



University of Tennessee, Knoxville

## TRACE: Tennessee Research and Creative Exchange

---

Senior Thesis Projects, 1993-2002

College Scholars

---

2001

### An Investigation of Reading Misunderstandings in Intermediate-Level French Students

Lauren Adcock

Follow this and additional works at: [https://trace.tennessee.edu/utk\\_interstp2](https://trace.tennessee.edu/utk_interstp2)

---

#### Recommended Citation

Adcock, Lauren, "An Investigation of Reading Misunderstandings in Intermediate-Level French Students" (2001). *Senior Thesis Projects, 1993-2002*.  
[https://trace.tennessee.edu/utk\\_interstp2/57](https://trace.tennessee.edu/utk_interstp2/57)

This Project is brought to you for free and open access by the College Scholars at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Senior Thesis Projects, 1993-2002 by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact [trace@utk.edu](mailto:trace@utk.edu).

**An Investigation of  
Reading Misunderstandings  
in Intermediate-Level  
French Students**

**Senior Project**

**Lauren Adcock**

**Defense Committee:  
Dr. C. Nakuma, Chair  
Dr. P. Davis-Wiley  
Dr. D. Tandy**

**The University of Tennessee, Knoxville  
April 30, 2001**

# **Table of Contents**

**Introduction**

**Rationale and Research Questions**

**Review of Related Literature**

**Methods**

Subjects

Materials

Procedures

**Hypotheses**

**Results**

**Discussion**

**Conclusion**

**References**

**Appendices**

## **Introduction**

This paper, written in partial fulfillment of requirements for the Bachelor of Arts degree at the University of Tennessee, Knoxville during the 2000-2001 school year, reports on an investigation of reading misunderstandings among intermediate-level students of French at the University of Tennessee. First, the paper presents the rationale for such a study and the questions that it hoped to answer. The previous research on second language reading comprehension is then reviewed. Following the research review, the study methods, including subjects, materials, and procedures, are described. The research hypotheses are then presented, followed by the results of the study and a discussion of the results.

## **Rationale and Research Questions**

In an increasingly global society, knowledge of more than one language is no longer just a luxury. The ability of employees to read, write, listen, and speak in a foreign language enables a company to expand its market to other countries; it gives scholars access to much larger bodies of research, and it facilitates communication and diplomatic negotiations among nations. This ever-growing importance of foreign language knowledge has helped accelerate the expansion of second language (L2) and foreign language (FL) research.<sup>1</sup> Researchers have recently begun to approach L2 learning from a cognitive angle. In this vein of research, the human brain is seen as a limited-capacity information processing system (Shook 1994). Language learners are unable to take in, process, and reproduce all the written and spoken input that they

---

<sup>1</sup>The difference between FL and L2 lies in the context of language instruction: learning a language in an environment in which that language is dominant (a Korean student learning English at an American university, for example) is considered L2, whereas learning a language in an environment in which another language is dominant (American students learning French in their U.S. high school, for example) is considered FL. For the purposes of this paper, the term L2 will be used to refer to both situations.

receive in the target language, and researchers have therefore been concerned with discovering what learners take in, why, and how, with the hope of improving FL teaching methods (Leow 1993).

L2 reading research in particular has evolved significantly in the past several years, and the very definition of reading has changed. At one time, reading was considered a static, one-sided process: the text transmitted a certain amount of information to the reader, and this amount varied according to the “difficulty” of the particular text. Recent research, however, has supported a more dynamic, interactional model of reading. In this model, text and reader interact to determine what the reader is able to take in. But what does the reader bring to the text that affects his/her comprehension?

The answer can be found, in part, in schema theory. *Schemata* is the name given to the culturally determined frameworks present in the reader’s mind that either help or hinder the comprehension of new information (Bügel & Buunk 1996). Schemata can work on several different levels, from lexical to whole-text. To give an example, let us consider a lexical schema that might fail an African reader who has never left his tropical homeland. When given a story about a heavy snowfall in Russia, this reader may experience problems with comprehension because of his lack of experience with snow. He has no schema (background information) for thinking about snow unless he has been specifically taught that it is cold, white, wet, and that it falls from the sky like rain. Similarly, a person born and raised in a small town might have difficulty understanding part of a story that involves details of using a subway or other mass transportation

system. Thus schemata can play a role in both L1 and L2 reading comprehension, but the effect is usually more pronounced in L2 reading.

L2 reading processing can be said to occur on two levels: processing for form and processing for meaning. Processing for form occurs when a reader consciously notices or “detects” linguistic data (morphological or syntactic data, for instance) in a text (Leow 1993). The linguistic information contained in a text is called input, and the portion of the input selected by the reader for further processing is known as intake. Portions of the intake are then acquired by the learner and become part of his/her expressive language repertoire (Shook 1994). The other level of L2 reading is that of processing for meaning, or what is often simply called reading comprehension. While some of the same factors may affect the two levels of L2 reading processing, comprehension of meaning is the focus of this study. Keeping in mind the current characterization of reading as interaction, I set out to determine what comprehension problems one population of U.S. university students might have when reading a text in French.

### **Review of Related Literature**

Before beginning to look at factors affecting L2 reading comprehension, one must decide how to assess this comprehension. The tools or tests used to evaluate a reader’s understanding of a text vary according to the tester’s focus (Bügel & Buunk 1996). In some cases a picture of overall comprehension is desired, and in other cases, the focus is on specific linguistic items (verb tenses, for instance) or on particular portions of the text. For focused assessment of this kind, tests might consist of multiple-choice or true/false questions. These types of tests force the reader to make a judgment about the meaning of

the passage. Other types of reading comprehension assessment, such as recall protocols, allow for ambiguity of reader response and even avoidance of text items that the reader might not have understood. With the recall protocol, learners are asked to read a text and then write down everything they remember from it, without referring back to the text. Cautious readers avoid mention of the portions of the text that they do not understand, so in a sense, recall protocols can mask misunderstandings. Recall is usually done in the learners' L1 to insure validity of the test. Recalls written in the L2 may contain errors that result from the learners' limited writing proficiency in the language, as well as from their limited ability to comprehend the text. Having the readers write the recalls in their L1 therefore eliminates the variable of L2 writing ability.

As noted above, recent L2 reading research has offered an interactive vision of the reading process, with reader and text variables combining to determine the resulting level of understanding. Therefore, factors affecting successful comprehension of an L2 text reside either in the text itself or in the reader. Often, however, the boundary between these two categories is blurred, and some factors can be called neither fully text-based nor fully reader-based. This paper will first examine the factors that are primarily text-based.

One factor that has long been considered a determiner of reading success is the complexity of a text, at both the morphological and syntactic levels. A text that is morphologically complex contains a high percentage of low-frequency vocabulary. Specialized texts, such as those dealing with computers, medicine, or other jargon-heavy disciplines, can also be morphologically complex. In order to fully comprehend this sort of text, a reader must possess a rather advanced (or specialized) L2 lexicon. Syntactic

complexity is closely related to morphological complexity, and is often used as an indicator of the “level” of a written text. Number of relative clauses, compound or abstract verb tenses, and sentence length have all been used to gauge syntactic complexity. The presence of false cognates or of structures that are superficially similar to the L1, but with different meanings, can also negatively affect reading comprehension. This factor is not completely text-based, as it depends on the L1 of the reader; while it might present problems for a French-speaking reader of an English text, a Korean-speaking reader, for example, would not necessarily have the same difficulties with the same text.

Droop and Verhoeven addressed the issue of linguistic complexity in their 1998 Dutch-language study. These researchers tested reading efficiency and reading comprehension in Dutch and minority (Turkish and Moroccan) third-graders. Three of the six texts they used were judged to be linguistically complex and three were linguistically simple. These judgments were based on average sentence, word, and syllable lengths, and on the complexity of verb groups and noun compounds found in the text. Both the Dutch and minority students scored higher on the linguistically simple texts than on the linguistically complex texts. The researchers suggest that this effect is due in part to the fact that the groups, while they differed in their levels of proficiency in the Dutch language, were both in the process of “acquiring literacy” and therefore possessed limited abilities to use their background knowledge in understanding the complex texts (Droop & Verhoeven, 1998).

The effects of linguistic complexity on reading comprehension were also examined by Lee in his 1998 study. Native English-speaking university students read



one of three versions of a Spanish text. In the original version, nine verbs were in the subjunctive mood. In the second version, these verbs were replaced with their infinitive forms, and in the third, the verbs were given an invented ending, *-u*. By this pattern, the subjunctive verb form *diga* became *decir* in the second version and *digu* in the third. The logic of using the “nonsense” morpheme *-u* follows that of studies that use invented or “nonsense” words. This controls for prior knowledge by ensuring that none of the subjects have been exposed to the form. After the students read the passage, their reading comprehension was tested by the accuracy of their written recall of the text. Lee found that “the recall of subjunctive verb forms [the correct forms] was significantly lower than the recall of either the infinitive or invented forms” (1998, p. 40). He gives two reasons for this result. First, the subjunctive forms are more varied than the other two forms. Whereas all the infinitives end in *-r*, and the invented forms all end in *-u*, the subjunctive forms end in either *-e*, *-a*, or *-n*. Also, the subjunctive verbs encode more information (person, number, time, aspect, and mood) than the other two forms. Lee posits that because of these two facets of the complexity of subjunctive verbs, students had trouble understanding these forms (Lee, 1998, p. 41).

A reader’s understanding of an L2 text may also be influenced by the graphic representation of the text. One obvious example is a text using a writing system that differs from that of the reader’s L1. Reading a text with a different directional orientation (left/right, top/bottom) and with different characters can be a great challenge, especially in the early stages of L2 learning. Readers accustomed to the punctuation and spacing systems of their L1 might also be confused when confronted with those of the L2.

The genre or type of a text may also influence L2 readers' comprehension. Many cultures' literary canons include works of fiction, biography, drama, history, and poetry, but often one or two of these genres are emphasized in a particular culture. Consequently, a reader who has spent much of his literary life reading poetry may have difficulty with a more prosaic biography. This holds true even for texts that are not considered "literature," as letters, notices, and newspaper articles may differ a great deal stylistically from one culture to another.

The topic of a text also plays a significant role in determining comprehensibility for an L2 reader, and in several ways. Research has shown that readers with background knowledge about the subject of a text perform better on comprehension measures than readers without such background knowledge. The degree to which background knowledge facilitates comprehension is not known. In some cases, background knowledge can compensate for the reader's low level of L2 ability, but it is believed that there is a "threshold" of L2 proficiency that must be reached before background knowledge of a topic can be activated as a resource to aid comprehension of an L2 text. One study that addressed topic influence on L2 reading comprehension was that of Carrell and Wise (1998). This study explored the connection between reader interest in and prior knowledge of the topic of L2 texts. While it may seem that students would seek to learn about the topics in which they are the most interested, correlation of these two factors is highly dependent on the group of students in question. Younger learners (school-age children) have little choice but to study the required subjects in school, and therefore may have a substantial amount of knowledge about a topic in which they are uninterested. Conversely, older learners are more specialized, and are freer to learn about

the topics that interest them the most (Carrell & Wise, 1998). In their study, Carrell and Wise administered multiple-choice reading comprehension tests to ESL university students. Each student was assigned four texts according to his/her expressed interest in and tested prior knowledge of ten topics. Every student had one of each of the following types of texts: high interest/high knowledge, high interest/low knowledge, low interest/high knowledge, and low interest/low knowledge. As might be expected, the subjects performed best on the text that was high interest/high knowledge, and the worst on the low interest/low knowledge text. The authors report that “when either prior knowledge or topic interest is high, reading comprehension is slightly facilitated” (Carrell & Wise, 1998, p.299).

A factor closely related to background knowledge is cultural schemata. While background knowledge is sometimes a result of personal interest in a topic and sometimes a result of schooling, cultural schemata are almost always the result of a reader’s having lived in a particular environment. The exception is when students have learned about the target culture through study or observation. One study that illustrates particularly well the effects of cultural schemata is that of Droop and Verhoeven (1998). Again, their study tested reading efficiency and reading comprehension in third-graders with Dutch and minority (Turkish and Moroccan) backgrounds. The students read three Dutch-language texts, one referring to Dutch culture, one to the minority culture, and one that was “culture-neutral.” The topics related to Dutch culture were caring for the elderly in nursing homes and the diary of Anne Frank and World War II Memorial Day. The minority culture topics were henna party ceremonies preceding an Islamic wedding and a trip through the desert. The “culturally neutral” topics were migratory birds and the

manufacture and recycling of paper. After reading the stories aloud, the students were directed to retell the stories and answer questions about them. The students performed better on the culturally familiar texts than on the culturally unfamiliar texts (Droop & Verhoeven, 1998).

Though text-based factors have long been the focus of L2 reading research, researchers have recently shown more interest in reader variables that affect comprehension. Such reader-based factors include L2 proficiency, L1 reading ability, and cultural reading strategies.

While some knowledge of the L2 is a prerequisite to understanding a written text in that language, it is not immediately known what type and what extent of L2 knowledge is necessary for reading comprehension to take place in the L2. Brisbois' (1995) study looked at the correlations between L2 vocabulary knowledge and grammatical skills and L2 reading comprehension. One hundred and thirty-one (88 beginners and 43 upper-level students) native English-speaking students of French at the United States Air Force Academy were rated for vocabulary knowledge and grammatical skills in French. The vocabulary test consisted of 50 words that the students had to translate or define in English. The language placement test used by the Air Force Academy, which contains multiple-choice and cloze items, was used as the measure of grammatical skills. Brisbois found that vocabulary knowledge was a much better predictor of good L2 reading comprehension than grammatical knowledge. This was true for both the beginner and advanced groups.

Brisbois' study also examined the correlation between L1 reading ability and L2 reading comprehension. The subjects were given two measures of L1 reading ability: a

multiple-choice comprehension test, and recall protocols. The scores on the L1 multiple-choice test lacked the expected variability, which led Brisbois to posit that the recall protocols (which did show variability) “provide a more sensitive measure of reading comprehension” (1995, p. 575). There was a correlation between L1 recall scores and L2 comprehension scores (also measured by recall protocols) for both beginner and advanced groups, and between L1 multiple-choice scores and L2 comprehension scores for the beginner group.

Parry’s (1996) study examined the relationship between culture and individual reading strategies. She collected data on high-school seniors in Nigeria and college graduates in China to compare their reading strategies. Parry found that, in general, the Nigerian students used more top-down strategies, and tended to concentrate on global meaning. These students scored low on comprehension questions that focused on specific words and sentences within the text, but did well on questions that required them to interpret the passage as a whole. The Chinese students, on the other hand, tended to use more bottom-up strategies, such as looking up unknown words in the dictionary and then piecing together the passage parts to arrive at the meaning of the whole. These students performed better on measures that required analysis of small linguistic items. Parry thus posits that individuals’ reading strategies are influenced by their cultures’ approaches to language and literacy. The Nigerians in this study all spoke at least three languages: their mother tongue; Hausa, the lingua franca of the region; and English, the language of politics, commerce, and education. They were accustomed to speaking in their L2 (or L3) with other non-native speakers, and thus were more tolerant of ambiguity. They saw more possibility for comprehension in “considering the general

tenor of the discourse and relating it to the context of the situation” than in analyzing linguistic forms (p.682). Also, since they rarely needed to speak about their school subjects in the context of another language, they were not likely to use translation as a technique when reading English. The Chinese students, although they spoke more than one dialect of their language, did not have to switch between different grammatical systems; the changes concerned pronunciation and vocabulary. They rarely used English orally, and thus did not have the practice in code-switching that the Nigerians did. These students’ literacy experiences in their L1 were highly analytical, in part because of the Chinese writing system using characters. The stroke order for writing characters is followed strictly, and combinations of characters form new meanings. This analytic approach to language coincides well with the bottom-up reading strategies Parry observed in her Chinese students. Though Parry is careful to note that this evidence should not be used to support over-generalization of behavior patterns, she believes that it does suggest that language and literacy behaviors are at least partly culturally determined.

## **Methods**

### Subjects

The subjects of this study were students in two sections of a third-year French literature class at the University of Tennessee, Knoxville. Group One consisted of eleven students, and Group Two consisted of seventeen students. While the majority of the subjects were native English speakers, a few had different language backgrounds. Most were between eighteen and twenty-five years of age. The design of the study did not

incorporate obtaining demographic information from the participants, so little else is known about them as a group.

### Materials

As the texts for this study, I chose two short articles from the French daily newspaper *Le Monde*. “Animaux utiles” served as the text for Group One. This article about television shows that feature animals was 428 words long. Group Two’s text, “Deux chercheurs sur la piste de Dieu, au cœur du cerveau humain,” was 505 words long. This article concerned scientific research on the link between religious practices and brain activity. Both texts, along with their English translations, are included as appendices at the end of this paper.

### Procedures

The tests were administered during the students’ regular class period. Subjects were allowed 45 minutes to read the text, complete the recall protocol, and answer the multiple-choice questions. The students were instructed to first read the text for understanding, taking notes in the margins if they wished. They were then asked to complete the recall protocol without the aid of the text. The subjects were permitted to use their text, with any notes they had taken while reading, to answer the multiple-choice and general short-answer questions. The questions are included as appendices at the end of this paper.

### **Hypotheses**

Having examined the possible sources of misunderstandings reported by other researchers in second language reading, I set out to predict which ones would play a role

in this study. According to the studies of Carrell and Wise (1998) and Droop and Verhoeven (1998), one would expect the topic of the text to cause difficulty in the case of the Group Two article, since the subjects were not likely to have much background knowledge about brain research, and might also have little interest in the topic. On the other hand, the topic of the Group One article, television shows about animals, was likely to be more familiar to the readers. Because linguistic complexity has been shown to cause difficulties for L2 readers (Brisbois 1995, Droop and Verhoeven 1998, Lee 1998), I predicted that both groups would have difficulties with some of the more complex aspects of the two articles. The subjunctive verbs in “Animaux utiles” could be a source of misunderstanding for Group One, as well as the subject-verb inversion in line 9, and low-frequency vocabulary such as *cynégétique* and *halieutique*. Specialized vocabulary in the brain research article could also cause confusion. Examples of such vocabulary include *tomographe à émission de photons*, *clichés de coupes horizontales*, and *lobes pariétaux postérieurs supérieurs gauche et droit*, all found in the third paragraph of the article. The third paragraph also contained several instances of verbs in the conditional that might have impeded understanding, since they were not accompanied by the usual conditional indicator *si*. The idiom *de tout poil* in line 5 of the brain research article could also be misunderstood. Finally, “Animaux utiles” contained several culturally-embedded references for which the subjects might not have had the schemata. These included *l’A1* (line 6), *l’expédition de Nicolas Hulot chez les Papous* (line 16), *TF1* (line 25), and “*Cinq colonnes à la une*” (lines 28-29). In light of previous research on cultural schemata (Droop and Verhoeven 1998, Parry 1996), I predicted that these lexical items would cause difficulties for the subjects of the study.



It is important to note that while background knowledge of and interest in text topic are believed to play a part in reading comprehension, the design of this study did not permit insight into these variables. This paper will thus of necessity focus on text-dependent factors affecting comprehension. A future study similar to this one should include questionnaires for participants about their interests, and possibly short tests of background knowledge of the topic.

## **Results**

The multiple-choice questions were scored in a straightforward manner. If the answer given was not the best choice, it was marked incorrect. Scoring the general questions and the recalls was more complicated. Because the focus of this study was on the nature and cause of misunderstandings, the

Subjects tended to comprehend the texts well, and several papers contained no evidence of misunderstandings. For “Animaux utiles,” four of eleven students (36%) answered no questions incorrectly, and the same number submitted recalls with no errors. Of those who did show misunderstandings, the average number was 3.7 for the questions, and 2.3 for the recall. Taking into account all eleven subjects, the average number of total errors was 3.8 for “Animaux utiles.” It must be noted that several of the recalls without errors were blank or consisted of only one or two sentences, and one subject did not answer any of the questions, so the numbers do not indicate to what degree the average subject understood the text.

The subjects who read “Deux chercheurs...” fare slightly better than those in Group One. Two of seventeen (12%) answered all of the questions correctly, and four (24%) had errorless recalls. Of the subjects who did make mistakes, the average number

of misunderstandings was 2.8 for the questions, and 1.8 for the recall. For all seventeen subjects, the average number of total errors was 3.8 for “Deux chercheurs...”

Answers to the multiple-choice questions revealed common misunderstandings. Three students from Group One (27%) said that the text was about “animals in nature” rather than “television programs.” One student each thought that the author recommended “taking a walk in the forest” (9%) and “going hunting” as a way to relax (9%). The fourth multiple-choice question, which asked why Rousseau’s method of escaping stress might be difficult for some readers, was the most confusing of the multiple-choice questions. I believe that this is a result of the long, complex sentence from which the question was taken. Two students (18%) answered “because the quality of entertainment has declined since Rousseau’s time,” and two (18%) answered “because in the modern world, people don’t know how to let go of their stress.” One student (9%) thought the author compared insomnia to animals, and another (9%) thought the comparison was between stressed-out people and animals. The sixth multiple-choice question, “The author wonders if...” was answered “TV troubles one’s soul” by two subjects (18%). The general questions also revealed some misunderstandings of the text. The incorrect responses are presented in Appendix Two. Finally, the recall protocols revealed other misunderstandings of the text. One student (9%) was misled by the false cognate *prétendant*, and interpreted it to mean that people on television are “pretending,” and that we should therefore “not believe everything that we see or hear on television.” Another (9%) thought that soap operas were one of the types of television programs mentioned in the article, perhaps misinterpreting *magazine de société* in line 11. The use

of the infinitive verb forms in the second paragraph caused confusion for one subject (9%), who interpreted them as statements rather than recommendations.

Some common misunderstandings were evident in the responses to the questions from the brain research article as well. Three students (18%) thought that belief in God “has decreased since the end of the eighteenth century” and not that it “continues to be considerable.” For the third question, one student (6%) responded that feelings of oneness with the universe might be due to “individual personality traits such as empathy and compassion” rather than “the inactivity of certain parts of the parietal lobes.” Seven students (41%) believed that the scientists concluded that “religious visions are nothing more than the result of neurochemical activity” and missed the fact that “many questions remain unanswered.” Finally, six students (35%) said that the author thought that cults are more common in Tibet than in France, when in fact, the author refers to the United States as being home to many cults.

The responses to the general questions were equally, if not more, revealing of misunderstandings. When asked about the scientists’ response to the question posed at the beginning of the article, one student (6%) wrote, “a new discipline, neurology.” It is not clear whether the student meant “neurotheology,” the name given to the new discipline in the article. Another student (6%) rewrote (in French) a portion of a sentence from the last paragraph, stating that neurochemical activity is the sole cause of religious visions. A third student (6%) wrote an English translation of the last sentence of the article, which states that “the brain is programmed to help humanity survive in a cruel world.” The second question asked which two groups of people were the subjects of the brain research. All students understood that one group was Buddhist, and all but two

(88%) knew that they were Tibetan Buddhists. Three students (18%) mistranslated *franciscaines* as “French.” One student (6%) added “Franciscan priests” to the groups mentioned in the article, and one (6%) wrote “Buddhist nuns” instead of “Tibetan Buddhists.” The third question asked which aspect of brain function went on “standby” during the subjects’ religious experiences. Five students (29%) answered “parietal lobes,” and one (6%) wrote that the parietal lobes were “less responsive to light.” Two students (12%) thought that the “cerebrum” was affected, and two (12%) thought it was “cerebral functions.” One student (6%) answered that the “right side of the brain” or “function of rationale” was affected. The last general question asked why, according to the researchers, it might be important for humans to believe in God. Four students (26%) replied “to have a sense of existence.” Three students (18%) thought it had to do with stimulation that kept the brain healthy. One student (6%) wrote, “to give us a historical existence,” and one (6%) said “to have confidence in a hurtful world.” Most of these misinterpretations seem to come from a general uncertainty on the students’ part. I believe that they were unsure about the exact answers to the questions, but did understand some of the words in the article that were related to the questions, and thus used those words to create plausible responses.

Finally, the recall protocols also revealed information about the subjects’ comprehension of the text. One student (6%) thought the scientists concluded that “the brain is genetically constructed to react to religious experiences” rather than to encourage religious belief. Another wrote that the brain was “trained” to believe in religion. One student wrote that religion was thought to be “condemned,” a literal translation of the cognate *condamnée*. Five students’ recalls (29%) showed that they were confused about

the subjects of the research: French nuns, French religious leaders, Catholic monks, and Franciscan monks were all mentioned as participants. Students also varied in their understanding of the research results. Two (12%) mentioned neurotransmitters, and two (12%) wrote about the cerebral cortex, although neither of these structures was named in the article. Another student thought that the scientists found that the subjects' response times were slow during meditation. One said that the subjects were found to have "normal brain activity for a person in a restful, calm state," and another said that "meditation was [found to be] good for the person." Another student wrote that during meditation, the research subjects were "more relaxed, more at ease than during everyday life." The same student wrote that "people don't want others to suffer, and want to be able to help others." Concerning the end of the text, one student wrote that "articles are written all the time on difference in personality and environment" in religious beliefs.

## **Discussion**

The results of the research confirmed some of my hypotheses about subjects' misunderstandings of the texts. First, false cognates and words with surface similarities to English words proved to be a stumbling block for several students. The confusion of *franciscaines* (Franciscan) with *françaises* (French) is a prime example of this. *Prétendant* also fooled one student, who translated it as "pretending." "Aspiring to" is a better translation in the context of the article. I also believe that it was a mistranslation of the word *insensé* that caused several students to answer the fourth multiple-choice question for "Deux chercheurs..." incorrectly. Unless the students understood that the word meant "insane" or "ridiculous," they would not know that the scientists disagreed with answer choice A. *Condamnée* was also mistranslated by one student; in context,

“doomed” is a better translation than “condemned.” The student may actually have realized this herself; she wrote that “there was no hope for religion,” which appropriately expresses the meaning of the word. While students may have understood that *sens* meant “meaning,” several used the English word “sense” instead in their answers to the fourth general question for “Deux chercheurs...” Another example of mistranslation on the lexical level is *conçu*. One student translated it as “trained” rather than “designed.” French words with similarities to English words also presented problems for the readers; more than one confused *neurones* with “neurotransmitters” and *fonctions cérébrales* with “cerebral cortex.” A counter-example of the effect of false cognates can be found in students’ incorrect responses to the question about cults. The words *Etats-Unis*, *sectes* and *prolifèrent* were all in close proximity to one another in the article. If the students did not recognize *sectes* as a cognate of “sect” or *prolifèrent* as a cognate of “proliferate,” they might not understand that the author was saying that there are many cults or sects in the United States.

While it has been shown that readers’ background knowledge of a topic can aid comprehension, there are instances in this study in which such knowledge impeded comprehension, especially when specific details were concerned. For example, one student’s familiarity with the right and left hemispheres of the brain, coupled with the presence of the words *gauche et droit*, prompted her to hypothesize that the “right side of the brain” was affected by religious practices, rather than finding the exact sentence in the article that answered the question. Another example of background knowledge interference is the question about the popularity of belief in God (multiple choice 2, “Deux chercheurs...”). Several students answered that belief has decreased since the end

of the eighteenth century, which may be true; however, it does not reflect the information presented in the article.

As other research findings had led me to predict, cultural schemata played a role in students' interpretation of "Animaux utiles." Misunderstandings arose around the words *bouchons*, *périphérique parisien*, and *l'Al*, as evidenced in incorrect responses to the fourth multiple-choice question.

Linguistic complexity was also a factor in subjects' understanding of the texts. The metaphor *bêtes politiques* was not understood by some students, as seen in the answers to the fifth multiple-choice question on "Animaux utiles." This is possibly due to the fact that the metaphor is a less direct form of comparison than the simile; if the author had used the word *comme* in the comparison, the readers might have better understood. The use of the infinitive forms of verbs in the second paragraph of "Animaux utiles" also confused one student, who interpreted them as statements rather than recommendations. This student was probably accustomed to seeing recommendations and commands expressed in the imperative. As predicted, lexical complexity was also evident in "Deux chercheurs," as one student translated *luminosités* as "response times" rather than the cognate "luminosity."

A comparison of the study results and my research hypotheses shows that I was correct about the general headings of factors that caused misunderstandings—vocabulary, linguistic complexity, cultural schemata—but that the particular lexical and syntactic items I singled out as "difficult" were not always so. Neither the subjunctive verbs, the subject-verb inversion, nor the words *cynégétique* and *halieutique* caused any noticeable misunderstandings. Likewise, I was unable to predict exactly which words would cause

problems in “Deux chercheurs...” The conditional verbs in this article did not interfere with comprehension, and the effect of the idiom *de tout poil* is unknown. It may have contributed to the students’ incorrect answers to the multiple-choice question about cults.

## **Conclusion**

In summary, knowledge of factors affecting L2 reading comprehension was helpful in predicting, with some degree of accuracy, the difficulties that American university students would have when reading a French text. While the study was conducted with less scientific rigor than would be desirable, I believe that the results may still be helpful to language teachers in many different situations. Whether choosing authentic texts or simplified pieces written for pedagogical purposes, teachers who are aware of the many factors affecting L2 reading understanding can better serve their students by providing reading material that is challenging without being frustrating.

In examining the results of this study, I became acutely aware of the difficulties in understanding why readers interpret the text in a particular way. Often I came across misunderstandings where I thought there would be none, and readers often understood parts of the text that I predicted would be difficult. For these reasons, I would make changes in the methods if I were to do a similar study in the future. I would prefer to do a more qualitative analysis, perhaps asking the students to read the text and then doing an oral interview. I would ask them to tell me about the text, and would prompt them to explain the reasoning behind their interpretations.



## References

- Brisbois, J. E. (1995). Connections between first- and second-language reading. Journal of Reading Behavior, 27, 565-584.
- Bügel, K., & Buunk, B. P. (1996). Sex differences in foreign language text comprehension: The role of interests and prior knowledge. The Modern Language Journal, 80, 15-31.
- Carrell, P. L., & Wise, T. E. (1998). The relationship between prior knowledge and topic interest in second language reading. Studies in Second Language Acquisition, 20, 285-309.
- Droop, M., & Verhoeven, L. (1998). Background knowledge, linguistic complexity, and second-language reading comprehension. Journal of Literacy Research, 30, 253-271.
- Lee, J. F. (1998). The relationship of verb morphology to second language reading comprehension and input processing. The Modern Language Journal, 82, 33-48.
- Leow, R. P. (1993). To simplify or not to simplify: A look at intake. Studies in Second Language Acquisition, 15, 333-355.
- Parry, K. (1996). Culture, literacy, and L2 reading. TESOL Quarterly, 30, 665-692.
- Schulz, R. A. (1984). Second language reading research: From theory to practice. Foreign Language Annals, 17, 309-312.
- Shook, D. J. (1994). FL/L2 reading, grammatical information, and the input-to-intake phenomenon. Applied Language Learning, 5, 57-93.

## Appendices

### Appendix 1.

This consists of the text used in the first session (“Animaux utiles”), its English translation, and the general and multiple-choice questions that accompanied the text.

### Appendix 2.

This contains a table and a list showing the incorrect responses to the multiple-choice and general questions about “Animaux utiles.”

### Appendix 3.

This appendix contains the text used in the second session (“Deux chercheurs sur la piste de Dieu, au cœur du cerveau humain”), its English translation, and the general and multiple-choice questions that accompanied the text.

### Appendix 4.

This contains a table and a list showing the incorrect responses to the multiple-choice and general questions about “Deux chercheurs...”

Note: The prompt for the recall protocol for both texts consisted of the following statement:

#### I. Recall:

Directions: Write everything you remember about the text, including general ideas as well as specific details.

## Appendix 1.

### Animaux utiles

5 A supposer que l'on ait dû, au cours d'une journée, subir quelques contrariétés, peut-on compter sur la télévision pour ramener un peu de sérénité dans une âme troublée ? La fréquentation de la nature, modèle *Rêveries d'un promeneur solitaire*, où Jean-Jacques Rousseau allait convertir, dans la forêt d'Ermenonville, son amertume en pensée, n'est pas à la portée de tous. Et, de plus, pour s'y rendre aujourd'hui, certains passages de périphérique parisien et bouchons sur l'A1 risquent d'ajouter du stress à la fureur, donc d'annihiler l'effet calmant escompté.

10 Reste donc la télévision, qui peut se substituer à la thérapie randonneuse, à condition que l'on choisisse bien son programme. Eviter tout ce qui peut ressembler à un journal télévisé, magazine d'information ou de société, car le risque est grand de voir sa bile noircir à nouveau sous l'effet de déclarations ineptes proférées par des personnages prétendant à de hautes destinées. Aux bêtes politiques, préférer à coup sûr les animaux, les vrais, ceux, par exemple, que nous montrait Nicolas Hulot, mercredi soir, dans  
15 «Ushuaïa nature ». L'animateur globe-trotter ne risquait pas, avec cette émission-là, de soulever une polémique comme celle de son expédition chez les Papous.

20 A la fréquentation des hommes, préférer donc celle des lions, des gorilles ou des éléphants, animaux magnifiques, mais dont l'aire de vie rétrécit de plus en plus sous la poussée démographique africaine. On était cependant heureux d'apprendre qu'en dépit de l'horrible drame rwandais de 1994 la population des gorilles de montagne, espèce très rare, avait pu être préservée grâce à l'action de courageux zoologistes.

25 L'homme contrarié, c'est bien connu, ne dort pas. La panacée des insomniaques, c'est «Histoires naturelles », tous les jours à 4 heures du matin sur TF1. A déconseiller cependant aux contrariés écolos, car l'ambiance y est plutôt « Chasse, nature, etc. ». Cette série d'émissions cynégétiques et halieutiques est une production de deux anciens «éléphants » de la télé de papa, Igor Barrère et feu Etienne Lalou, deux hommes de «Cinq colonnes à la une ». Si l'on a été suffisamment contrarié au cours d'une année, on aura pu  
30 faire le tour de l'ensemble des sujets tournés par cette série dans les années 1980. Nous avons une prédilection pour toutes les formes de chasse au canard, pour laquelle l'homme invente une foule de ruses afin de tromper la méfiance de l'oiseau. Ce soir-là, c'était la chasse à l'affût dans les Dombes. Le sujet halieutique était consacré à la pêche à la mouche en Yougoslavie. C'était au temps où ce pays n'était pas source de contrariétés  
35 pour lui-même et pour ses voisins.

Luc Rosenzweig  
dans *Le Monde* du 2 février 2001

## Useful animals

Supposing that, during the course of the day, you have had to suffer several frustrations, can you count on television to bring back some serenity to your troubled soul? Staying close to nature, as in *Réveries d'un promeneur solitaire*, in which Jean-Jacques Rousseau went to transform his bitterness into thoughts in the forest of Ermenonville, is not within everyone's reach. And, what's more, to get there today, some sections of the Paris highway loop and traffic jams on the interstate could add stress to your rage, thus annihilating the calming effect you expected.

So there remains the television, which can take the place of hiking therapy, as long as you choose your program well. Avoid anything that might resemble a news magazine or talk show, because you run a great risk of getting yourself worked up once again by the inept statements uttered by characters aspiring to great destinies. Instead of political beasts, definitely choose animals, real ones, those, for example, that Nicolas Hulot showed us every Wednesday night on "Ushuaia nature." The globe-trotting host was not likely, with that program, to stir up a controversy like the one about his expedition to the land of the Papous.

So rather than interact with humans, choose instead the company of lions, gorillas, or elephants, magnificent animals, but whose habitat is shrinking more and more under the pressure of the population increase in Africa. We were, however, glad to learn that despite the horrible drama in Rwanda in 1994, the population of mountain gorillas, a very rare species, was able to be preserved thanks to the action of courageous zoologists.

The frustrated person, it is well known, does not sleep. The panacea for insomniacs is «Histoires naturelles», every day at 4 o'clock in the morning on TF1. It is, however, not recommended for fanatical environmentalists, because the ambiance of the show is more "Hunting, nature, etc." This series of hunting and fishing shows is a production of two former "elephants" of , Igor Barrère and the late Etienne Lalou, two men from "Cinq colonnes à la une." If you have been sufficiently frustrated during the course of a year, you can see all of the subjects filmed by this series during the 1980s. We have a particular liking for all the forms of duck hunting, for which man invents all kinds of tricks to fool the wary bird. That evening, it was duck blind hunting in the Dombes. The fishing segment was devoted to fly fishing in Yugoslavia. It was at a time when that country was not a source of frustrations for itself and its neighbors.

Luc Rosenzweig  
in *Le Monde*, February 1, 2001

**Reading Comprehension Study**  
**Text : *Animaux utiles***

Please answer the following questions using what you understand and remember from the text. Circle the letter of your answer.

1. What was the text about?
  - a) the use of animals for heavy labor
  - b) animals in nature
  - c) television programs
  - d) wars in European and African countries
  
2. Most of the animals mentioned in the article and in its title were:
  - a) farm animals
  - b) household pets
  - c) insects and other small pests
  - d) large, "exotic" animals
  
3. What does the author recommend as a way to relax?
  - a) taking a walk in the forest
  - b) watching television
  - c) going hunting
  - d) reading a newspaper or magazine
  
4. Why (according to the author) might Jean-Jacques Rousseau's method of escaping life's stresses be difficult for some readers?
  - a) Because the quality of entertainment has declined since Rousseau's time.
  - b) Because traffic jams on the way out of the city add even more stress to their lives.
  - c) Because in the modern world, people don't know how to let go of their stress.
  - d) Because there are now laws that forbid hunting in many places.
  
5. The author compares \_\_\_\_\_ to animals.
  - a) politicians
  - b) insomnia
  - c) Nicolas Hulot
  - d) stressed-out people
  
6. The author wonders if:
  - a) one can count on TV to restore one's calm.
  - b) TV troubles one's soul.
  - c) Jean-Jacques Rousseau actually wrote *Rêveries* ....
  - d) Rousseau's dreams became reality.

**General Questions. Please answer the following questions in English.**

1. What exactly does the author want to know about the television in the first paragraph of the text?
  
  
  
  
  
  
  
  
  
  
2. Why does he doubt that a trip to nature will have a calming effect on one who lives in a city like Paris?
  
  
  
  
  
  
  
  
  
  
3. According to the author, what type of TV content could make one more stressed out?
  
  
  
  
  
  
  
  
  
  
4. What suggestion does the author make in paragraph 4?
  
  
  
  
  
  
  
  
  
  
5. The author recommends some TV programming on TF1. What does he say to justify his recommendations?

Appendix 2.

**Answers to multiple-choice questions—“Animaux utiles”  
(correct responses in red)**

Question	A	B	C	D
1	0	3	8	0
2	0	0	0	11
3	1	9	1	0
4	2	7	2	0
5	9	1	0	1
6	9	2	0	0

**Incorrect answers to general questions—“Animaux utiles”  
(frequency of response in parentheses)**

1. author wants reader to know that television can be very misleading (1)  
if TV will replace actual contact with nature (1)  
that it does exist (1)
2. it would be hard to adjust to a different environment/lifestyle (2)  
lives are already so rushed (1)  
the nature seen is more destructive (1)  
wouldn't know what to do with oneself (1)
3. new or different cultures or environments (1)  
programs that are ineptly made (1)  
violence (1)
4. adapt the carefree life of a bird (1)  
not to stress about TV content (1)
5. (answers to this question were not included in the study because of possible misinterpretation of the question)

### Appendix 3.

#### Deux chercheurs sur la piste de Dieu, au cœur du cerveau humain

par Michel Alberganti, dans *Le Monde* du 2 février 2001

Pourquoi bon nombre d'êtres humains continuent-ils à croire en Dieu ? Bien avant Nietzsche, dès la fin du dix-huitième siècle, certains prétendaient, au nom de la science, que la religion était condamnée. Deux siècles plus tard, ni la foi ni les pratiques religieuses n'ont disparu. Ce constat, d'autant plus troublant aux Etats-Unis où les sectes de tout poil prolifèrent, a poussé deux chercheurs de l'université de Pennsylvanie, Eugene D'Aquili et Andrew Newberg, à créer une nouvelle discipline, la neurothéologie. L'hebdomadaire *Newsweek* indique, dans son édition datée du 5 février, qu'ils s'apprêtent à révéler les résultats de leurs travaux dans un livre au titre évocateur : *Pourquoi Dieu ne disparaîtra pas*. L'ouvrage, qui sera publié le 3 avril par Ballantine Books, contient une réponse claire : « *Parce que le cerveau humain a été génétiquement conçu pour encourager les croyances religieuses.* »

Associé depuis 1993 à Eugene D'Aquili, professeur de psychiatrie et anthropologue des religions, Andrew Newberg, un neurophysiologiste de trente-trois ans spécialisé dans l'imagerie scanner, sonde les neurones des patients en extase pour y découvrir l'origine de leurs sensations. Pendant deux ans, de 1996 à 1998, il a étudié les fonctions cérébrales et les flux sanguins du cerveau de huit bouddhistes tibétains pendant leur méditation. Des nonnes franciscaines en prière ont subi les mêmes tests. Andrew Newberg utilise des marqueurs pour distinguer les parties du cerveau qui sont activées par les processus mentaux ou les actions physiques.

Les chercheurs ont étudié les cerveaux plongés dans ces états mystiques à l'aide des images fournies par un tomographe à émission de photons. Sur les clichés de coupes horizontales, les lobes pariétaux postérieurs supérieurs gauche et droit affichent des luminosités très nettement inférieures à la normale. La méditation mettrait ainsi en veilleuse certaines fonctions cérébrales. Or les zones affectées correspondent, selon les scientifiques, au sens de la dichotomie de la personnalité, c'est à dire à l'aptitude à se distinguer des autres et de l'environnement. La mise hors service de cette fonction expliquerait les sensations de plénitude absolue, de communion transcendente avec l'humanité et l'univers généralement associées à une manifestation divine. Un processus semblable expliquerait les trances engendrées par certaines danses endiablées. L'action sur d'autres zones cérébrales produirait le sentiment de canaliser toute l'énergie cosmique... Les expériences mystiques ne seraient ainsi qu'une production du cerveau stimulé par les rites religieux.

Prudents, les chercheurs américains précisaient, dans un article publié le 21 février 1998 par le quotidien *The Philadelphia Enquirer*, qu'il serait « *insensé* » de supposer que les visions religieuses « *sont réductibles à un flux neurochimique.* » Leur découverte reste loin, en effet, de répondre à toutes les questions. L'altération du fonctionnement du cerveau est-elle la cause ou le résultat des états de méditation ou de trances ? L'organe lui-même et les connexions de ses neurones ne sont-ils pas l'œuvre d'un créateur ? Sans répondre à ces interrogations légitimes, les chercheurs américains estiment que le cerveau



est programmé pour aider l'humanité à survivre dans un monde cruel en donnant un sens à son existence. Reste à identifier le programmeur.

## **Two seekers on the path to God, at the heart of the human brain**

*by Michel Alberganti, in Le Monde February 2, 2001*

Why do a good number of humans continue to believe in God? Well before Nietzsche, since the end of the eighteenth century, some people assumed, in the name of science, that religion was doomed. Two centuries later, neither faith nor religious practices has disappeared. This observation, even more troubling in the United States where all kinds of cults proliferate, pushed two researchers from the University of Pennsylvania, Eugene D'Aquili and Andrew Newberg, to create a new discipline, neurotheology. The weekly magazine *Newsweek* indicates, in the edition dated February 5, that they are preparing to reveal the results of their work in a book with a provocative title: *Why God will not disappear*. The work, which will be published April 3 by Ballantine Books, contains a clear answer: "*Because the human brain is genetically designed to encourage religious beliefs.*"

Associated since 1993 with Eugene D'Aquili, professor of psychiatry and religious anthropologist, Andrew Newberg, a thirty-three year old neurophysiologist who specializes in scanner imagery, probes the neurons of patients in ecstasy to find the origin of their sensations. For two years, from 1996 to 1998, he studied the cerebral functions and the blood flow in the brains of eight Tibetan Buddhists during their meditation. Franciscan nuns in prayer went through the same tests. Newberg uses markers to distinguish the parts of the brain that are activated by mental processes or physical actions.

The researchers studied the brains immersed in these mystical states with the help of images furnished by a photon emission tomograph. On the horizontal cut plates, the upper rear left and right parietal lobes show luminosities very distinctly below normal. In this way, meditation would put certain cerebral functions on standby. It just so happens that the zones that are affected correspond, according to the scientists, with the sense of dichotomy of the personality, that is, the aptitude to distinguish oneself from others and from one's environment. The putting out of service of this function would explain the sensations of absolute wholeness and of transcendental communion with all humanity that are generally associated with divine manifestations. A similar process would explain the trances created by certain furious dances. Action on other cerebral zones would produce the feeling of channeling all cosmic energy...Mystical experiences would therefore be nothing by a production of the brain stimulated by religious rites.

Being cautious, the American researchers made it clear, in an article published February 21, 1998 by the daily newspaper *The Philadelphia Enquirer*, that it would be "insane" to suppose that religious visions "are reducible to a neurochemical flux." Their discovery remains far, in fact, from answering all the questions. Is the alteration of brain function the cause or the result of states of meditation or trances? Are the organ itself and the connections of its neurons not the work of a creator? Without responding to these legitimate questions, the American researchers consider that the brain is programmed to aid humanity to survive in a cruel world by giving meaning to our existence. Now it remains to identify the programmer.

## **Deux chercheurs sur la piste de Dieu, au cœur du cerveau humain**

### **II. General questions:**

Please answer the following questions in English.

1. What is the scientists' response to the question posed at the beginning of the article?
2. The scientists studied the brain activity of what two groups of people?
3. What aspect of brain function was affected (i.e., went on "standby") during the subjects' religious experiences?
4. According to the scientists, why might it be important for humans to believe in God?

### **III. Multiple choice:**

Circle the letter of the best response.

1. The scientists in this article wanted to find out...
  - a) how to program the human brain to believe in God.
  - b) the relationship between brain activity and religious feelings.
  - c) in what part of the world religious cults are most active.
  - d) how tomography can be useful in medical research.
2. Belief in God...
  - a) has increased since Nietzsche's time.
  - b) has decreased since the end of the eighteenth century.
  - c) continues to be considerable.
  - d) has always been a characteristic of a small part of the world's population.
3. According to the scientists, feelings of oneness with the universe might be due to...
  - a) the inactivity of certain parts of the parietal lobes.
  - b) individual personality traits such as empathy and compassion.
  - c) the fasting that often accompanies religious rites.
  - d) high altitudes and extreme atmospheric conditions.
4. The scientists concluded that...
  - a) religious visions are nothing more than the result of neurochemical activity.
  - b) many questions remain unanswered.
  - c) Buddhists use more brain power in their meditation than do people of other religions.
  - d) religious trances augment the brain's ability to function academically.
5. The author finds that cults are more common in \_\_\_\_\_ than in France.
  - a) Tibet
  - b) Pennsylvania
  - c) other European countries
  - d) the United States

#### Appendix 4.

#### Answers to multiple-choice questions—"Deux chercheurs..." (correct answers in bold)

Question	A	B	C	D
1	0	<b>17</b>	0	0
2	0	3	<b>14</b>	0
3	<b>16</b>	1	0	0
4	7	<b>10</b>	0	0
5	6	0	0	<b>11</b>

#### Incorrect answers to general questions—"Deux chercheurs..." (frequency of response in parentheses)

1.  
a new discipline, neurology (1)  
(in French) neurochemical activity causes religious visions (1)  
(translation of last sentence of article) the brain is programmed to help humanity survive  
in a cruel world (1)
2.  
Tibetan Buddhists and French nuns (3)  
Tibetan Buddhists and Franciscan nuns and priests (1)  
Buddhist nuns and Franciscan nuns (1)  
Buddhists and Catholics (1)
3.  
parietal lobes (5)  
cerebrum (2)  
cerebral functions (2)  
parietal lobes less responsive to light (1)  
right side of the brain/function of rationale (1)
4.  
it gives us a sense of existence (4)  
stimulation/good activity level/healthy for brain (3)  
to give us a historical existence (1)  
to have confidence in a hurtful world (1)