about it.

Although the top-down approach to text comprehension has attracted considerable attention, a word of caution about relying too much on its use in instructional settings is warranted. The exclusive use of top-down processing in listening comprehension tasks may well lead to substantial errors in students' understanding of a text. Students who adhere too strictly to top-down processing run the risk of disregarding text-based information and imposing their own views too liberally on the text. Their resulting mental representation of the text's meaning will likely be highly idiosyncratic and contain distorted impressions of the text along with numerous unfounded inferences about its meaning. The more balanced bidirectional approach advocated here prescribes that students should use top-down and bottom-up processing strategies. Students should be encouraged to use both previously acquired knowledge and information derived from the text to develop an accurate view of its meaning. While most native speakers automatically employ appropriate top-down and bottom-up strategies, foreign language students, especially those whose language proficiency is insufficient for the level of linguistic difficulty of a text, tend to adopt one set of strategies over the other and to use those strategies too rigidly in comprehension tasks.¹³ Successful foreign language comprehenders must be able to make use of both sets of processing strategies, and most foreign language students need explicit guidance to use them effectively.

To activate students' pertinent prior knowledge, schema

theorists recommend the use of advance organizers, i.e., instructional techniques which prepare students for upcoming listening tasks. They have proposed various kinds and combinations of advance organizers including pictures or other descriptions of the communicative situation depicted in the text, preteaching selected vocabulary items, or previewing the text's narrative structure.¹⁴ Of these techniques, the use of pictures appears to offer an effective way to evoke students' background knowledge about the topic of communication. In addition arranging pictures in spatial relationships which reflect the narrative structure of the text not serves to only activate students' background knowledge but also to prepare them to process the text in terms of its own internal organization.¹⁵ Such schematic displays of the text's components identifies the text's major episodes for students and suggests the logical connections that hold among them. They enable students to follow the thread of discourse in the text and facilitate macro-level processing by encouraging students to view the text's components in relation to each other.¹⁶

Research in native language discourse processing theory and foreign language schema theory holds numerous implications for the design of IAV programs. Several general principles emerge from the discussion here and form a relatively clear set of instructional principles. IAV materials developers would be well advised to take these principles into account in the preparation of listening comprehension materials.

1. Comprehenders actively construct a mental representation of their understanding of a linguistic text.

2. The construction of comprehenders' mental representations involves the use of previously acquired knowledge and information derived from the linguistic text, including visual images in video texts.

3. Comprehenders derive information from linguistic texts by means of a set of processing strategies which include perceptual-segmentation strategies, sentence parsing strategies, and higher order utilization strategies.

- a. Comprehenders' identification of functional relationships among sentence constituents is necessary for building individual micro-propositions.

- b. Comprehenders' integration of individual micro-propositions into more inclusive macro-propositions is essential for higher level text processing.

- c. Comprehenders' perception of logical relationships among a text's components underlies the construction of coherent mental representations.

4. Comprehenders use textual information to update their mental representation and information in their mental representation to interpret new textual information.

5. Effective comprehenders make flexible use of bidirectional processing strategies as they develop an understanding of a linguistic text.

6. Advance organizers play a critical role in instantiating students' relevant background knowledge.

a. The use of visual cues in schematic displays which reflect the logical structure of a linguistic text facilitates students' use of higher level comprehension strategies.

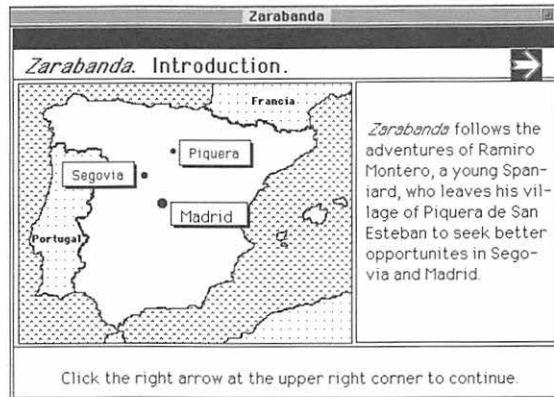
Instructional Design Issues

If one of the goals of interactive video program development is to create lessons which help students' to develop foreign language listening proficiency, then lessons in which the instructional design reflects the principles of discourse processing theory and schema theory will allow them to make substantial progress towards this goal. *Libra* enables faculty-authors to create lessons which closely model the listening comprehension strategies listed above and to guide students in their appropriate use. It contains all the tools necessary to develop effective instructional designs and to direct students to process linguistic texts in specific, user-definable ways. The examples below, created by means of *Libra's* tools, illustrate some of the ways in which the authoring system can be used to create pedagogically sound IAV programs.

Advance Organizers

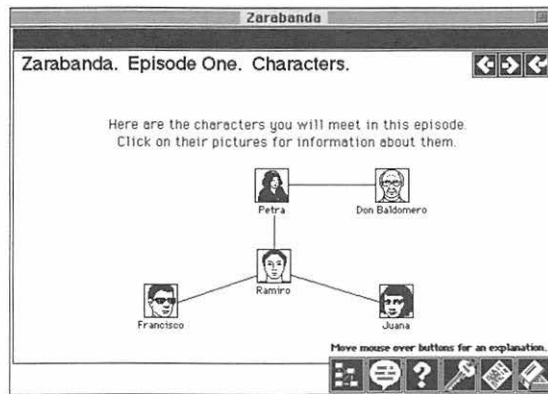
Advance organizers instantiate students' relevant background knowledge which in turn facilitates their construction of a meaningful mental representation of the text's meaning. *Libra* contains a number of authoring devices to create a different kinds of advance organizers. For example, *Libra's* text tools allow lesson authors to enter information in displays to introduce the story to students. The example below, the initial display in a lesson on the Spanish program, *Zarabanda: The Adventures of Ramiro*, is designed to give students a general introduction to the video series.

Figure 1
Introductory Display
for Zarabanda



Libra's icon button tools can be used to make iconic representations of characters and to present their interrelationships. The display below shows icon buttons representing the main characters of the first episode of *Zarabanda*.

Figure 2a
Character Display for
Zarabanda



The configuration of icon buttons surrounding the one representing Ramiro, the main character in the story, and the lines connecting the icon buttons to each other are designed to reveal the characters' relationship to the protagonist. The program instructs students to click the icon buttons to obtain information about the characters. Each icon button is linked to a small display which describes the character in more detail and allows students to see a picture of the character in the context of the story.

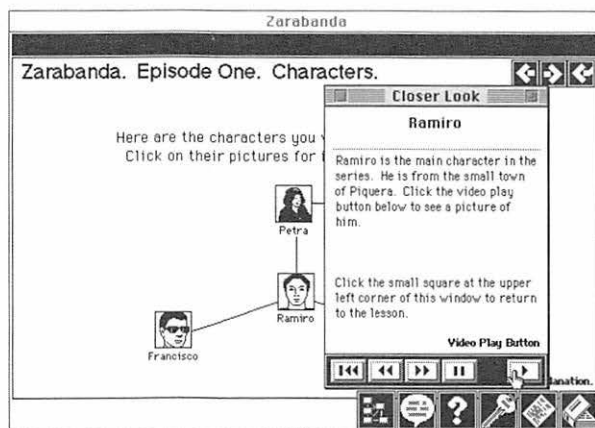


Figure 2b
Character Display for
Zarabanda

Presenting information about the setting of the story also helps to prepare students to view the video program. The series of displays below, taken from a program developed for the French program, *La Marée et ses secrets* 'The Tide and its Secrets,' describes the geographical location of the story.

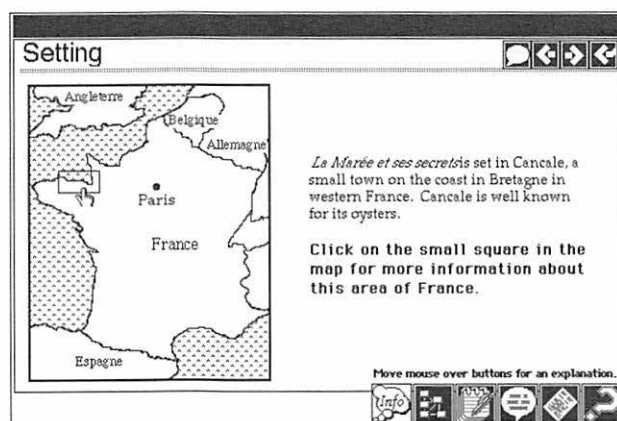


Figure 3a
Setting Display for
La Marée et ses secrets

Figure 3b
Setting Display for
La Marée et ses secrets

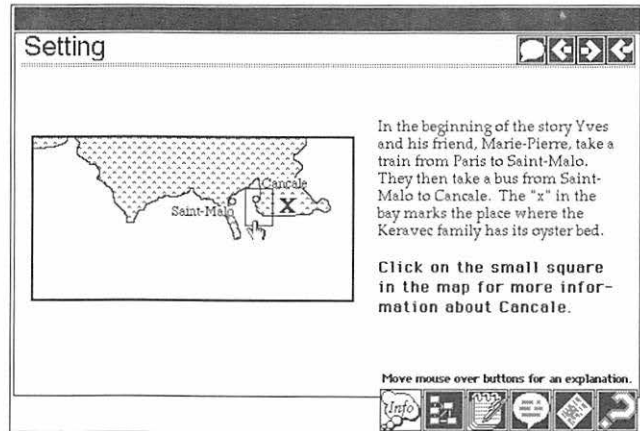
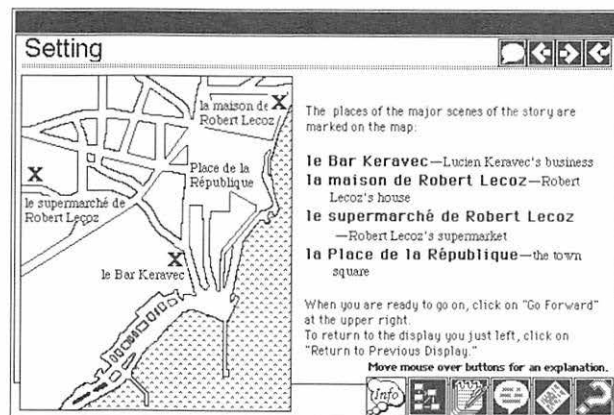


Figure 3c
Setting Display for *La Marée et ses secrets*



These introductory displays familiarize students with the setting of the story and parallel the opening scenes of the first episode of the story in which two people travel from Paris to the small town of Cancale on the Brittany coast. They show an initial large scale perspective of the seaside location of Cancale and progressively narrow students' focus to the actual locations in the town where the action of the story takes place.

Schematic displays of pictorial cues which reveal the narrative structure of a text facilitate students' use of higher level cognitive strategies. Such displays help students to relate the text's components to each other to form a coherent overview of the story. *Libra's* icon button tools can be used to create icon buttons representing the events in a text and to arrange

them in patterns reflecting the text's narrative structure. The display below, taken from the first lesson on *La Marée et ses secrets*, shows a detailed view of a relatively simple plot outline.

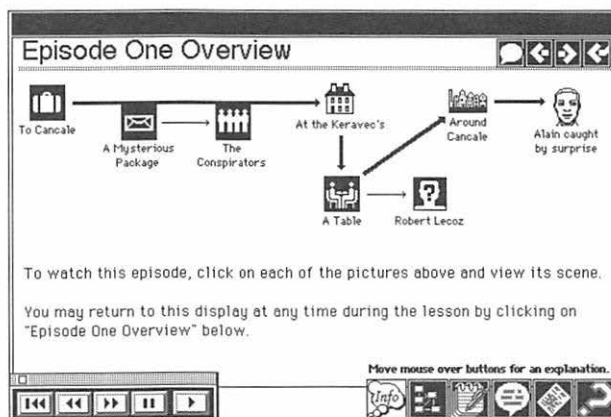
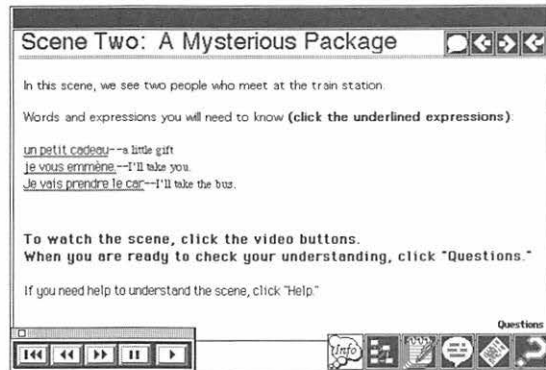


Figure 4
Text Map for *La Marée et ses secrets*

This display shows the five major scenes which carry the primary action of the story and three minor scenes which function as narrative asides. Students may choose to view the entire episode by clicking the video buttons at the bottom left corner of the display or individual scenes by clicking the icon buttons representing those scenes. *Libra's* tools enable faculty-authors to create text maps which portray linear plot progressions, causal chains linking one event to another, hierarchical arrangements for descriptions of objects or people, and other kinds of narrative structures.

Linguistic advance organizers can be presented to underscore key information in the story that students need to know but may not be able to separate from less important details or to prepare students to handle other expressions that may be hard to understand. *Libra's* tools can be used to create hyperactive text displays linked to a variety of explanatory devices such as videodisc events or digitized audio files. The display below contains hyperactive text linked to the videodisc of *La Marée et ses secrets*. Students may click the underlined expressions to hear them as they are spoken in the video scene and replay them as many times as necessary. Previewing the expressions in this manner helps students to understand them when they hear them in the video scene.

Figure 5
Linguistic Advance
Organizer Display for *La
Marée et ses secrets*



Macro-/Micro Level Comprehension

Effective comprehenders use flexible comprehension strategies at several levels of text processing to develop an understanding of a text, and foreign language students need explicit guidance in the use of these strategies. The instructional design of IAV lessons should direct students to attend both to developing their general understanding of the text and to processing specific information from the text.

Libra provides authoring tools to create five different kinds of comprehension checks to guide students in the use of macro- and micro-level comprehension strategies. It contains templates for multiple-choice questions, checklist questions, binary checklist questions, icon sorting questions, and open-response questions. All of the question formats lend themselves equally well to verifying students' understanding of both general and specific information. For example, the multiple-choice question format can be used to confirm students' comprehension of the primary message of a video scene and also the textual details which support that message. The two sample questions below illustrate the macro- and micro-level functions of the multiple choice question format.

Figure 6a
Macro-Level Multiple
Choice Question for
Zarabanda

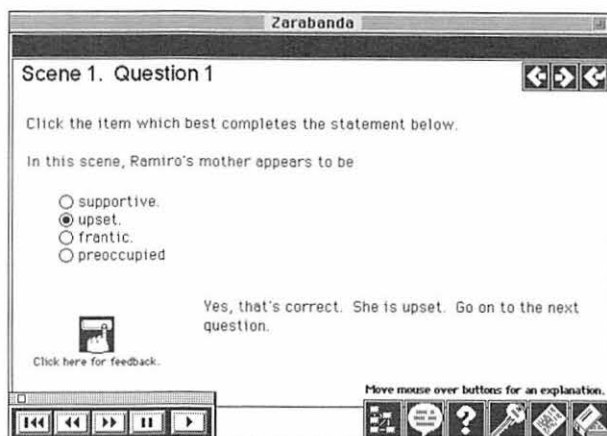
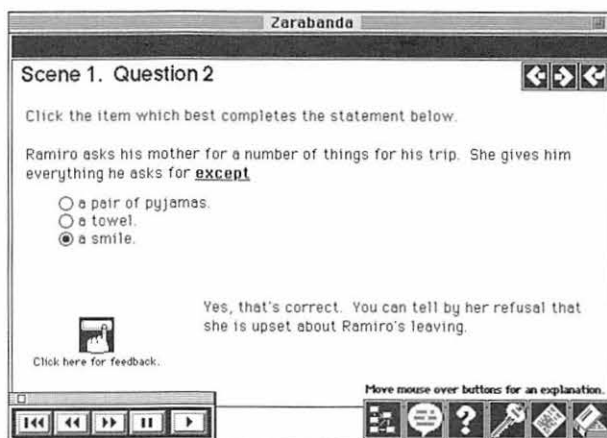


Figure 6b
Micro-Level Multiple
Choice Question for
Zarabanda



These questions are taken from a scene in *Zarabanda* in which Ramiro makes plans to leave his small village for the big city. As Ramiro prepares to leave, his mother indirectly expresses her displeasure at his imminent departure by means of gestures and facial expressions. The first question above, the macro-level question on this scene, focuses students' attention on the mother's reaction to her son's plans. After students correctly answer this question that Ramiro's mother is upset, the program presents the second question, a micro-level question, on the important detail of this scene. This question calls students' attention to the specific information which carries the primary message of the scene. As Ramiro asks his

mother for items he needs for his trip, she gives him everything he requests except a smile he asks for in an effort to cheer her up.

The checklist question format can be used for the purpose of verifying macro- and micro-level information in situations in which more than one piece of information is required. For example, the question below, taken from the German detective story, *Die Dame aus Amsterdam* 'The Woman from Amsterdam,' guides students to observe the secretive actions of a character in a hotel lobby scene.

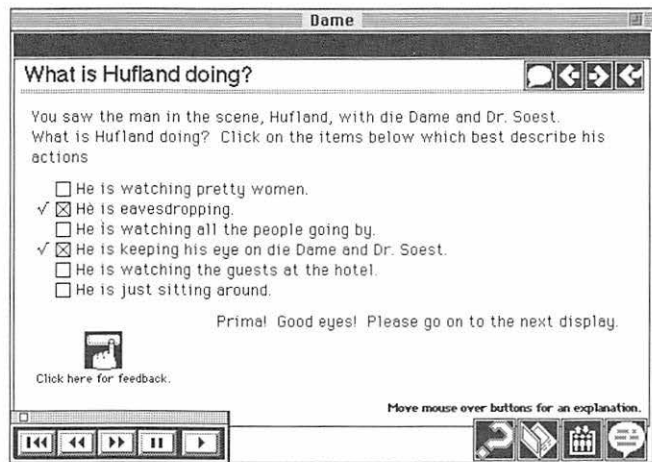
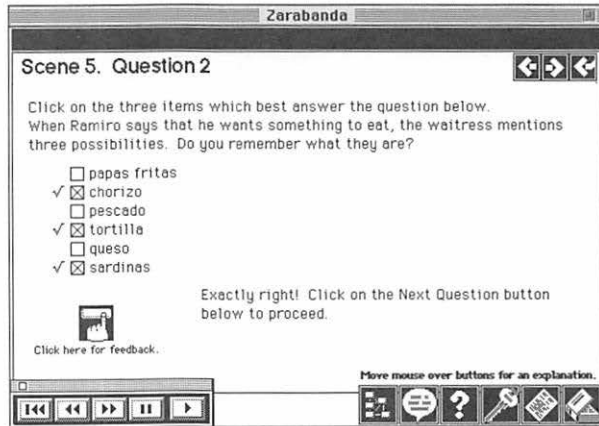


Figure 7
Macro-Level Checklist
Question for *Die Dame
aus Amsterdam*

This question directs students to note the visual extralinguistic information in the scene which discloses the role of the character in the story. Understanding the character's role is essential to support students' development of their understanding of the story line.

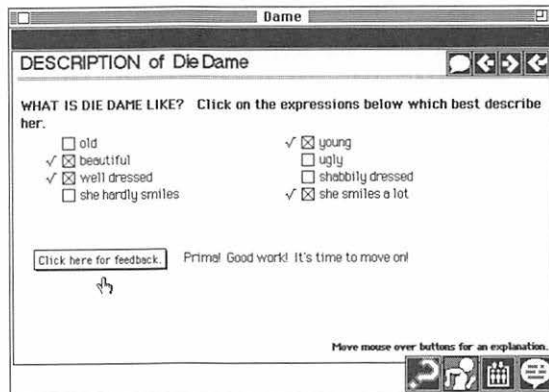
The checklist question format can also be used to bring students' attention to bear on specific information in video scenes. The question below asks students to identify the choices a waitress offers to Ramiro in a restaurant scene in *Zarabanda*.

Figure 8
Macro-Level Binary
Checklist Question for
Zarabanda



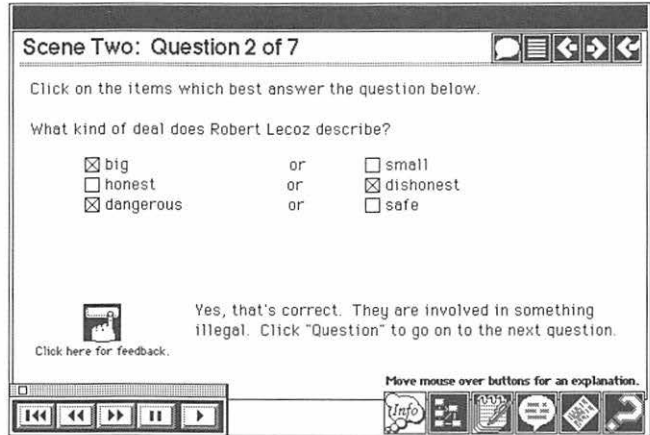
The binary checklist question solicits students' reactions to characters or situations which are best described in terms of opposing pairs of features. For example, the question below instructs students to describe the physical appearance of the mystery woman in *Die Dame aus Amsterdam* in order to support inferences about the woman herself and the way she interacts with other characters.

Figure 9
Macro-Level Binary
Checklist Question for
*Die Dame aus
Amsterdam*



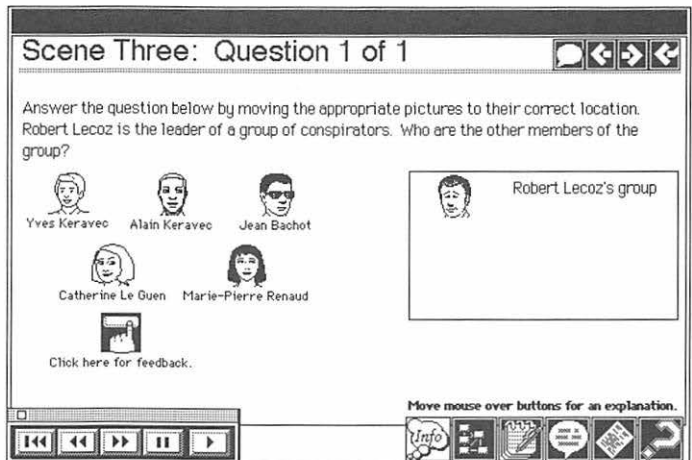
The binary checklist question format also applies to questioning techniques designed to explore micro-level details. In a scene in *La Marée et ses secrets*, an initial macro-level question first verified that students understood that an illicit deal was made between two men. Then that question was followed by the micro-level question below asking students to characterize the nature of the deal.

Figure 10
Micro-Level Binary
Checklist Question for *La
Marée et ses secrets*



Icon sorting questions require students to move icon buttons representing characters, scenes, or events to user-defined locations on the screen. This kind of questioning device is useful for placing characters or events in specific locations in the story, identifying group relationships among characters, or specifying the correct sequence of scenes in a story. The question below requests students to identify the characters who belong to the group of conspirators in *La Marée et ses secrets*.

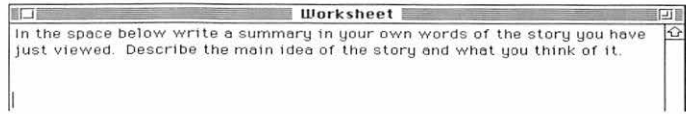
Figure 11
Macro-Level Icon Sort-
ing Question for *La Marée
et ses secrets*



The open response question format allows students to respond to questions in their own words. As such, it is useful

for soliciting students' reactions to individual events in the story or for having them write more complete summaries. The sample question below instructs students to write a summary of a story they have viewed.

Figure 12
Open Response Question for *La Marée et ses secrets*



Sequences of the various question types described here can be combined in different ways to achieve specific instructional objectives. The set of questions below, taken from a scene in the German detective story, *Die Dame aus Amsterdam*, leads students through a series of comprehension checks progressing from macro-level comprehension to micro-level comprehension. Students answer the questions below after they have viewed a short scene in which a character is caught searching a hotel room.

Figure 13a
Macro-Level Question for *Die Dame aus Amsterdam*

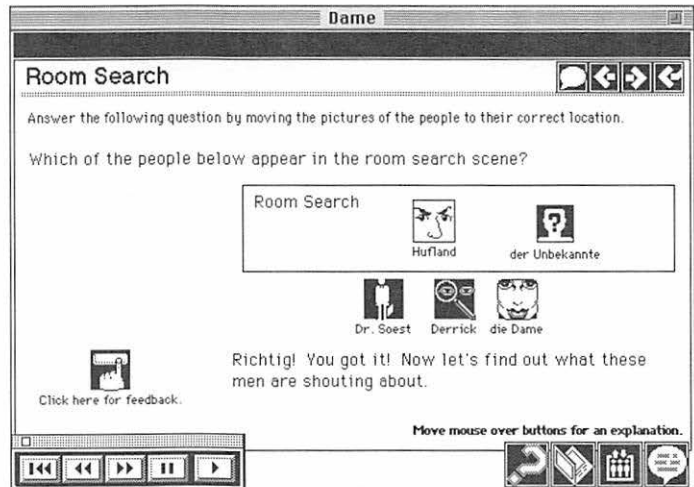


Figure 13b
Micro-Level Question
Number One for Die
Dame aus Amsterdam

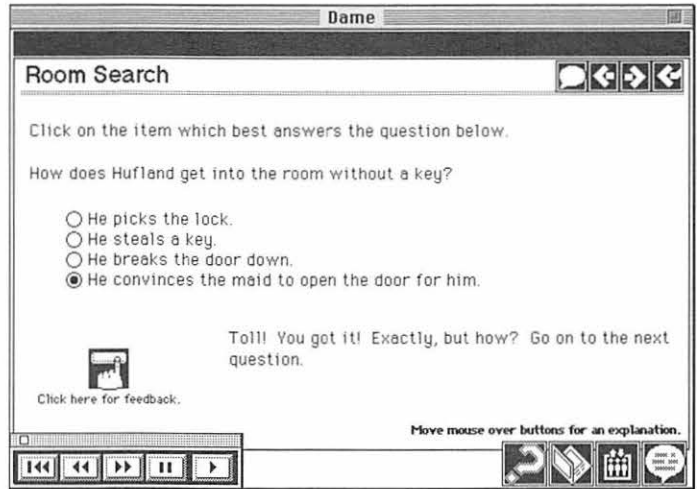


Figure 13c
Micro-Level Question
Number Two for Die
Dame aus Amsterdam

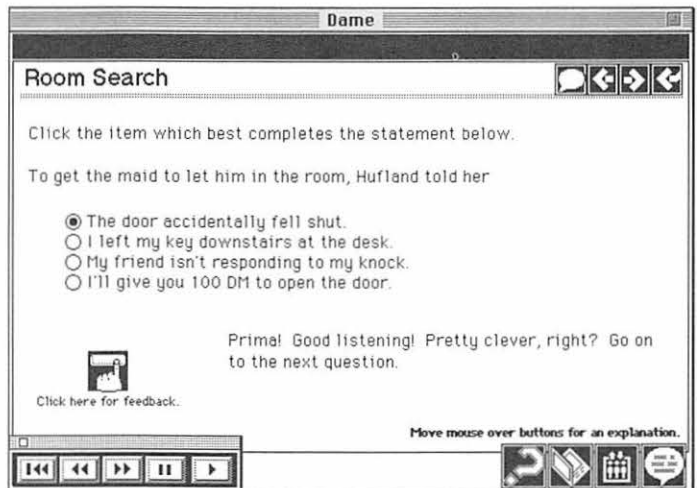


Figure 13d
Micro-Level Question
Number Three for Die
Dame aus Amsterdam

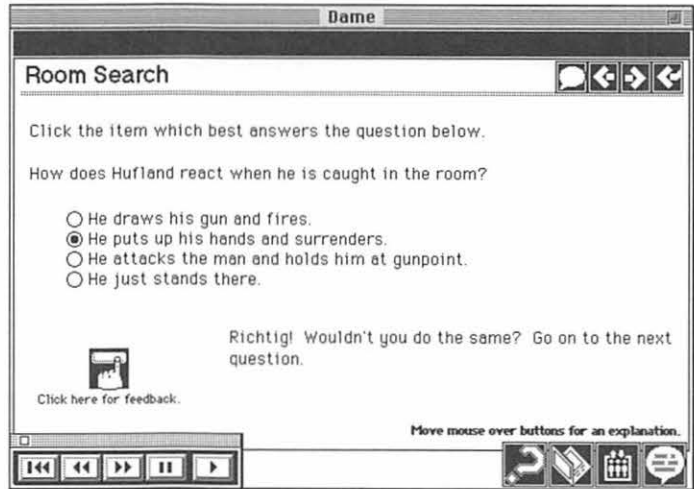
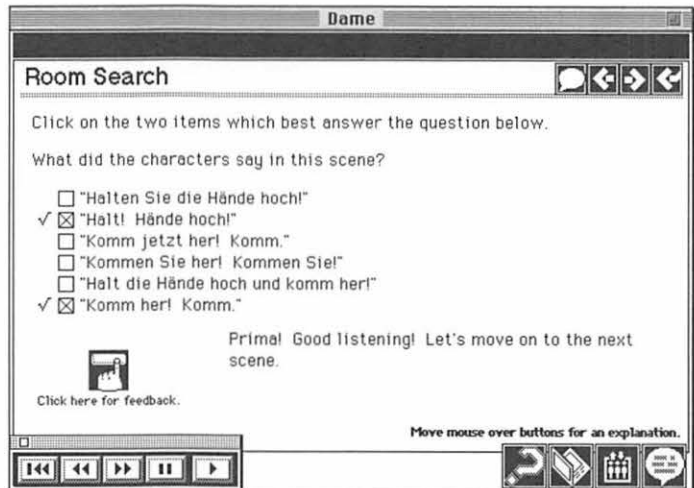


Figure 13e
Micro-Level Question
Number Four for Die
Dame aus Amsterdam



The first question, an icon sorting macro-level question, requires students to identify the characters who are involved in the scene. The next four questions are micro-level questions which direct students' attention to the salient details of the scene. The first three of the micro-level questions are multi-

ple choice questions and the last one is a checklist question. The first micro-level question focuses on visual contextual information and asks students to observe how the character Hufland gets into the hotel room. The next question focuses on language and verifies that students have understood the dialog between Hufland and the hotel maid. Hufland is caught in the hotel room by another man, and the third micro-level question once again focuses on visual paralinguistic information. The last question instructs students to attend to the actual language spoken in this part of the scene. The combined effect of these macro- and micro-level questions is to help students to develop a complete functional understanding of the scene.

Learner Assistance Features

In addition to the five question formats presented here, *Libra* contains other authoring tools which support the design of helpful pedagogical features to guide students in the appropriate use of listening comprehension strategies. For example, recall that some students have difficulty identifying relevant sentence constituents as they parse sentences. *Libra's* ancillary stacks, which can be made accessible to students at any point in a lesson, contain templates to develop help displays to facilitate this process. Suppose that beginning students were to encounter a sentence like *La personne que nous cherchons doit être disponible à partir du 5 août.* 'The person we are looking for must be available from August 5 on.' in a video program. To help them to identify the constituent parts of the sentence, students could call up a help display like the one below.

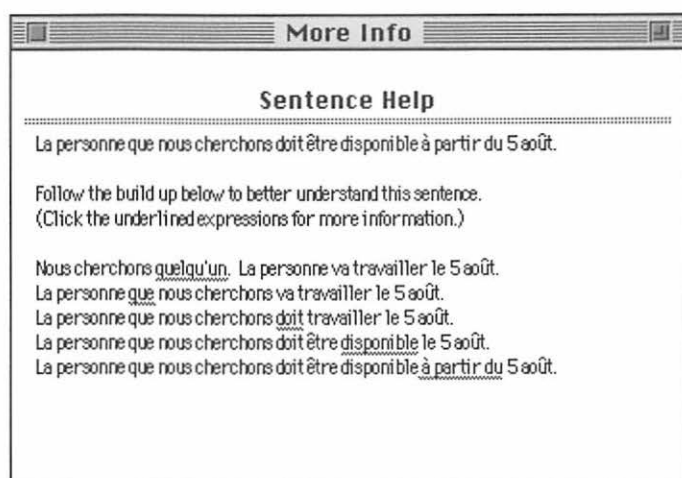


Figure 14
Ancillary Stack: Help
Display

This help display provides a progressive build up of the complex sentence and accents its important components. It explicates the meaning of the sentence by pointing out its constituent parts and showing how those parts are related to each other. If students need more information about specific elements in the sentence, they may click the hyperactive expressions which are linked to other help displays. Clicking the word *que*, for example, could call up a small window which displays "*que* = that, who; relative pronoun connecting the two sentences just above."

Students may also have difficulty identifying salient information embedded within the context of video scenes. *Libra's* ancillary stacks include a template to create a help display equipped with a set of video buttons to delimit the precise videodisc segment containing the important information. For example, in a scene in which a character in *La Marée et ses secrets* behaves rather mysteriously, a micro-level question asks students if they think character is actually only pretending to be sick. If they need help to answer this question, they may call up the following help display.

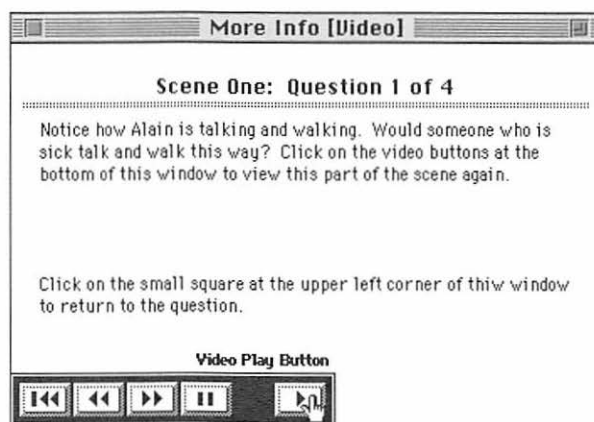


Figure 15
Libra Ancillary Stack:
Video Help Display

The text in the help display prompts students to think about the character's actions and directs them to replay the part of the scene in which his actions betray his real intentions. Additional icon buttons linked to other help displays can be added to this help display to create a series of nested help displays to focus students' attention on progressively smaller segments of the scene.

Libra's script building tools can be used to develop written scripts of the video text tailored to students' needs and the instructional requirements of the lesson. Lesson authors may

choose to make complete scripts of the video or partial scripts which highlight only important textual information. They may further choose which words and expressions to gloss or to define and the ways in which they wish to do so. Although *Libra* allows all the words in the script to be glossed, it is probably advisable in most instances to gloss only those words which carry important information in the text. For example the Spanish video script below gives students a partial script of a video scene from *Zarabanda*.

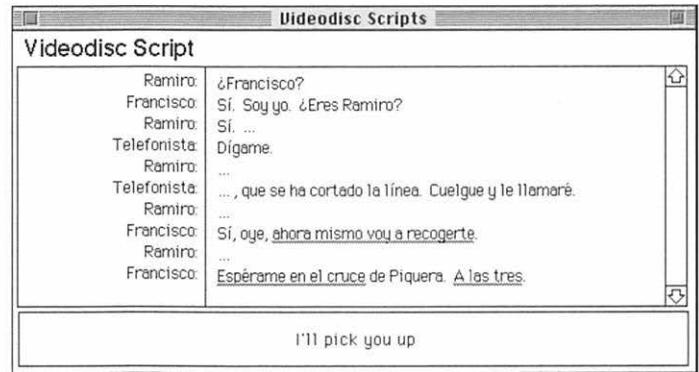


Figure 16
*Libra Ancillary Stack:
Video Script Display*

The ellipses indicate that words have been deleted from the script. Of the remaining words, only those which bear directly on the primary message of the scene are marked for further explanation. Thus the underlined phrase *ahora mismo voy a recogerte* is glossed to explain that one character will pick another character up, the central message of the scene. The details of where and when they will meet are expressed in glosses for *espérame en el cruce* 'wait for me at the crossroads' and *A las tres* 'at three o'clock.' Since the underlined expressions are hyperactive expressions, they can also be linked to other explanatory devices such as digitized audio or graphics files. *Libra's* script glossing tools also serve as the basis of user-definable dictionaries.

***Libra* and Foreign Language Listening Comprehension**

Each of the authoring tools in *Libra* has been designed to enable faculty-authors to create lessons which model appropriate listening comprehension strategies and guide students in their use. They include straightforward procedures to make advance organizers such as pictorial cues, text maps, and vocabulary presentations; various kinds of comprehension checks to confirm students' understanding at both macro- and micro-levels of text processing; and student help features such

as hyperactive text displays, help displays, video scripts, and dictionaries. Because of the inherent flexibility of *Libra's* tools, faculty-authors may create specific combinations of instructional designs supported by tailor-made pedagogical assistance for different kinds of listening comprehension tasks. IAV programs which reflect the underlying paradigm of *Libra* and include appropriate learner assistance will provide students with a rich learning environment to facilitate their development of listening comprehension proficiency.

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- ¹ See the selected bibliography on listening comprehension at the end of this report.
- ² See Rivers 1986, 1987, and 1989 and Swaffar 1989.
- ³ Numerous educators have commented on the instructional value of Computer-Assisted Language Learning and Interactive Video. See, for example, Schafer and Hannafin 1986, Douglas 1988, Bush and Crotty 1988, Schulz 1988, Verano 1989, Fletcher 1990, Garrett 1991, and the series of articles in Bush *et al* 1991 and Dunkel 1991.
- ⁴ See O'Malley *et al* 1989 and Bacon 1992 for discussions of the application of these general principles to foreign language listening comprehension tasks.
- ⁵ Richards 1983 calls the use of these kinds of strategies micro-level skills. Lund 1990, in his second language listening taxonomy, refers to them as aspects of the identification of surface structures. Rivers 1990 describes these strategies in detail and gives a lengthy list of exercise types designed to inculcate perception-segmentation skills in students.
- ⁶ O'Malley *et al* 1989 and Bacon 1992 found that some students are unable to shift their focus from concrete words and phrases to sentence level parsing processes.
- ⁷ For example, Rivers 1988 proposes that students be guided to analyze sentences in the form of Actor-Action-Object to facilitate sentence parsing.
- ⁸ See Johnson-Laird 1983, van Dijk and Kintsch 1983, Kintsch 1988 and Kintsch *et al* 1990, Singer 1990, Gernsbacher 1990, and Smith 1991 for discussions of discourse comprehension processes and the function of mental representations in native language comprehension. See Brown 1989, Bernhardt and James 1986, Swaffar *et al* 1991, and Hammadou 1991 for discussion of these principles within the context of foreign language instruction.
- ⁹ This example is taken from van Dijk and Kintsch 1983.
- ¹⁰ Native language researchers have proposed different kinds of theories of textual cohesion ranging from general discourse coherence, to narrative structures, and to text grammars. See Schank 1982, van Dijk and Kintsch 1983, Wilensky 1983, Trabasso *et al* 1984, Meyer and Freedle 1984, Kintsch 1986, and Duffy *et al* 1990.
- ¹¹ Native language researchers have proposed different kinds of theories of textual cohesion ranging from general discourse coherence, to narrative structures, and to text grammars. See Schank 1982, van Dijk and Kintsch 1983, Wilensky 1983, Trabasso *et al* 1984, Meyer and Freedle 1984, Kintsch 1986, and Duffy *et al* 1990.

¹² See Schank and Abelson 1977, Auble and Franks 1983, Perrig and Kintsch 1985, and Kintsch 1988 for discussion of schemata and their use in processing native language discourse. For discussion of the application of schema theory in foreign language education, see Hudson 1982, Carrell and Eisterhold 1983, the articles and reports in Carrell *et al* 1988, Byrnes 1984 and 1985, Bernhardt 1984, Chaudron and Richards 1986, Bernhardt and Berkemeyer 1988, Glisan 1988, Long 1989 and 1990, Swaffar *et al* 1991, and Hammadou 1991. See also Altman's 1990 exploratory discussion of schema theory and foreign language video.

¹³ Wolff 1987 has found evidence that comprehenders use top-down processing over bottom-up processing in difficult stories and the reverse in easier stories. He attributes the difference in the use of strategies to students' lack of linguistic knowledge in more difficult texts. Hammadou 1991 has also found evidence that students at lower proficiency levels use top-down processing more often than students at higher proficiency levels. Conversely O' Malley *et al* 1989 have reported that ineffective foreign language listeners focus on individual words in very limited bottom-up approaches.

¹⁴ Omaggio 1979, Byrnes 1984, Dunkel 1986, and Joiner 1986 have described the use of illustrations as advance organizers for foreign language comprehension tasks. Altman 1989 and Liskin-Gasparo and Véquez 1990 have recommended preteaching pertinent vocabulary. Carrell 1984, Weissenrieder 1987a, Long 1989, Lee and Riley 1990 have proposed previewing the narrative structure of the text.

¹⁵ This proposal is similar to the one presented by Brown 1989 in which he recommended giving students an overview of the plot of stories to help them in comprehension tasks. The proposal being discussed here allows for a greater variety in the presentation of narrative structures.

¹⁶ Dunkel 1986 has noted that beginning-level students have particular difficulty disentangling the thread of discourse in authentic language texts. Long 1989 has found that students have difficulty identifying key information and filtering out less important information in comprehension texts.

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