The Effects of Keyword Captions to Authentic French Video on Learner Comprehension

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ABSTRACT

The common practice in captioning video programs for foreign language instruction is to transcribe the spoken language verbatim into captions. This practice presents a dense visual channel for foreign language learners. The study presented here tested a keyword captioning method based on the hypothesis that keyword captions present learners with less to read without attenuating their comprehension of the information in the spoken message. The design of the experiment was simple; the use of three different amounts of text on video were compared: full text, keywords, and no text. The results of the experiment showed that the keyword captions group outperformed the no-text group and that the full text captions group outperformed the keyword captions group; however, a post-hoc analysis revealed no significant difference between the means of the full text captions group and the keyword captions group. The positive effect of both keyword and full text captions on comprehension, the basic research hypothesis, is confirmed.

KEYWORDS

Authentic Video, Subtitling, Captions, Keywords, Multichannel Processing, Channel Layer Density

INTRODUCTION

This study is motivated by the hypothesis that comprehension of video featuring native speakers can be optimized by the use of a keyword method to help explicate content. Previous research has focused on the use of longer titles, such as subtitles and closed captions (Blane, 1996). The use of closed captions in particular has been the subject of many studies, most of which are based on French as the target language. (See Berwald, 1979; Barron & Atkins, 1994; Borrás, 1993; Herron, Morris, Secules, & Curtis,

1995; Secules, Herron, & Tomasello, 1992.) Video featuring native speakers has been widely used to enhance curriculum in order to teach the synthesis of culture and language, and authentic video has been claimed to be the best kind of document because it contains the sights, sounds, and gestures of the culture (Berwald, 1979, 1986; Kramsch, 1983). Authentic video presents real life situations; truly authentic video is not scripted, nor is the rate of speech or lexical appropriateness adjusted for learners.[1] Various methods have been suggested to make authentic video accessible to learners: preparation of advance organizers, vocabulary lists, summaries of the content in English (written or oral), or video captions in the second language (Garza, 1991; Terrell, 1993; Herron, 1994). Research on captioning, especially captioning in French, is discussed in the section below.

RESEARCH ON FOREIGN LANGUAGE CAPTIONING

Lambert, Boehler, and Sidoti (1981) are frequently cited for their research in captioning in French (see, for example, Blane,1996; Danan,1992). Lambert et al.'s study gained its renown from the number of treatments included in the project and from a completely unanticipated finding. The researchers compared conditions mixing the placement of the first language (English) and the second language (French) in the dialogue of a video tape sequence, in the script of the video (captions), and in a listening comprehension test. Their subjects were elementary English speaking school children in Montreal who were learning French. The children watched a television monitor with captions that scrolled up as they listened to an audio message and then answered listening comprehension questions in a written booklet. The study included nine treatment conditions, as delineated below. Note that the conditions are divided by the language of the posttest; French in conditions 1 through 5, and English in conditions 6 through 9.

Table 1
Treatment Conditions in Lambert et al. (1981) Study

Condition	Dialogue	Script	Posttest
Condition 1	French	French	French
Condition 2	French	None	French
Condition 3	None	French	French
Condition 4	French	English	French
Condition 5	English	French	French
Condition 6	English	English	English
Condition 7	English	None	English
Condition 8	None	English	English
Condition 9	English	French	English

Condition 1 used French, L2, for both channels (visual and auditory) and for testing. This condition was designated "Bi-Modal Input-L2." Condition 4 (French audio, English captions) was designated as "Normal Subtitling." Analysis revealed that the Normal Subtitling condition did little to facilitate comprehension; subjects' test scores did not differ significantly from those of conditions 2 or 3 in which French input was presented in only either the audio or text channel. Condition 5, the reverse subtitling condition (English audio, French captions), garnered the best mean score, an unanticipated result. The next highest mean—of the conditions in which French was the language of the posttest—was in condition 1 in which the students heard French, read French subtitles, and were tested in French. Of all conditions, the researchers found a "stable general trend indicating that information coming through two input forms—dialogue and scripts— is more thoroughly processed than if either dialogue or script is presented alone" (p. 143). In other words, information coming through two channels is better than one.

It should be pointed out that the subjects in this study did not watch a video and read captions; they read text on a screen while listening to an audio tape. The information in the audio and visual modalities was almost identical, thereby making the transfer of learning from one channel to the other very easy. The experiment was based largely on reading and listening comprehension, without competing video action in the visual channel. The researchers' finding on reverse subtitling can be explained by noting that second language learners of French who are anglophone typically have better reading comprehension than listening comprehension since the phonetic properties of French provide no perceptual clues about word boundaries in contradistinction to printed texts (Danan, 1992). Because of the unexpected finding that second language audio with first language text led to the highest scores, this form of captioning was investigated in two subsequent experiments (Holobow, Lambert, & Sayegh, 1984; Lambert & Holobow, 1984) and more recently confirmed by Danan (1992) with video material. However promising second language audio with first language captions may be, this instructional technique is not the focus of the discussion here. This article focuses on bi-modal captioning, captions in which the language of the written text is identical to the language of the audio.

Bi-modal captioning (or second language "closed captioning") is an attractive pedagogical tool to help learners understand authentic video. [2] Because the language of authentic materials usually lies beyond most learners' level of proficiency, second language closed captioning makes the language more accessible. Blane (1996, p. 187), citing Krashen (1985), suggested that such closed captioning offers an "interesting parallel with the notion of 'comprehensible input' in second language acquisition." Blane noted evidence of the benefit of closed captions in the second language

from the results of a 1990 study by the National Captioning Institute. This study (1990, p. 185) compared three treatments of captioning for television in Europe in order to determine whether ESL students had "the attentional capacity to read, view and listen at the same time. … On all measures of word knowledge, students who viewed captioned television consistently outscored those who did not." These ESL learners could well have been more proficient in English than most foreign language learners in the US because they had a different set of motivations for second language learning than typical American foreign language learners. In addition, second language learners are immersed in the target language, while foreign language learners can only be provided with as much immersion experience as is possible in the classroom.

Garza (1991, p. 246) gave a rationale for the pedagogical use of second language audio and second language captions when he wrote, "By providing students with a familiar (i.e., comprehensible) graphic representation of an utterance, they are empowered to begin to assign meaning to previously unintelligible aural entities, gradually building their aural comprehension in relation to the reading comprehension." The goal of the use of second language captions is to help learners match written words to their phonetic realization in the language. Garza's study on Russian and ESL learners compared their comprehension of video segments with second language captions to that of video segments without captions. Five segments of authentic American and Russian video, each between two and four minutes in length, were selected. Each segment depicted a particular genre of video (drama, comedy, news, animation, and music). A 10 item (multiple choice) comprehension test was used to measure students' comprehension of the video segments. A total of 140 students, with varying levels of proficiency in Russian, viewed the captioned or captionless Russian video segments. Comparison of the comprehension test scores of the two groups of students revealed "a mean gain of 75.2% of correct answers, a mean decrease of 61.16% of incorrect answers, and a mean decrease of 83.76% in unanswered questions for students who viewed the video segments with captions over those who viewed the same segment without captions" (p. 244). The higher comprehension scores in the group of students who viewed the video material with the second language captions were indeed impressive. Garza's data clearly showed that a textually enhanced visual channel which presents information redundant to that presented by the auditory channel facilitates students' comprehension. In his conclusion, Garza suggested that further research be conducted in "diverse types of open captioning, such as verbatim, paraphrase, … and keyword (supplying the essential word or words in an utterance)" (p. 246). Borrás (1993) also called for further investigation of the use of full text and no text captions in a study in which she found that full text captions improved comprehension scores. The study described here builds on this

research and focuses on the use of digital video media as opposed to the audio tape, video tape, or videodisc media used in earlier studies.

One advantage to using digital video for listening comprehension is that learners have control over the viewing/reviewing process, glossary look-ups, and other interactions with the language of the video material, all in a unified instructional package that can be made readily available to learners in a laboratory by means of a server. This Computer Assisted Language Learning (CALL) environment features non-linear branching to, say, glossary items or previously viewed video clips. (For a discussion of technology assisted learning environments, see Schwier & Misanchuk, 1993.)

An investigation in first language captioning in a CALL environment has results relevant to the discussion here. Barron and Atkins (1994) tested full text and partial text captioning (multichannel redundancy) in a multi-media training program in the first language. They compared the effect of audio delivery in three different formats: full text, partial text, and no text. The experimental design of their project involved the use of an untimed 30 item comprehension pretest and posttest. They found no significant differences in time spent on the test or in achievement test scores. "This lack of achievement differential indicated that the reduction of text in the partial-text/full-audio and no-text versions did not adversely affect achievement gains" (p. 303). The use of a reduced version of first language captions did not adversely affect achievement gains. The present study investigates this finding in a second language setting.

THE STUDY

To investigate the optimum amount of a second language text (French) in captions, the researcher established three levels of captions: 1) full text captions (100% of the script of the audio message), 2) partial captions in which the words to be captioned were determined by a preliminary study on keywords in the script (found to be approximately 14% for each script), and 3) no captions. The study was designed to explore two hypotheses: a) captioning of authentic video has a positive effect on the comprehension of adult college learners of French, and b) keyword captioning of authentic video has a positive effect on the comprehension of these same learners.

THE PRELIMINARY STUDY

When beginning foreign language learners choose words they do not recognize in a text, they may not be proficient enough in the language to be able to select words that are truly essential to understand the content

of authentic video. In this study, a panel of native French speakers made the assessment of which words in the text were to be the keywords included in the captions. The French speakers were instructed to read the scripts of the two video clips and to underline the words they found important to the main idea of the video clips. The researcher counted the underlined words and divided that count by the total number of respondents to calculate an initial percentage of selected words. Words receiving 50% or greater of the total number of underlined words were chosen as keywords. The percentage of keywords for each of the two scripts was almost identical, 13.9% and 14.3%.

Two video clips for all Input Conditions—full text captions, keyword captions, and no captions—were chosen from the videotape accompanying the textbook *Parallèles* (Allen and Fouletier-Smith, 1995). The captions appeared at the bottom right corner of the video clips. The captions were divided into phrases and remained on the screen for the duration of the spoken utterances. Some captions were divided into two lines since reading studies have shown that readers read in chunks of 2.5 to 3 words (Schelinger, 1968, p. 24.) The two-line captions were divided into lines of three or so words and right-justified to provide a centralized spot for easy scanning by the participants. The keyword captions were set at a default of one second, which satisfies Marleau's (1981) recommendation of one-second duration for words of 5 to 8 letters. The researcher constructed a simple HyperCard stack to play the video clips on the computer. To control for extraneous interactivity and time spent on task, the segments were shown in linear fashion , and the participants were not permitted to fast forward ore rewind the video during the treatment. Only navigation buttons were provided to allow the participants to proceed through the stack.

The study was carried out in the sixth week of second semester French classes in the 1997 spring semester at the University of Texas at Austin. The participants (N = 202) were randomly distributed among no captions, full text captions, and keyword captions groups. Immediately after the treatment, all participants completed a short-answer comprehension test consisting of seven questions in English over each video.[3] (See the comprehension tests in the Appendix to this article.).

RESULTS AND DISCUSSION OF THE STUDY

A One-way ANOVA with three levels was applied to the participants' comprehension scores. The results of that analysis are shown in Table 2.

Table 2

Means of Test Scores for Each Input Condition

Input Conditions	N	Test Score Means
No captions group	70	7.282
Full text captions group	68	10.059*
Keyword captions group	64	9.239*

*p < .001

Analysis revealed significant differences among the three groups. The participants in the full text captions group outperformed those of the two other groups, while participants in the keyword captions group outperformed those in the no captions group. Hypotheses one and two are therefore confirmed; full text captions and keyword captions have a demonstrably positive effect on learners' comprehension of authentic video. A post-hoc Scheffé test did not reveal significant differences between the full text captions group and the keyword captions group. This finding is important for the design of closed captions as an instructional aid for learners. Keyword captions are just as effective as full text captions in transmitting content. Learners no longer need to be subjected to volumes of text to read; they can in fact comprehend authentic video with considerably less pedagogical support.

## THE THEORETICAL CONSTRUCT: MULTICHANNEL PROCESSING

University level foreign language learners generally have good reading skills. As Gremmo (1985, p. 74) has asserted, "The foreign language learner who is learning to read is not merely an apprentice reader: he is not in the position of a small child encountering the written form for the first time." Good readers in any language know how to scan for selected words. In general, good readers have shorter fixations and longer "jumps" between words and always move forward through the text, whereas poor readers exhibit more frequent regressive movements (Gremmo, 1985). [4] When reading captions is part of video viewing, learners do not have the option of regressing; the video continually advances to new frames unless they are specifically given control over the video reviewing process. In this study, the participants viewed each of the video segments twice but, as mentioned above, were not permitted to review previously viewed video segments. Because the participants viewed the video clips in a continually advancing, linear fashion, they experienced breakdowns in comprehension as indicated by their inability to answer some of the questions on the comprehension tests.

The theoretical construct of multichannel processing furnishes a model which offers an explanation for breakdowns in comprehension. Four kinds

of information are available in captioned video, as represented in Figure 1.

Figure 1
The Input Processing of Multichannel Feeds Including Grimes' (1991) Attention Moderator Construct
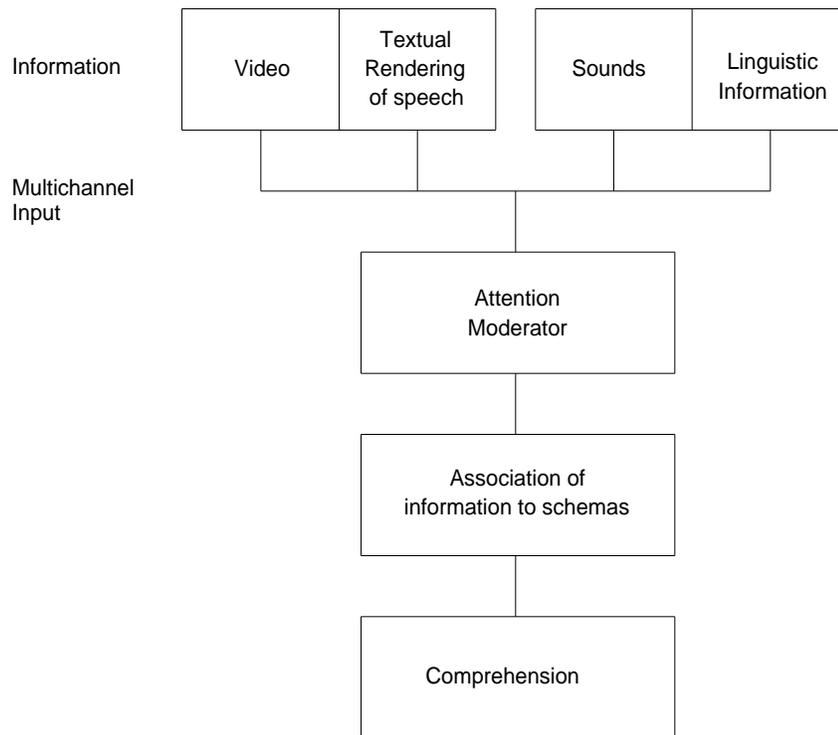
Video images and transformations (displacements of camera shots such as those in pans and close-ups) are interpreted through the eye by viewers. Viewers also read and assign meaning to the text introduced on the screen as captions. Sounds which are not dialogue (such as car horns blowing) give cues to linguistic information. Linguistic information, such as phonology, syntax, semantics, and discourse—hesitations, returns, repeats, tone of voice, etc.) is perceived by viewers as basic content for audio messages. All four categories of information are fed simultaneously (in multiple channels) to an attention moderator in the brain which filters the information for the next processing component. Association of the fil-

tered information with viewers' schemas results in comprehension in the form of restructured information. According to this model, an interruption in the multichannel input causes normally simultaneous processing to become sequential (Grimes, 1991). When the attention moderator must disengage from multiple channels and monitor one channel at a time, part of the information coming through the other channels is lost. The result is a breakdown of the comprehension process. Such interruptions occur when learners must attend, for example, more to the textual channel than the linguistic message. If the action of the video requires more attention than the textual channel, the benefit of captions is lost. With smaller amounts of text in the visual channel, learners are less likely to encounter overload to multichannel processing and more likely to achieve fuller comprehension of the information coming through the auditory channel.

RESULTS AND DISCUSSION OF POST-HOC INVESTIGATIONS

The researcher completed two post-hoc investigations: (1) a comparison of scores on recall and inferencing questions and (2) a comparison of scores on questions in which French-English cognates may have played a role in participants' understanding of the video clips.

Comparison of Recall and Inferencing Type Questions

The researcher counted the number of unanswered questions in the comprehension tests, approximately half of the total number of questions in the full text and keyword captions groups and more than half in the no captions group. This observation led to the question of whether recall or inferencing type questions were more difficult to answer. The test questions were divided into recall and inferencing groups; recall questions were defined as those questions which directed learners to provide details from the information presented in linguistic messages, and inferencing questions were defined as those questions which prompted learners to draw conclusions from or make judgments about information presented in the linguistic messages.

As Faerch and Kasper (1985, p. 269) have noted, "Comprehension problems may be due either to gaps in the input or gaps in the learner's interlanguage system." When learners do not have full command of information, they resolve their partial comprehension according to processes such as the one below described by Faerch and Kasper (p. 265).

In order to 'bridge' gaps in either input or knowledge, the [listener] activates *inferencing* procedures, i.e., qualified guesses made on the basis of any information available. Thus, pronominal reference in a discourse can be established by means of contextual information and linguistic knowledge; and the [listener] may infer the meaning of an unknown lexical item by utilizing contextual information and other linguistic knowledge.

The participants in the study described here had more difficulty with the unknown lexical items than with the gaps in their interlanguage. A factorial ANOVA was applied to the data to determine whether any differences existed between students' performance on recall questions versus inferencing questions. The results of this analysis are shown in Table 3.

Table 3
Comparison of Means of Recall Type and Inferencing Type Questions

Input Condition	Means of Recall Questions	Means of Inferencing Questions	F
No captions group	0.224521	0.49992	6.4410**
Full text captions group	0.469413	0.58548	0.6821*
Keyword captions group	0.382016	0.62003	6.6309**

*not significant
**$p < .05$

The test score means listed for recall questions and inferencing questions in Table 3 demonstrate that all participants had more difficulty with recall than with inferencing. The fact that the participants were more successful in answering inferencing type questions indicates that they bridged their gaps in interlanguage by the use of inferencing strategies. The data also show an interaction of question type and Input Condition in the keyword captions and no captions groups. The differences in means were greater in these two groups than in the complete full text captions group, in which the scores between the question type varied only a little. Were the data in Table 3 based on small sample sizes, one might speculate that this result comes from lucky guessing. Under such conditions, one or two good guessers might skew the results. However, the results in Table 3 cannot be reasonably attributed to guesswork since the sample sizes in the study numbered around 70 participants in each group. The smaller difference between the means in the full text captions group could be due to the fact that they had more to read, i.e., more information available in a more

easily recognizable format upon which to base answers for both types of questions.

Recognition of Cognates

The question arises whether the presence of cognates (words with similar spellings and similar meanings across languages) in the captions may have contributed to the participants' understanding of the video clips. If the availability of a written text benefits comprehension in general, could specific words, especially cognates, be of similar help if their meanings were directly related to comprehension questions? Certain questions in the comprehension tests required the participants to recall information contained in cognates. It would seem that cognates in typologically close languages such as French and English should facilitate learners' comprehension. Questions which solicited information about keyword cognates might prejudice the results in favor of the keyword captions because the mere sight of the cognates could well make those words more perceptually salient. Several questions in the comprehension tests involved recalling cognates such as **accompagne** 'accompany,' **journaliste** 'journalist,' and **sympa** 'nice, sympathetic' or making inferences about statements such as **Il faut dire les choses en vrai; je suis condamné à mort** 'I have to tell the truth; I am condemned to death.'

The mean scores for each question in the three Input Conditions were compared using a Factorial ANOVA with a post-hoc analysis of vocabulary type (cognate versus other) as the moderator variable. The results of this analysis are shown in Table 4.

Table 4
Comparison of Mean Scores for Question Types: Cognate Versus Other

Input Condition	Means of Cognate Questions	Means of Other Questions	F
No captions group	0.55635	0.28397	2.6740*
Full text captions group	0.65582	0.48670	0.3950*
Keyword captions group	0.75775	0.36030	5.1640**

*not significant
**$p < .05$

The data in Table 4 indicate an interaction of vocabulary type and Input Condition. Comparison of the means for questions with cognates to those of questions without cognates shows no significant differences in the no

captions and the full text captions groups. However, the difference between the means between the two question types is significant for the keyword captions group. This situation warrants some discussion.

The question in which the word *accompagne* occurs is not included as a captioned word in the keyword captions group. Participants in the keyword captions group and the no captions group had to answer this question on the basis of their decoding of the aural message alone. The participants in the full text captions group saw this word, and their mean score for this question is much higher. This result is to be expected since that group had greater access to both audio information and textual information. However in another question, the data show that the keyword captions group did better than the full text captions group. That question asked participants what *chiffre d'alcoolémie* 'blood alcohol level' (an expression not typically found in the lexicons of learners at this level) meant to them. The participants in the keyword captions group were alerted to the importance of this expression by the fact that it appeared as a caption and performed better on this question. This information was flagged for them in a way that it was not for the participants in the full text captions group. Taken altogether, the data indicate that highlighted words, cognates or otherwise, serve to facilitate learner's comprehension.

RESULTS AND DISCUSSION OF AN ATTITUDINAL QUESTIONNAIRE

The participants in each group were instructed to complete a questionnaire to solicit their views on the project. Three of the items in the questionnaire were common to all groups and focused on the degree to which the participants felt they understand the video segments. The participants' responses to these questions are listed in Table 5.

Table 5
Degree to Which Participants Felt They Understood the Video Segments
(Expressed as Percentages)

Statement	No Captions Group	Full Text Captions Group	Keyword Captions Group
I didn't understand the French in the video clips at all and guessed at most of my answers.	28.17	4.41	18.46
I understood the French in the video clips a little.	74.65	86.76	84.62
I understood the French in the video clips well.	0.00	4.41	0.00

These data represent the participants' degree of confidence in their comprehension of the video material. It should be noted that only 4.41% (3 out of 68) of the participants stated that they understood well. For the most part, the participants felt they understood the French "a little."

The participants in the full text captions group and keyword captions group completed additional questionnaire items to solicit their opinions about the effectiveness of the use of the respective versions of the captions. The percentages of participants' positive responses are listed in Table 6.

Table 6
Positive Responses to Questionnaire Items on the Effectiveness of the Captions (Expressed as Percentages)

Statement	Full Text Captions Group	Keyword Captions Group
1. I feel I understood the video clips much because of the subtitles added.	23.08	58.82
2. I feel that the subtitles were distracting to the audio message and did not help me much.	41.54	07.35
3. I felt like I had to read the subtitles to get the message.	20.00	44.12
4. I felt that I couldn't listen to the audio message because I had to read the subtitles.	26.15	20.54
5. I like the idea of subtitles in French.	32.31	60.29
6. The subtitles helped me to understand the audio message because I could pick out the words the French people were saying.	38.46	67.65

Note. The word "subtitles" was used in the questionnaire items because the participants were more familiar with this word than the word "captions."

The data show that the keyword captions helped the participants in the keyword captions group to identify words better than those in the full text captions group. Only 38.46% of the participants in the full text captions group responded favorably to statement 6, compared to 67.66% of the participants in the keyword captions group. Although some of the participants commented that the keyword captions were distracting, they also found them useful to highlight information. On the other hand, the participants in the full text captions group commented on the confusion they

felt trying to match the captions to the audio message. Some of their comments included

- They speak fast! My ears are slower than my eyes!
- The video itself only helped when people were not talking. In the last video especially I didn't have time to read anything and *couldn't listen as fast as they talked.*
- When someone is talking so fast it is hard to read the subtitles. I preferred the practice video (no subtitles).
- The subtitles were helpful, but they still flew by as quickly as the actual audio message did.

DISCUSSION OF RESULTS AND COMPREHENSION

The rate of speech and the level of vocabulary used in the video clips made comprehension difficult, even with the aid of full text captions. Comparison of the participants' mean scores for each Input Condition with the total points possible shows a range of 52% to 72%. If one quantifies 'comprehensible' to mean that learners should achieve at least 75% on a comprehension test (i.e., a grade of C on a 100 point test), the participants' level of comprehension in this study is not satisfactory. The verbatim captions, while benefiting comprehension the most, required a considerable amount of reading. It is possible that the full text captions group's performance was attenuated by the degree to which reading the captions interfered with attention paid to the linguistic message. On the other hand, the keyword captions, representing only 14% of the total script, may not have provided enough information. Additional studies on keyword captions, using a higher percentage of the words in the script, would help resolve this question.

Participants in the two captioning conditions encountered an obstacle to their comprehension of the authentic video. 27.64% of the words in the script (61 out of 221 words, excluding repeated occurrences of words) were not found in the glossary of the textbook used in the course. Because of unknown vocabulary items, the participants had to rely on inferencing strategies to fill the gaps in their comprehension. Since the use of inferencing strategies depends critically on one's background knowledge, the participants' background knowledge based on American culture sometimes led them to wrong inferences about French culture. For example, in answering the question, "From what you understood in the video clip, explain why the French might obtain more driving citations than Americans," many participants did not understand the significance of the mandatory checkpoint for breathalyzer testing which they had just viewed. Most participants answered that French drink more than Americans, miss-

ing the point that French drivers are more systematically stopped at checkpoints than American drivers.

The difficulties posed by authentic video material to beginning second language learners cannot be overemphasized. Faerch and Kasper (1986, p. 265) asserted that "both the existence of gaps in the input and knowledge, and the selective operation of the central processor [of the brain], account for the fact that comprehension is typically partial rather than total" (p. 265). The participants in the study described here were not comfortable with partial comprehension, as evidenced by their responses to questionnaire items. For example, in the full text captions group—the group with the highest mean of comprehension scores—less than half of the members of this group answered the question above correctly, a good indicator of the participants' difficulties in making sense of the content of the videos.

A question of paramount importance arises: How do we determine comprehensible input for such varying vocabulary levels and different kinds of processing (listening and reading)? The answer to this question lies in deciding which authentic videos can be profitably used in the classroom. DiCarlo (1994, p. 467), in promoting multimedia technologies using video and text, wrote

> comprehensible input requires that listening comprehension activities be considered of utmost importance. If students cannot perceive that there is a systematic message being sent out, and cannot differentiate between types of messages, they will not be able to assimilate them and understand… Listening practice exercises must be meaningful and conducted in a way that students have a clear perception of content and form.

Therefore, learners need to be equipped with information about the purpose of the exercise as well as a vocabulary list, whether this list is provided ahead of time or within the listening comprehension video module itself. Additionally, captioning could well be made optional for individual learners or made progressively available in nested instructional designs (Berwald, 1979). One of the participants suggested the sequence of viewing the video first without captions, then with keyword captions, and finally with full text captions as the optimum manner of viewing.

CONCLUSION

Keyword captions are an effective method for transmitting content in video materials. Not only did the members of the keyword captions group

score almost as high as those of the full text captions group, but in questions in which the answer depended on highlighted words, the members of the keyword captions group outperformed those of the full text captions group. Keyword captions require less reading for learners, and the appearance of individual keywords in captions calls particular attention to specific content in the video.

It is this researcher's opinion that full text second language captions to authentic video encourage the learner to read the text, to the detriment of processing the linguistic message. This study offers an alternative kind of captioning which involves less textual density. Keywords enhance multi-channel processing and encourage learners to listen more and read less. When the purpose of viewing the video is listening comprehension, a keyword captioned video in the second language should be considered just as beneficial to the learners' comprehension as full text captioned video. Captioning in the second language is a part of the panoply of immersion techniques that foreign language professionals should provide to learners to develop the same 'feedforward' mechanisms in the target language that they have in their native language (Noblitt, 1995). The best method to foster this strategy is by surrounding learners with input, immersing them in the target language as much as possible. However, as Noblitt noted (p. 1).

> simply dropping the student into an environment where nothing but authentic speech is available does not solve the problem either. Immersion techniques require a lot of time on task and a lot of individual feedback so that the student can confirm or reflect the countless interpretations available for raw speech precepts. There is little provision for this process in most academic programs of language instruction. It is an often heard comment among professionals that listening comprehension is a "neglected skill."

Listening comprehension need no longer remain a neglected skill if learners are provided with a friendly environment conducive to learning. Technology based language learning environments which present short and interesting authentic video modules and a lexicon containing the keywords in the captions for use as a resource while listening may well motivate learners to spend time outside of the classroom exploring the language and culture simultaneously. Reading subtitles is an easily performed act, and subtitles make us feel comfortable because we can readily access meaning while watching foreign language films. Selected keyword captions can help learners to attain the ultimate goal of adequate comprehension of native speakers without having to read word after word on the screen.

APPENDIX

Video Clip 1 Comprehension Test

1. What does François Baxerre say about traffic citations in France?

2. The motorist hears the expression *garer devant le fourgon*, and he understands to park in front of the police van. What does the policewoman say to him after that?

3. The policewoman asks the motorist a question when he drives up. What does she ask him?

4. What is your understanding of the sign saying *Contrôle* at the side of the road?

5. Doctor Doullouiste makes some comments about *un chiffre d'alcoolémie*. What does this expression mean to you?

6. In the ambulance, they get some surprises about the condition of the drivers. Describe the surprise that Dr. Doullouiste talks about.

7. From what you understood in the video clip, explain why the French might obtain more driving citations than Americans.

Video Clip 2 Comprehension Test

8. Where does the boy's story appear, which leads to the school's discovery of his illness?

9. When did this take place?

10. Describe his classmate's reaction to the discovery of his illness.

11. When he is asked, "*As-tu peur de mourir?*", he answers, "*Oui, mais …*" What does he say after that?

12. He says "*Il faut dire les choses en vrai: je suis condamné à mort.*" Does this statement correctly describe his attitude towards his illness?

13. What is his attitude towards his illness?

14. Will he die of his illness? What does he say to support your opinion?

NOTES

[1] The studies by Herron et al. (1995) and Secules et al. (1992) focused on *French in Action*. The *French in Action* video series is scripted and enacts scenes purporting to represent real life. Because the videos are scripted, they cannot be considered truly authentic video.

[2] Closed captions for the hard of hearing are verbatim captions but with first language audio and first language text.

[3] It should be noted that the condition, French audio/French captions/English test, was not one of the conditions tested by Lambert et al. (1981).

[4] Underwood, Hubbard, and Wilkinson (1990, p. 69) stated that, "A reader's pattern of eye fixations may be described in terms of the locations and durations of the fixations, the number of fixations, and the number of regressive fixations."

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