

Exploring the Effects of First- and Second-Language Proficiency on Summarizing in French as a Second Language

Giselle Corbeil

Acadia University

University students studying a second language are often required to summarize information they read or hear in that language. These learners bring with them a number of first-language summarization skills which may have an effect on how they acquire second-language summarization skills. What macrorules of summarization are actually affected by either first-language or second-language proficiency? According to the results of this study, both first-language summarizing skills and second-language proficiency affect second-language summarizing skills, except for inclusion of main ideas and amount of distortion which are more affected by first-language summarizing skills. Neither first-language summarizing skills nor second-language proficiency have an effect on combining within and across paragraphs and the use of macropropositions. Suggestions for teaching and future research conclude the paper.

Les étudiants de niveau universitaire qui étudient une langue seconde ont souvent à résumer l'information qu'ils lisent ou entendent dans cette langue. Ces apprenants font preuve d'un nombre d'habiletés propres au résumé de texte dans leur langue maternelle qui pourraient avoir une influence sur la façon d'acquérir ces habiletés dans une langue seconde. Quelles macrorègles propres au résumé de texte sont en fait influencées soit par la compétence en langue maternelle soit par la compétence en langue seconde? Selon les résultats de cette étude, ces deux facteurs ont une influence sur l'habileté à résumer un texte dans la langue seconde, exception faite toutefois de l'incorporation des idées principales et du degré de distorsion du message qui sont plus influencés par leur habileté à résumer un texte dans leur langue maternelle. Ni la compétence dans ce domaine en langue maternelle, ni la compétence en langue seconde n'exercent une influence sur la combinaison de phrases au sein d'un paragraphe ou de plusieurs paragraphes, ou encore sur l'utilisation de macropropositions. Des suggestions quant à l'enseignement de ces habiletés et quant aux recherches à venir concluent cette étude.

Introduction

Summarizing is one of the most important academic skills for university level students to acquire. Students are required to summarize complex concepts and

information in every subject area. Furthermore, teachers frequently use this complex task to evaluate students' comprehension of concepts and materials. In second-language studies, the summarization process becomes a valuable assessment tool to monitor students' progress toward the acquisition of second-language reading comprehension skills. In a world in which technology is becoming more and more important, in which an endless stream of information must be received, analyzed and reproduced, the ability to summarize these vast amounts of incoming data is key to academic success. The type of summary most often required in academic settings, and which this study examines, can be defined as follows:

A summary is a condensed version, in your own words, of the writing of someone else, a condensation that reproduces the thought, emphasis, and tone of the original. It abstracts all the significant facts of the original — overall thesis, main points, important supporting details —, but, unlike a paraphrase, it omits and/or condenses amplifications such as descriptive details . . . (McAnulty, 1981, p. 50, cited in Johns and Mayes, 1990)

A number of research studies have examined the summarization process and have posited a set of macrorules and developmental trends in its acquisition. Most of this research, although very informative, deals mainly with first-language summarization processes; little is known about these skills in a second language. Are there similarities between the acquisition of summarizing skills in a first language and acquisition of these skills in a second language? What roles do first-language summarizing skills and level of second-language proficiency play in the acquisition of second-language summarizing skills? The present study attempts to shed some light on these issues and thereby add some new elements to the body of research in the area which, although of excellent quality, is still limited in quantity.

Existing Work on Summarizing

A number of studies have used the Kintsch and van Dijk (1978) model of prose comprehension as a framework to examine the processes involved in text comprehension and summary preparation. This model outlines three stages in the summarization process: 1) comprehension of the text as a coherent whole; 2) condensation of the meaning into its gist; and 3) production of a new text. The first two stages are input processes, involving text cohesion and gist formation, whereas the third is an output process concerned with the generation of recall or summary protocols.

In the Kintsch and van Dijk model (see also van Dijk, 1979), summary protocols operate at the global level according to three macrorules that transform the microstructure (propositions) of the text to produce a macrostructure:

1. **deletion**: the disposal of unnecessary information;
2. **generalization**: the coherent condensation of information, and
3. **construction**: the invention of global representations in place of sets of components, conditions or consequences.

Several studies have examined the use of these macrorules in the summary protocols of good (or mature) and poor (or inexperienced) readers. They have found empirical evidence supporting Kintsch and van Dijk's (1978) theory of prose comprehension, following the application of scoring schemes based on these three macrorules, which have proved highly efficient in capturing the nature of the data at hand (Brown, Campione and Day, 1981; Brown, Day and Jones, 1983; Brown and Day, 1983; Winograd, 1984; Taylor, 1984). Moreover, Brown and Day (1983), who were interested in developmental differences, discovered an ordered sequence to rule development. They observed that the deletion rule emerged first, followed by superordination and then selection of a topic sentence, and also that the construction rule was late in developing. Johnson's (1982) findings in a study of young students (in grades 1, 3 and 5) confirmed Brown and Day's theory of a developmental sequence as these young and inexperienced students had difficulty with conciseness due to limited syntactical and lexical notions. At the other end of the scale, Taylor (1984) studied the protocols of experienced professional writers and found that they studied the text, looked for structure and theme, and worried about finding an acceptable level of generality. In a comparison study of 'underprepared' and 'adept' university students, Johns (1985) found that the 'underprepared' students tended to omit more main ideas from their summary protocols, while including more sentence-level reproductions than macropropositions (generalization and construction).

Although these are first-language studies, the findings bear an interesting relation to the current study. For instance, do low-proficiency second-language learners, with their poorly developed second-language syntactical and lexical skills, experience problems with idea combinations and constructions similar to problems experienced by young native speakers? In the field of second-language studies, more research has focused on reading/writing skills (Zamel, 1983; Raimes, 1985, 1987; Jones and Tetroe, 1987; Cumming, 1989; Carson et al., 1990; Friedlander, 1990; Uzawa, 1994), than on summarizing skills. Many of these studies have attempted to analyze the effects of first-language reading/writing skills on second-language parallel skills and are therefore relevant to this study. For instance, Selinker (1983) has observed examples of positive and negative transfer occurring at the syntactic level from Israeli Hebrew to English. Later second-language studies have observed similarities between first-language writing processes and second-language writing processes of skilled and unskilled writers (Zamel, 1983; Raimes, 1985, 1987; Jones and

Tetroe, 1987; Cumming, 1989). Others have posited the transfer of literacy skills across languages, stating that reading skills transfer more easily than do writing skills (Carson et al., 1990). These findings substantiate the claims made by Cummins (1979, 1984) that demanding cognitive skills such as reading strategies, writing composition skills, and higher-order thinking skills that are already active in one's mother tongue would tend to transfer to similar second-language skills under favourable learning conditions such as motivation and adequate second-language proficiency.

However, this transfer process has raised doubts among some second-language researchers. For instance, Bernhardt and Kamil (1995), after examination of a variety of previously published data sources to which they added the results of their own study, claim that in reading, linguistic knowledge is consistently a more powerful predictor than first-language literacy. As for writing, Sasaki and Hirose (1996) found that second-language proficiency explained to a greater degree the variance in second-language writing ability than did first-language writing ability and metaknowledge. Cumming (1989) recognized that both factors differently affect the writing process. For example, he found that first-language writing expertise had a greater effect than second-language proficiency on elements of discourse organization and on the process of composition, and that second-language proficiency had a greater effect on the overall quality of writing. The contradictory nature of these findings clearly demonstrates the need for further research to determine the role played by both factors in second-language learning, reading and writing as well as summarizing. These three activities could in fact be looked upon as being interrelated. The relationship between reading and writing has already been observed in a number of studies (Squire, 1984; Pearson and Tierney, 1984; Stotsky, 1984), whereas summarizing is considered to be a process which integrates reading and writing (Havola, 1987; Sarig, 1993).

Only a few studies have dealt specifically with summarizing skills in a second language and these have mainly focussed on the use of summarizing tasks to assess second-language reading comprehension (Cohen, 1993, 1994). Cohen (1994) developed a list of suggestions to increase the reliability of summarizing tasks when used as assessment measures. He lists three main suggestions:

1. train students to recognize a good summary;
2. give careful instructions to those engaged in summarizing tasks; and
3. develop clear and precise score keys for the raters.

Other studies have compared the summary protocols of low proficiency (registered in remedial ESC classes) and high proficiency university-level ESC students to determine their use of the Kintsch and van Dijk macrorules (Johns

and Mayes, 1990). Johns and Mayes found that the low proficiency ESC students had a greater tendency to copy sentences from the text verbatim and had more difficulty combining idea units from across sentences within single paragraphs than did the high proficiency ESC students. Both groups experienced some difficulty with the macrorules of 'generalization' (condensing ideas) and 'invention' (writer-invented idea units). Similarly, Corbeil (1994, 1997) found that English-speaking university students enrolled in first- and second-year French grammar courses also experienced problems with generalization and construction. Kirby (1996) found that the more proficient ESC students were able to relate information across the entire text and operate at the meaning level of the text whereas the less proficient ESC students dealt with the text in a sequential fashion, focussing more on vocabulary and text details as well as resorting to verbatim copying. Kirby's study concluded that a reasonable level of proficiency provides a necessary basis for the activation of higher-level processes. Based on these earlier findings, we can hypothesize that less proficient second-language learners will produce more direct verbatim copies of the original than will high-proficiency students, and that more proficient students will be better able to establish links across paragraphs than will the less proficient students. It may also be reasonable to expect that many students will have similar problems with macrorules, such as generalization and construction, to those found in first-language research (Brown and Day, 1983).

This study, then, attempts to answer two questions arising from the literature review:

1. How and to what extent do summarizing skills (inclusion of main ideas, paraphrasing, combination within and across paragraphs, generalization or construction, absence of copying, distortion and personal judgements) transfer from a first language to a second language?
2. What aspects of second-language summarizing skills are most affected by second-language proficiency?

Methodology

Participants

A total of 111 English-speaking university students registered in first- to fifth-year courses of French as a second language (FSL) participated in this study, after answering a request for volunteers made by the researcher. They were paid a minimum hourly rate for their participation. In addition, 10 professionals were asked to participate in the study. This group consisted of 5 native speakers of English and 5 native speakers of French.

Materials

1. Questionnaire

A language background questionnaire asking about home language use and previous exposure to French was administered.

2. Texts

To minimize the effect of cultural differences on the hierarchical structure of the text, participants (who were primarily Canadians) were presented with texts drawn from both English-Canadian and French-Canadian magazines. Two original texts, one in English and one in French, were drawn from *Maclean's* and *L'Actualité* and entitled "Banned Parenthood" and "Au nom de la loi, prenez la pilule!" respectively. In addition, text structure was taken into consideration. Research on text structure has shown that the more organized discourse types (comparison, problem/solution and causation) lead to a superior recall of information (Carrell, 1983; Meyer, Brandt and Bluth, 1980; Meyer and Freedle, 1984). Based on this evidence, the two articles for the present study were selected with a problem/solution structure to facilitate summarizing. Both texts contained approximately the same number of main ideas, and were of comparable syntactical and lexical difficulty, as confirmed by a pilot test. Both articles were somewhat abridged, reduced from their original length to a total of approximately 600 words.

Each original text was then translated by two fluently bilingual graduate students into the second language, thereby producing a set of four texts two originals (English and French) and two translations (French and English). The original English text was translated into French as "Maternité interdite". The original French text was translated into English as "In the name of the law, take the pill!". The translations maintained a similar level of text complexity and their macrostructure was comparable.

To ensure that these texts were at an appropriate reading comprehension level for first-year university FSL students, nine English-speaking students registered in a first-year French course (not in the research cohort) were asked to summarize both the English and the French articles. These students were given a time limit of one hour and a word limit of 115 words for their summaries. An analysis of the results revealed that students had little difficulty with reading comprehension, as a majority of the significant facts contained in the articles were retained in the summaries, but that students had some difficulty staying within the word limit assigned. Based on these results, the word limit was increased from 115 to 145 words for the study. Otherwise, the level of syntactical and lexical complexity seemed to be accessible to students enrolled in first-year FSL courses.

Testing procedure

Two one-hour testing sessions were held. The language background questionnaire, described above, was administered at the beginning of the first session. The students were then given the first 600-word article and asked to devote one hour to producing a summary, within the 145-word limit. Half of the group received a French text to be summarized in French, the other half received an English text to be summarized in English. In the second session, the groups were reversed so that the 'English' group from the first session received a French text and the 'French' group received an English text. In addition, original texts and translated versions were counterbalanced so that, overall, half of the students had original texts and half had translated versions. Appropriate measures were taken to ensure that students did not receive in the second session the translated version of the original text they had completed in the first.

The following instructions were given to participants :

You are given 1 hour to read the text, to write a summary, to revise it and to hand in a clean copy. Do not forget to keep it within 145 words — anywhere from 130 to 160 words. We would also like to have your rough work.

In addition, five native speakers of English, teachers in a university department of English who had published extensively in their field of research were asked to prepare summaries, in English, of the two English texts. Similarly, five native speakers of French, university teachers of French with publications in their domain, were asked to prepare summaries of the two French texts, in French. The same time and word limit constraints given to students in their summary writing were given to these experts. The 'expert' summaries were used to determine the total number of main ideas in the texts.

Scoring procedures

Student summary protocols were scored first for the number of 'main ideas' included and the total number of 'idea units' included. The main ideas were considered to be those appearing in at least 70% (7 out of 10) of the experts' summaries. According to this measure, the English text contained 12 main ideas and the French text contained 13. The measurement of 'idea units', rather than the punctuated sentences, was based on the 'idea unit' (see Appendix 1) as defined by Kroll (1977) and later used by Johns (1985). The English text contained 65 idea units and the French text, 64 (see Appendix 2). The average number of idea units on English summaries was 15.6 for experts and 17.9 for students. On French summaries, the average was 14 for experts and 13.9 for students.

The second scoring scale used in the study was adapted from Johns and Mayes' (1990) study (see Appendix 3). This scale has two main categories:

(1) Correct replication of idea units, and (2) Distortions. 'Correct replication' comprises three sub-categories: 1) Sentence-level reproductions (accurate paraphrasing or copying verbatim); 2) Combination of idea units within a paragraph or across paragraphs; 3) Macropropositions (accurate, writer-invented idea units) that form a generalization about a paragraph, the entire reading, or a metastatement about the reading. 'Distortion' comprises four sub-categories: 1) Idea unit level distortions that either incorrectly replace the noun phrase (NP) or the verb (VP) phrase, delete essential information or add inaccurate information; 2) Combination distortions; 3) Macroproposition distortions, such as inaccurate metastatements; and, finally, 4) Inclusion of personal comments through general observations, judgements and exhortations.

One drawback became apparent in the use of this scale: it is not able to assess the writer's ability to restate an idea unit in his or her own words or to make idea units more concise than the original. To deal with this deficit, the scale was adapted so that more stringent conditions were applied to student summaries to qualify as 'accurate paraphrasing' (correct replication) as opposed to 'copying verbatim' (see Appendix 3). Also, the number of idea units that were substantially and accurately reworded and condensed was taken into account. The Macropropositions sub-category 'generalization of the entire reading' was also modified so that if, at any time, an introductory sentence considered to be a generalization of the reading was repeated in some form in the summary, then it was not subsequently recorded in this category. This decision was made on closer examination of students' summaries, which revealed that many students who used introductory sentences such as "This article is about . . .", in fact repeated all idea units in that sentence at another point in their summaries, thereby defeating the very purpose of generalization (a sample student summary can be found in Appendix 4). It should be noted that generalizations of this type, that is, unnecessary repetition of a previous generalization, were not found in any of the experts' summaries. Furthermore, only in one expert's summary out of 20 was a single instance of metastatement observed.

All summary protocols were then rated, by the researcher, according to the two scoring scales. Students whose first language was not English (12 students) were eliminated from the study. Reliability was established with a second rater on a randomly selected 25% of the protocols for each scoring scale. An inter-rater agreement of 98.1% was attained on the first scale and 92.8% on the second scale.

Data analysis

To examine the influence of second-language proficiency on summary protocols, number of years of post-secondary study of French was used as the indicator of knowledge of French. The range among participants was from one to five years. Because few had more than three years, participants were divided

into three groups: those who had studied French for one, two, three or more years. The number per group was 37, 36, and 38, respectively, for a total of 111 students.

The basic research question — whether ability to write summaries in English, proficiency in French, or both together contribute to the ability to write summaries in French — called for a regression approach. As students had written summaries in both languages, the analysis could be designed using parallel measures on summaries written in English and in French. The regression models thus had a rating of the French summaries as dependent variable, and predictor variables were the corresponding rating of the students' English summaries and grouped years of French study entered as two dummy variables. The indicator method of constructing the dummy variables was used, so that D1 was 1 for students in year group 2 and 0 for all others; D2 was 1 for those in year group 3 and 0 for all others. The two dummy variables for grouped year of study were entered on the same step; some test results are given only for the entire step. For ratings that approximated the normal distribution, ordinary least squares multiple regression was used. For some ratings that were very skewed, the measures were dichotomized and logistic regression was used.

The following section contains the findings based on six ratings from the two rating schemas. Means on the ratings for the years of study groups are given in the raw metric, even in cases where the actual analysis was of dichotomized or otherwise transformed data. Means and standard deviations by group of all ratings of English and French summaries are in Appendix 5.

Results

The results of the analysis on Combining idea units within and across paragraphs were not significant and will not be further presented. Similarly, an analysis on a variable which combined generalization of paragraphs, summary of the reading, and metastatements (Macropropositions) showed no significance. Descriptive statistics on these variables will be found in Appendix 5.

Table 1 shows the results of a multiple regression on the percent of idea units correctly reproduced. The model was significant: $F(3,107) = 4.14$, $p < .01$ with an adjusted R Square of .08.

Inclusion of main ideas in English summaries (in percent of total main ideas) had a considerable positive effect on inclusion of main ideas in French summaries. However, number of years of French study was not significant.

Table 2 shows the results of a logistic regression, the measure being Direct copying from the original passage into the summary. The measure was originally a count, but because of poor distribution it was dichotomized in both languages with 0 to 3 instances categorized as low, and 4 or more (to a maximum of 16) as high. The final model was highly significant, $\chi^2(2) = 35.4$, $p < .001$.

Table 1: Effects of the rating of summaries written in English and years of post-secondary study of French on the rating of summaries written in French: Inclusion of main ideas

Variable entered	R Square change	F change	df1,df2	Beta (last step)	Partial (last step)
English inclusion of Main ideas	.09	11.33***	1,109	.29	$t = 3.19^{**}$
French year group:	.01	0.58	2,107		
D1				.10	$t = 0.92$
D2				.10	$t = 0.94$

*** $p < .001$ ** $p < .01$ **Table 2:** Effects of the rating of summaries written in English and years of post-secondary study of French on the rating of summaries written in French: Direct copying

Variable entered	Log Likelihood χ^2	Wald	B (last step)	Exp(B) (last step)
English direct copying	22.40***	19.31***	2.43	11.40
French year group(2 d.f.)	13.00***	10.39**		
D1		0.18	0.22	1.25
D2		7.45**	-1.76	0.17

*** $p < .001$ ** $p < .01$

Amount of English copying and number of years of French study significantly affected amount of direct copying in French summaries. Because the Wald statistic was significant also on the last step (18.82, $p < .001$) we have evidence that the effect of ability in English was independent of French study, while the sign indicates a positive effect. The negative sign on D2 (a contrast of group 3 with groups 1 and 2) reflects the fact that the mean was lowest in the group with highest knowledge of French. The means of the three French year groups were: 3.7, 4.6, and 2.1, with the last being the group with most years of study.

Table 3 shows the results of a multiple regression on Paraphrasing. The model as a whole was highly significant with $F(3,107) = 15.4$, $p < .001$. The corresponding adjusted R Square was .28.

Both Paraphrasing in English summaries and years of French study independently had positive effects on Paraphrasing in French summaries. The means of the three French years of study groups were 6.1, 7.4 and 10.0. The high performance by group 3 accounts for the large t-test for the second dummy variable.

Table 3: Effects of the rating of summaries written in English and years of post-secondary study of French on the rating of summaries written in French: Paraphrasing

Variable entered	R Square change	F change	df1,df2	Beta (last step)	Partial (last step)
English paraphrasing	.19	25.06***	1,109	.33	$t = 3.93***$
French year group:	.11	8.76***	2,107		
D1				.14	$t = 1.48$
D2				.40	$t = 4.13***$

*** $p < .001$ **Table 4:** Effects of the rating of summaries written in English and years of post-secondary study of French on the rating of summaries written in French: Distortion of information

Variable entered	Log Likelihood χ^2	Wald	B (last step)	Exp(B) (last step)
English Distortion	7.00**	5.53*	1.58	4.86
French year group(2 d.f.)	0.28			
D1		0.27	-0.25	0.78
D2		0.10	-0.16	0.86

** $p < .01$ * $p < .05$

The Distortion rating concerns the amount of change or distortion introduced into the summary by inaccurate paraphrasing, combinations, or macro-propositions, or by interjecting personal comments. This variable was a count and was dichotomized, with 0 or 1 inaccuracy being categorized as low and 2 to the maximum (10 in French and 4 in English) being categorized as high. The model presented in Table 4 does not quite reach significance: $\chi^2(3) = 7.27$, $p < .07$.

Amount of Distortion in English summaries was related to amount of Distortion in French summaries, but French study was not related. The Wald statistic for distortion in English was significant on step 2 (5.53, $p < .05$) and the effect was thus independent of French study.

Ability of participants to restate ideas in their own words was an important part of the rating scheme, expressed as a percentage. The resulting variables were skewed in both French and English and were transformed using standard power transformations before the multiple regression reported in Table 5 was run. The overall model was significant, $F(3,107) = 7.78$, $p < .001$ and an adjusted R Square of .16.

Table 5: Effects of the rating of summaries written in English and years of post-secondary study of French on the rating of summaries written in French: Rewording

Variable entered	R Square change	F change	df1,df2	Beta (last step)	Partial (last step)
English					
Rewording	.10	11.54***	1,109	.26	$t = 2.99^{**}$
French year group:	.08	5.44**	2,107		
D1				.02	$t = 0.75$
D2				.13	$t = 2.43^*$

* $p < .05$ ** $p < .01$ *** $p < .001$ **Table 6:** Effects of the rating of summaries written in English and years of post-secondary study of French on the rating of summaries written in French: Condensing

Variable entered	R Square change	F change	df1,df2	Beta (last step)	Partial (last step)
English					
Condensing	.04	4.22*	1,109	0.16	$t = 1.65$
French year group:	.05	3.03	2,107		
D1				-0.09	$t = -0.75$
D2				0.17	$t = 1.57$

* $p < .05$

Both English Rewording and French study affected French Rewording significantly, positively, and independently. The significance of D2 reflects the high scores in group 3. The means of the three groups are: 29.2, 24.5, and 42.8.

Table 6 shows the results of a multiple regression analysis on Condensing ability expressed as a percentage. The overall model was significant ($F(3,107) = 3.48, p < .05$) with an adjusted R Square of .06.

Both English Condensing and French study had an effect on French Condensing. The effect of English condensing was not independent of French year group, however, as the step 2 t test was not significant. French year group does not quite reach significance at $p = .053$. The means of the three groups are 36.0, 31.9, and 45.0.

Discussion and Conclusion

This study was designed to examine the roles played by first-language summarizing skills and by level of second-language proficiency on students' ability to summarize in the second language. The results show that both second-language

Table 7: Summary of effects of L1 Summarizing Skills and L2 Proficiency on L2 Summarizing Skills

Subskills	L1 Summarizing Skills (Effect)	L2 Proficiency (Effect)	Effect Dependency
Idea units (incl.)	Significant	Not significant	
Direct Copying	Significant	Significant	Ind. of Fr.
Paraphrasing	Significant	Significant	Both ind.
Combining	Not significant	Not significant	
Macropropositions	Not significant	Not significant	
Distortions	Significant	Not significant	Ind. of Fr.
Rewording ability	Significant	Significant	Both ind.
Conciseness ability	Significant	Significant	

study and first-language summarizing skills contribute to many aspects of second-language summarizing skills. Certain summarizing skills, for instance, are equally affected by both predictors, whereas others are more affected by either the level of second-language proficiency or by the development of first-language summarizing skills, as shown in Table 7.

Students' ability to include main ideas in their first language directly affects the performance on the same task in their second language, whereas students' second-language proficiency does not affect their performance on this task. Thus, if a student has already developed this ability in her first language, this task should present no difficulty in even the first year of French. It should be pointed out that in English Canadian schools children have some exposure to French from grade 4 on.

In the case of Direct copying, both first-language summarizing skills and second-language proficiency seem to have a significant effect on second-language summarization. Thus, if students tend towards direct copying in English, they are likely to do the same in French; however, as they move towards a higher level of French proficiency, the need to resort to this strategy seems to be reduced, as evidenced by fact that the lowest mean is observed in group 3. The unexpected high mean of group 2 compared to group 1 may be explained by the small difference between these two levels in the number of courses taken in French.

According to the results, both paraphrasing in English and proficiency in French have a significant influence on Paraphrasing in French, and, in addition, both are independent from any influence that the other variable might have exerted. The effect of French proficiency can be easily captured by looking at the means for each group, especially for group 3. Similar differences between the three levels are also reported for English. The ability to restate another's ideas in one's own words in a specific language appears to be related to the level

of lexical and syntactical knowledge resulting from the amount of exposure to printed material in that language.

First-language summarizing skills and second-language proficiency have no effect on students' ability to Combine within or across paragraphs. Examination of the means for French summaries shows group 1 with a higher rating than group 2, and with an almost comparable rating to group 3, whereas the means for English summaries indicate an increasingly small difference from group 1 to group 3.

Neither first-language summarizing skills nor second-language proficiency appear to have an effect on students' ability to use macropropositions of any kind at all. These results may be explained by the fact that this high level of summarizing skills requires an excellent command of a language in order to invent idea units accurately. It would seem that even when students write summaries in their first language, they do not attempt this kind of exercise often. The fact that for English summaries group 1 students have a higher score than do group 2 and even group 3 students could be explained by the kind of instruction students receive in high schools concerning use of metastatements or summaries of the reading at the beginning of a summarizing task. This practice still persists in first year of university whether the text to summarize is written in English or in French. Similarly, Johns and Mayes (1990) reported that the majority of protocols in both low and high ESC proficiency students failed to contain macropropositions of any type. As mentioned also by Brown and Day (1983), construction is late developing because it requires students "to add something of their own, a synopsis *in their own words* of the implicit meaning of the paragraph" (p. 14).

With regard to the last category, Distortion of information, first-language summarizing skills seem to have a significant and independent effect on French summarizing, whereas the level of French proficiency has no significant effect. Thus, if students tend to distort the author's message or interject personal opinions or comments in their first language, they are likely to do the same in their second language.

Additional analyses were performed to investigate whether first-language summarizing skills or second-language proficiency have any effect on the extent to which students are able to restate textual information in their own words and make it more concise than the original. Both first-language summarizing skills and second-language proficiency have a significant and independent effect on substantial Rewording, although English Condensing has a larger significant effect than second-language proficiency but is not independent of it. These results lead us to believe that students who are accustomed to rewording an original text in their first language will tend to approach in the same way a summarizing task in their second language. A glance at the means (Appendix 5) shows the tremendous progress made by group 3 compared to groups 2 and 1,

which indicates the positive effect of an increased proficiency in French on this ability.

Similar results were found for the ability to substantially Condense the text. Both first-language summarizing skills and increased second-language proficiency have a significant effect on this ability, although the effect of English condensing is not independent of French year group. It must be pointed out, however, that French year group does not quite reach significance ($p = .053$). It appears, when we look at the means, that group 3 has performed much better than groups 1 and 2. As percentage figures were used to measure this ability, it is difficult to compare the results with those on the ability to Combine within and across paragraphs, which used frequency counts. It should be noted that the ability to make an idea unit more concise by means of deletion or use of shorter phrases or clauses was also taken into account.

Several salient results are still worth noting: (1) both first-language summarizing skills and second-language proficiency have a significant effect on Direct copying, Paraphrasing, Rewording ability, and Conciseness ability; (2) on the other hand, it would appear that both first-language summarizing skills and second-language proficiency exert an equally significant effect on specific skills such as Direct copying and Paraphrasing, whereas first-language summarizing skills exert a more significant effect on Rewording ability and Conciseness ability (the degree of significance was almost equal for the latter); (3) first-language summarizing skills have a significant effect on both the Inclusion of main ideas and the amount of Distortions; (4) neither of the two factors has an effect on either Combining within and across paragraphs or students' use of Macropropositions (see Table 7).

Overall, both first-language summarizing skills and second-language proficiency seem to affect second-language summarizing skills to some degree, except for both the Inclusion of main ideas and the amount of Distortions, which are more affected by first-language summarizing skills, and for the Combining ability and the use of Macropropositions, which are affected by neither of these factors. It would appear that students who are good at applying macrorules in their first language attempt to do the same in their second language, but that a good lexical knowledge of the second language is nonetheless necessary to paraphrase instead of copying verbatim. It is also important to attain a reasonable level of second-language proficiency, in addition to already well developed rewording and condensing abilities in one's first language, in order to restate ideas expressed in one's second language and to make them more concise. In contrast, it would appear that an extensive knowledge of the second language is not required in order to detect the main ideas of a text written in a second language without distorting the material, if this ability already exists in the first language. These findings are not too far from those of Cumming (1989), who also recognized the role played by first-language composing skills

in written composition in a second language, especially with regard to discourse organization and composing process, whereas second-language proficiency is more likely to affect the quality of writing.

However, two macrorules, Combining within and across paragraphs and use of Macropropositions, do not appear to be influenced by either first-language summarizing skills or second-language proficiency. These results may be explained by the fact that these rules are late developing; college students may have not yet mastered these macrorules in their first language, especially in the case of inventing idea units (Johns, 1985; Brown and Day, 1983).

It would be of interest for further research to compare university students' summaries written in both their first (English) and second languages (French) with those of English and French experts. This would allow us to ascertain how far they are from expertise in both languages. It is reasonable to expect that a fourth year university student's summary in English would be more comparable to an English expert's summary than that same student's summary in French would be to a French expert's summary when the summary is produced in French, even if the student is registered in fourth year French. In the current research, experts' summaries were only used to determine the total number of idea units contained in each text, but much more could be investigated regarding the differences between summaries produced by students and those produced by experts. One could examine, for instance, for the same text, how often an expert attempted to combine text within a paragraph or across paragraphs, compared to a student. How many sentences or paragraphs were combined into one? How often did the expert manipulate the word order of a sentence in order to make it more concise, compared to a student's attempts? What kinds of inventions were used in place of paragraphs? Why was a certain kind of invention used in a particular situation? This information will provide not only a better understanding of the differences between the summarizing skills of experts and those of university students, in both their first and second languages, but also a rich data base to be exploited in instructional design for summarizing strategies, as explained in the section below.

Teaching Implications

According to the results of the current study, it would appear that some summarization rules are differentially affected by the two predictors. Certain summarizing skills, such as the use of Macropropositions and Combining within and across paragraphs, seem unaffected by either first-language summarizing skills or second-language proficiency. An enhanced performance could still be achieved in these two areas with appropriately designed learning activities and classroom exercises. Some suggestions to this effect are made below, but should be approached with caution, given the nature of the findings.

Students' ability to combine idea units within paragraphs might be improved through the following exercise: give students a text, composed of several paragraphs, and ask them to identify the main idea in each paragraph, eliminating all unnecessary details, and write it as a full punctuated sentence. Then ask students to combine two or more punctuated sentences using cohesive markers, for example: *and, but, whereas, such as, because, while*.

Combining across paragraphs is the second step in the summarization process. In a longer text, once students have determined the main ideas of each paragraph, they can proceed to identify paragraphs with common idea units and attempt to combine these into one. A preliminary step might be to analyze a number of 'expert' summary models so that students can understand how and where the original has been transformed, which paragraphs have been combined and why this was an appropriate combination. They can compare and analyze the original texts and the experts' transformed versions. Expert models could also serve as comparisons for student-prepared summaries.

Before any attempt is made to improve students' ability to use the construction rule, students could be given practice in restating text in their own words. They could, for instance, try to use superordinates for collections of nouns or verbs, find synonyms, and reduce text by transforming long clauses into short phrases or even single modifiers (adjective/adverb). Collaborative student writing activities carried out on computer could also be encouraged. Drafts and final versions of summaries can be analyzed and discussed in small groups and then with the whole class.

As students gain confidence in their ability to reduce text accurately through combining and rewording, they may then be ready to develop their ability to use the construction rule. The findings of this study suggest that experts use construction rules most often at the level of the paragraph, to provide a generalization of that paragraph, rather than at the global level to provide a generalization of an entire reading. Given this preferred approach used by experts, it would seem reasonable to place greater emphasis for our students on practice of this rule at the paragraph level. Here again, expert summaries could be helpful to show students the extent to which the surface structure of a text can be transformed without losing any of the accuracy of the text. A useful student exercise would then involve giving students a series of paragraphs from which the topic sentences have been deleted and asking them to write a topic sentence for each paragraph. It should be noted that this exercise may be appropriate for intermediate or advanced students only, as it requires a high level of lexical and syntactical knowledge.

The exercises described above, and others of this type, may benefit students in several areas. Not only may they help students specifically to improve their summarizing skills in the second language, but they may also improve students' overall level of second-language lexical and syntactical knowledge. At the same

time, students may benefit from improved summarizing skills in other subject areas as their improved skills transfer from the second- to the first-language environment. Finally, and most importantly, students may be better able to filter and manage the enormous flow of information that is readily available to them in all areas of life in this computer-dominated age.

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Appendix 1: Kroll's idea units (1977, p. 90, cited in Johns and Mayes, 1990)

1. A main clause is counted as one idea unit including (when present) a direct object, and adverbial element and a mark of subordination.
2. Full relative and adverbial clauses are counted as one idea unit.
3. Phrases, excluding 'transitional' ones, which occur in sentence initial position followed by comma or phrases which are set off from the sentence with commas are counted as separate idea units.
4. Reduced clauses of various types, including most gerundives and infinitival constructives, are separate idea units.
5. Post-nominal *-ing* phrases used as modifiers are counted as one idea unit.
6. Other types of elements counted as individual idea units are:
 - a. Absolutes
 - b. Appositives

Appendix 2: Au nom de la loi, prenez la pilule !

1. Aux États-Unis,
2. presque tous les États offrent gratuitement des contraceptifs aux assistées sociales,
3. mais seulement 12 % de ces femmes les utilisent.
4. Or, 92 % des assistées qui ont deux enfants vivent aux crochets de l'État toute leur vie
5. Comment briser ce cercle vicieux?
6. Le contraceptif Norplant est peut-être la solution.
7. C'est un tube gros comme une allumette
8. qu'on implante dans le bras
9. qui agit pendant cinq ans
10. avec un taux de succès de 99,8 %.
11. Pour l'instant,
12. les Américains vivant sous le seuil de la pauvreté peuvent l'obtenir gratuitement
13. le coût réel dépasse \$600.00
14. Mais des législateurs, . . . , proposent de payer ces femmes
15. actuellement minoritaires
16. pour les inciter à adopter la procédure:

17. en Louisiane, ils suggèrent de donner \$100.00 par an aux candidates;
18. au Kansas, \$500.00 au moment de l'implantation
19. Certains groupes sont en faveur de ces propositions.
20. Planned Parenthood ne voit pas de mal à ce que des femmes soient incitées à contrôler les naissances.
21. D'autres groupes, . . . , s'y opposent.
22. comme les groupes provie et les féministes
23. Ils y voient de la coercition
24. parce que le montant deviendra irrésistible pour ces femmes.
25. De plus, il y a discrimination envers ce groupe de femmes
26. Le Norplant a suscité un second débat,
27. sur les sentences criminelles celui-là.
28. Dans un cas test,
29. un juge de Californie a donné à une mère de quatre enfants, . . . , le choix entre un an de prison, ou quatre mois d'incarcération assortis de trois ans d'utilisation de Norplant.
30. reconnue coupable d'en avoir battu deux,
31. En l'absence de son avocat,
32. elle accepta le Norplant.
33. La cause fut portée en appel
34. avec l'appui de l'American Civil Liberties Union
35. et on s'attendait à aller jusqu'à la Cour suprême.
36. Mais ayant enfreint une des conditions de sa libération conditionnelle,
37. la mère fut incarcérée
38. et son cas est devenu, dans le jargon juridique, 'mou'
39. Suite à cet incident juridique
40. des législateurs du Kansas et de l'Ohio proposent d'obliger les femmes qui se droguent à utiliser le contraceptif.
41. Actuellement, un enfant sur 10 naît avec des traces de drogue dans le sang
42. ce qui peut provoquer des troubles physiques ou mentaux permanents
43. Au cours des cinq dernières années,
44. 167 femmes ont été accusées d'avoir commis un acte criminel

45. pour avoir ainsi mis en péril la vie ou la santé de leur bébé.
46. Un sondage indiquait l'an dernier que 61 % des Américains sont favorables à l'imposition du Norplant aux mères droguées,
47. 55 % aux mères coupables de violence
48. Aucun État n'a encore adopté de loi en ce sens,
49. mais plusieurs projets sont à l'étude
50. Cependant, ces sentences opposeraient le principe du contrôle par les femmes de leur corps
51. à la responsabilité de la société de défendre les enfants contre des mères irresponsables.
52. 'L'État ne devrait jamais décider d'empêcher des grossesses' dit Kim Gandy, de la National Organization for Women.
53. Si on commence avec les femmes droguées
54. ou battant leurs enfants, qui seront les suivantes?
55. Allant plus loin,
56. Isabel Sawhill, économiste à l'Urban Institute de Washington suggère de contourner le problème
57. en implantant le Norplant à la puberté à toutes les jeunes filles, comme un vaccin.
58. Cette pratique, . . . , empêcherait la discrimination.
59. qui serait universellement acceptée,
60. La décision d'avoir un enfant deviendrait un choix conscient
61. puisqu'il faudrait se faire extraire le Norplant
62. Cette méthode réduirait significativement le nombre de filles-mères et d'avortements
63. En conclusion, on peut se demander,
64. si le Norplant aura autant d'impact que la pilule anticonceptionnelle en a eu dans les années 60.

Appendix 3: Scale for summary protocols (adapted from Johns and Mayes, 1990)

Correct replication of idea units

Reproductions at the sentence level:

- 1a. Copying of one or more idea units which appear in the same orthographic sentence in the original (for example, 'Le contraceptif Norplant est peut-être la solution').
- 1b. Accurate paraphrase of one or more idea units which appear in the same orthographic sentence in the original (for example, 'une contraception a peut-être été trouvée ...')

Note: What is a paraphrase? When you paraphrase, you precisely restate in your own words a passage written (or spoken) by another person. Use your own words, phrasing (style or expression), and sentence structure to restate the message. If certain synonyms are awkward, quote the material — but resort to quotation very sparingly (Simon and Schuster, 1996).

Insignificant changes such as shifting voice (from active to passive or conversely), replacing articles with demonstrative adjectives or replacing auxiliaries by other ones (ex.: *would* for *could*) etc. do not qualify for 1b.

Combinations of two or more idea units, not combined in orthographic sentences in the original:

- 2a. Accurate combinations of two or more idea units from more than one sentence within a paragraph (for example, 'Actuellement, l'implantation de ce tube dans un bras est gratuite pour les Américaines les plus pauvres ...').
- 2b. Accurate combinations of two or more idea units across paragraphs (for example, 'Certains États sont même prêts à payer les femmes défavorisées économiquement pour qu'elles l'adoptent et même à l'imposer aux droguées ...').

Macropropositions (*accurate, writer-invented idea units* which provide a generalization for the paragraph or the reading as a whole):

- 3a. Providing a generalization about a paragraph (i.e. a topic sentence, for example, 'Mais des voix s'élèvent pour dénoncer le contrôle de l'état sur la vie des femmes ...').
- 3b. Providing a general summary or the gist of the entire reading (for example, 'Un nouveau contraceptif, Norplant provoque plusieurs débats portant sur les grossesses jugées indésirables ...').

- 3c. Providing a metastatement, often with multiple idea units, about the reading (for example, 'Dans cet article, il s'agit d'un rapport qui propose des moyens d'éliminer les mères-porteuses . . . ').

Note: As there is no room for redundant information in a constrained summary, if a general summary or metastatement is made of idea units which appear later on in the summary, the purpose of the intended generalization is therefore defeated. Every such occurrence should be signaled by the mention Repetitive attached to it and should not be included in this category.

As well, 'writer-invented' ideas refer to instances where subjects produce individual sentences which are tied but only indirectly to elements in the surface structure of the original sentences (Winograd, 1984).

Distortions

Distortions at the idea unit level:

- 4a. Idea units in which the subject NP (Nominal Phrase) is appropriate to the original, but the VP (Verbal Phrase) is not (for example, 'Aux États-Unis, presque toutes les assistées offrent gratuitement des contraceptifs').
- 4b. Idea units in which the subject NP is inappropriate but the VP is not (for example, 'mais seulement 12 % des femmes les utilisent').
- 4c. Idea units from the reading from which essential information has been deleted (for example, 'Pour l'instant, les Américaines peuvent l'obtenir gratuitement' — no previous reference —).
- 4d. Idea units from the reading, either copied or paraphrased, to which information has been added which distorts the meaning of the original (for example, 'Les féministes n'aiment pas le principe du contrôle du corps des femmes et de leurs enfants par la société').

Distorted combinations:

- 5a. Two or more combined idea units, at least one of which is inaccurate (for example, '92 % des assistées ont deux enfants même si les contraceptifs sont gratuits').
- 5b. A break-up of idea units which are combined into one orthographic sentence in the original (for example, 'Aucun État n'a encore adopté de loi. Ils étudient des projets').

Distortions at the macropropositional level:

- 6a. Macropropositions more general than the reading requires (for example, 'Une économiste suggère l'implantation universelle de Norplant afin de réduire les avortements').

- 6b. Inaccurate macropropositions (for example, 'Les États-Unis offrent gratuitement des contraceptifs, mais peu de femmes les utilisent et elles sont dépendantes de l'État avec leurs enfants').
- 6c. Inaccurate meta-statements (for example, 'Cet article est au sujet des contraceptifs et de leurs effets').

Personal comments about the subject:

- 7a. Comments on the reading itself (for example, 'On parle seulement des bons effets du Norplant').
- 7b. General observations engendered by the reading (for example, 'L' American Civil Liberties Union a porté d'autres causes en appel car le Norplant a beaucoup d'effets négatifs').
- 7c. Judgements added, usually in the form of conjuncts, which reveal reader opinion (for example, 'Le contraceptif Norplant peut être la solution mais il faut dire aussi qu'il y a beaucoup de femmes qui ont perdu la vue').
- 7d. Providing conclusions about the text which involve the writer and/or reader opinion (for example, 'Il faut s'informer davantage sur le sujet car les conséquences sont dangereuses').

Appendix 4: Sample student summary with analysis¹ (Advanced student of French)

- 1b La plupart des mères assistées vivent toujours aux dépens du gouvernement.
- 1b Il est commun partout . . . de les offrir des contraceptifs sans frais,
- 1a aux États-Unis
- 1b mais la majorité refuse.
- 1b Norplant, . . . réglerait peut-être le problème.
- 1b un contraceptif implanté
- 1b Quelques états aimeraient payer des femmes
- 1b de l'essayer
- 1b malgré la coûte
- 2a 1b Les groupes qui veulent contrôler les naissances acceptent cette idée
- 1b mais quelques-uns ne voient que le préjugé
- 2a 1b Par exemple, on veut obliger les mères violentes
- 1b et toxicomanes à utiliser le Norplant.
- 1b Plus de la moitié des américains, selon un enquête, aiment cette proposition.
- 3a Cependant, il reste encore un problème
- 1b Il est difficile de décider quand une femme a le droit de protéger son corps
- 1b et quand l'état a le droit de protéger ses enfants.
- 4c 2a On a même proposé d'implanter le Norplant dans toute fille,
- 1b rendant conscient le choix d'avoir un enfant.
- 1b Il est difficile d'établir des limites et de prévoir l'impact.

¹Codes from the Scale of Summary Protocols are indicated at the beginning of each idea unit.

Appendix 5: Means and (Standard Deviations) of Ratings

Years of study	Main Ideas		Direct Copying	
	French	English	French	English
1 – Low n = 37	56.6 (14.7)	70.6 (11.9)	3.7 (3.8)	2.5 (2.7)
2 – Medium n = 38	60.1 (14.5)	72.1 (15.0)	4.6 (3.7)	3.2 (3.2)
3 – High n = 36	61.4 (15.0)	75.6 (13.1)	2.1 (2.3)	3.2 (3.7)
Total N = 111	59.3 (14.7)	72.7 (13.4)	3.5 (3.5)	3.0 (3.2)

Years of study	Paraphrasing		Combinations	
	French	English	French	English
1 – Low n = 37	6.1 (2.8)	11.8 (4.1)	3.8 (0.7)	2.6 (0.8)
2 – Medium n = 38	7.4 (3.3)	12.7 (3.6)	3.5 (1.1)	2.8 (0.8)
3 – High n = 36	10.0 (3.6)	14.6 (4.3)	3.9 (1.0)	3.2 (1.1)
Total N = 111	7.8 (3.6)	13.0 (4.1)	3.7 (1.0)	2.9 (0.9)

Years of study	Macro-propositions		Distortions	
	French	English	French	English
1 – Low n = 37	0.7 (0.9)	1.9 (1.7)	2.3 (1.7)	0.7 (0.9)
2 – Medium n = 38	0.4 (0.9)	0.8 (1.2)	2.6 (2.4)	1.0 (1.1)
3 – High n = 36	0.8 (1.2)	0.8 (1.2)	1.9 (1.6)	0.5 (0.8)
Total N = 111	0.6 (1.0)	1.2 (1.5)	2.3 (1.9)	0.8 (1.0)

Years of study	Rewording		Conciseness	
	French	English	French	English
1 – Low n = 37	29.2 (24.3)	64.1 (19.3)	36.0 (21.1)	62.5 (16.8)
2 – Medium n = 38	24.5 (22.5)	58.7 (24.8)	31.9 (18.9)	63.2 (17.3)
3 – High n = 36	42.8 (23.6)	67.2 (23.3)	45.0 (22.3)	69.7 (18.3)
Total N = 111	32.0 (24.5)	63.3 (22.7)	37.5 (21.3)	65.1 (17.6)