

**EXPLORING THE SIMPLE VIEW OF READING IN TWO ADULT
FRENCH AS A SECOND LANGUAGE GROUPS**

by

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Abstract

The Simple View of Reading is a theoretical model that explains reading comprehension as a product of listening comprehension – the process and ability to understand information by listening – and decoding – the ability to make a letter-sound correspondence to process written information (Gough & Tunmer, 1986). The present study uses the Simple View of Reading model to explore reading comprehension in two different second language-learning groups – the first group from a Core French background ($n=16$) and the second group from a French Immersion background ($n=19$). These are both adult groups who completed initial programming in French as a Second Language in secondary school and were studying French at the university level.

The Simple View of Reading has often been used to predict reading comprehension outcomes for children from both first language settings and second or foreign language settings. The present study seeks to compare the skills associated with the Simple View of Reading within the two aforementioned groups, the first of which did not receive as much French instruction as the second (compare 600 hours to 3800 hours by end of high school for each respective group; Ministry of Education, 2013a). This study fills the gaps in research by using a sample of adult participants in a Canadian context that looks specifically at how two different French programming backgrounds both lead to the development of reading skills and the way in which reading comprehension is accounted for by three essential aspects – listening comprehension, decoding, and the Simple View of Reading model itself. The results are somewhat consistent with the research that show that listening comprehension and decoding are significant predictors of reading comprehension, however, there is not enough evidence in the present study to show that the Simple View of Reading is a significant predictor of reading comprehension.

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List of Abbreviations

Full term	Abbreviation
Simple View of Reading	SVR
Listening Comprehension	<i>lc</i>
Reading Comprehension	<i>RC</i>
Decoding	<i>D</i>
Échelle de vocabulaire en Images Peabody	ÉVIP
Wechsler Individual Achievement Test II	WIAT-II

Chapter 1

Introduction

Rationale

Since 2006, demand for French Immersion programming has seen a significant increase of 12%, with schools and school boards expanding this program across the province of Ontario (Friesen, 2013). French Immersion is just one of the programs available to families; Core French and Extended French round out the French as a Second Language curricula in Ontario (Ministry of Education, 2013a; Ministry of Education, 2014). Out of this rapidly increasing enrolment in the province's French as a Second Language programming arises a need to take a critical look at what the various Ontario French programs offer and how they each benefit students in different ways to achieve bilingualism.

In Canada, traditional bilingualism means proficiency in literacy skills and oral fluency in both of Canada's official languages – English and French. As such, French as a Second Language programs are very much part of the curriculum in anglophone Canada. English as a Second Language programs are also present in francophone Canada. The focus of this study is on French as a Second Language programs. Growing up already bilingual in English and Arabic, and as a graduate of the Ontario public school system who had the opportunity to take French as a Second Language from elementary school all the way through twelfth grade, I took an early and inspired interest in multilingualism. French, in particular, was appealing to me – if not because I had already displayed an aptitude for language learning at an early age then because it was a

refreshing, different, and personally rewarding subject for me to study.

I was enrolled in the Core French program, where from fourth grade through to and including twelfth grade Core French, literacy was the focus. I was inspired to continue in French Studies at the university level where I participated in enriching courses that developed my language skills and my passion for literature. However, my path is atypical in the context of French Studies majors in that I did Core French as opposed to French Immersion in school. Despite my Core French background, however, I was placed in the advanced course designed for students with an Immersion background based on a comprehensive placement test that measured literacy and oral comprehension skills. My experience with language education birthed the following broad questions: how is formal language education planned, enacted, and experienced? How are the various methods conducive to bilingualism in all of its forms – reading, writing, listening, and speaking?

French as a Second Language programming is realized in many different ways in Canada to accommodate various learning abilities, interests, and second language passions for students. School boards within Ontario, for example, offer Core French at the academic (university-stream) and applied (college-stream) levels, Extended French, and French Immersion. The Core and Extended French programs tend to begin in the fourth grade (Ministry of Education, 2013a). French Immersion, on the other hand, is offered as an early entry program in kindergarten or the first grade, middle entry in fourth grade, or late entry in seventh grade (Geva & Clifton, 1994). The focus of this study is on exploring the differences between Core French and French Immersion, with the purpose of looking specifically at reading comprehension in the two groups. These two groups were selected because they would show the greatest amount of difference in their skills

due to the vast difference in the amount of instruction they received prior to university.

The goals of the Core program in the 1998 and 2000 curricula under which my participants studied were to engender a basic comprehension of the language itself; by design, the Core French program was not conducive to extensive practice in French, and certainly not as much as a typical French Immersion course at the same grade level. By contrast, French Immersion allows students to practice extensively both literacy and oral communication skills. The Immersion program encompasses a more in-depth and integrative look at French. In a study on Early French Immersion motivation, Wesely (2009) describes the program as being less about the study of language and more about the study of the culture; students learn regular curriculum such as science and history in French, as well as the language through exploration of cultural pieces like art and novels.

In order to enroll in a grade 9 Core French course, students need to have completed a minimum of 600 hours in French instruction. By contrast, enrollment in a French Immersion course is contingent on having completed a minimum of 3800 hours in French instruction (Ministry of Education, 1998a). By virtue of the fact that Immersion students would have spent six times longer studying language and curriculum in French, it follows that their skills would generally be stronger in all domains of language – listening, speaking, reading, and writing.

The old elementary curricula for each of French Immersion and Core French showed differences in specific expectations. In the Immersion curriculum, the specific expectations were divided into listening and speaking, with an emphasis on applying knowledge and language conventions in a variety of contexts (Ministry of Education, 2001). By contrast, the Core program had a very generic outline of oral communication

expectations and did not split the expectations into listening and speaking (Ministry of Education, 1998b). One may speculate that although oral communication was an important aspect of Core French instruction, the generic guidelines for it and the fact that it was not split into listening and speaking could have resulted in less of a focus on oral communication in all of its forms, possibly creating a stronger focus on literacy. The aims of these curricula were to give to students the skills that they needed to communicate in French. How, then, are these skills different once the initial programming in school is completed? For example, what are the differences in reading skills for students?

Key terms

The inspiration for this study comes from the Simple View of Reading, a theoretical model of reading comprehension first articulated by Hoover & Gough (1986). This framework is based on the concept that listening comprehension, decoding, and reading comprehension are all highly connected, and that without the former two skills, reading comprehension cannot exist. According to Kirby & Savage (2008), listening comprehension "represents all of verbal ability, including vocabulary, syntax, inferencing and the construction of mental schemas" (p. 76). Gough & Tunmer (1986) suggest that decoding is made up of two parts: word-recognition and letter-sound correspondence – essentially, it is the ability to see a word and then to connect its letters to the way it sounds. Reading comprehension is very simply the ability to make meaning out of something that is read.

Purpose

The purpose of this study is to explore how reading comprehension compares between groups who have completed two different French as a Second Language

programs: Core and French Immersion. This study does not discount the value of any of the programs that are to be studied. Rather, it aims to see how reading comprehension differs between specific groups of learners.

This research study aims to contribute to the field of second language acquisition by offering insight on how the two main language programs in anglophone Canada prepare students differently in reading comprehension. The study also suggests ways in which these programs affect language skills and prepare students after the programs end in an intensified university setting. Finally, this study fills the gaps in the research regarding the Simple View of Reading by providing a perspective from adult learners of a second language within a university setting.

Thesis organization

This thesis is organized into five separate chapters. The first and present chapter introduces the topic as well as implications for the populations it aims to study. Chapter Two is a review of the literature that looks specifically at the Simple View of Reading and the relationship between listening comprehension, decoding, and reading comprehension. Chapter Three describes the methodology of the study, including participants, measures, data collection and analysis. Chapter Four details the results of the study. Chapter Five is a discussion of the skills within groups and the way in which the Simple View of Reading plays into reading comprehension, followed by the limitations and future directions of this type of research and a concluding statement.

Chapter 2

Literature Review

The Simple View of Reading

An important theory in the study of reading comprehension is The Simple View of Reading. In Kirby & Savage's (2008) paper on The Simple View of Reading (henceforth to be referred to as SVR), a "reading war" of sorts is described where some theorists argue that effective reading instruction includes systematic and explicit code-emphasis focus on letter-sound connections, fostering the ability to decode. In contrast, some researchers, argued in favour of the 'Whole Language' approach, in which exposure to books and listening to skilled readers read aloud leads children naturally and organically to reading for meaning (Kirby & Savage, 2008). The Simple View of Reading looks at reading comprehension as the product of listening comprehension and decoding. The researchers describe listening comprehension as representative of all verbal ability, including vocabulary, syntax, inference, and grammar (p. 76). This theory forms the basis of the study and of the research questions. Although research has been done in the context of second language reading and the Simple View of Reading, there is a gap in the research where adulthood second language reading is concerned. The samples of the previous studies discussed in the literature review are primarily relevant for elementary to middle-school aged learners. One guiding question for this study, then, is how does the Simple View of Reading predict adulthood reading comprehension in a second language, once the basic second language program is completed at the high school level?

Gough and Tunmer (1986) first explored the Simple View of Reading in an effort

to clarify the debate about the relationship between decoding skill and reading comprehension. The researchers suggest that the importance of decoding goes beyond simply "sounding out" a word; its value lies in how, over time with reading experience, it leads to quick and accurate word recognition processes. This gives rise to the Simple View of Reading model where reading comprehension is the product of decoding and listening comprehension ($RC = d \times lc$); reading comprehension cannot exist without both, and as such, those who have reading comprehension must have at least some decoding and some listening comprehension capabilities.

Gough continued to study this theory in a study with Hoover (Hoover & Gough, 1990) in a secondary analysis. The secondary analysis uses 210 of the 254 participants from the primary analysis. These students were tracked from kindergarten to the fourth grade, with fewer students being retained each successive year. The researchers in the first analysis had used a pseudoword decoding measure and additional comprehension tasks where participants responded to materials they either listened to or read before.

The researchers had three predictions: first, that decoding and listening comprehension would be significant contributors to variation in reading comprehension; second, that those who were less-skilled in reading comprehension would also have poorer decoding and listening comprehension abilities; and third, that as skill in decoding increased, linear relationships between listening and reading comprehension would prove to have positive slope values increasing in magnitude and constant intercept values of zero. The first and last predictions proved to be supported by the findings of the secondary analysis, though the second prediction was not supported.

According to the researchers, this creates some implications for reading instruction.

For example, they suggested that instruction that advances skills in either decoding or listening comprehension would also advance skills in reading comprehension as well. The findings from this secondary analysis offer weight to the Simple View of Reading theory in the way that they show a strong connection between these three essential reading skills.

Prior to looking at studies that specifically use the Simple View of Reading as a model to explain reading comprehension, it is important to do a review of studies that use each part of the Simple View of Reading separately in order to contextualize and support the importance of each skill. This section of the literature review begins with the 2009 study by Butler & Haruta, which compared academic oral proficiency with reading performance between two groups. The first comparison was between students who were deemed struggling readers and those who were identified as strong readers. The second comparison was between those who were learning English as a second language, and those who were native English speakers. The goals of the study were to examine fourth grade students' (about 10 years old) reading comprehension strategies and the related cognitive processes. All 61 participants had been enrolled in the same English-only California school district from which they were collected since kindergarten. Approximately two-thirds of the participants were English Language Learners, and the remaining third spoke English as their first language. These groups were then further broken down into strong readers and struggling readers using the Stanford 9 reading test. Additional assessment of participants' reading comprehension skills was done using a local school district's reading test. Both groups were scored with the same criteria. The researchers chose to assess the students in their science class and the instruments were

constructed to reflect material relevant to the topics in their science class.

Oral comprehension was assessed using a set of experimental activities created by the researchers that were: cognitively demanding and specific to science class rather than generic casual conversations; authentic, meaning they reflected typical oral interactions between students and teachers in science; used vocabulary and grammar typically found in a science class; and designed for learning as opposed to simply measuring the participants' oral proficiency. The oral activities included comprehension checks, experiments where they listened to oral instructions, and a reflection. The researchers found that there was a strong link between oral academic language and reading comprehension, but the differences were between strong readers and struggling readers. The researchers found that the difference between native English speakers and English Language Learners was in formal aspects of oral language where native English speakers showed that they were much more comfortable with complex structures than the English Language Learners.

Butler & Hakuta's (2009) study fits the context of the present study as it looks at how oral proficiency – both speaking and listening – are tied in together with reading proficiency. Although the study looks at specific types and contexts of language, it still links strong oral language skills to strong reading comprehension skills. Butler and Hakuta's (2009) study differs from the present study in its sample. Both groups received similar amounts of English-language instruction from an early grade but the participants from the L2 group were either born in the United States of America in a foreign language home, or were born elsewhere. This group could almost be compared to the French Immersion group where the participants' language of instruction at school was different

from the language of communication at home. From this perspective, the study shows that despite linguistic background differences, oral proficiency was a factor in students' reading success.

Cronin (2014) also looks at the relationship between oral language and reading comprehension, as well as decoding. She studied the relationship between oral language competencies and reading comprehension, and between decoding and reading comprehension among high-functioning children with autism. Participants were divided into two groups: one group included elementary-aged children (7 years old to 9 years old; $n=9$). The other group included children who were middle-school aged (10 years old to 13 years old; $n=4$). In her sample of 13 high-functioning children with autism, Cronin ran the Clinical Evaluation of Language Fundamentals (CELF-4) to measure linguistic competencies such as phonological and syntactic awareness, the listening comprehension subtest of the Oral and Written Language Scales (OWLS) measure, the Peabody Picture Vocabulary Test (PPVT-4) to measure listening comprehension and receptive vocabulary, Woodcock Reading Mastery Tests to measure reading comprehension, and the Test of Word Reading Efficiency (TOWRE) to measure decoding skills. Correlations were run between the oral language components of phonology, semantics, and syntax with decoding and reading comprehension for the purpose of analyzing the strength of the relationships. Among many significant correlations, the researcher found that there was a strong correlation between decoding and reading comprehension. In addition, the researcher did not find significant correlations between oral language skills and decoding or oral language skills and reading comprehension in her sample.

In the context of the present study, Cronin's (2014) methods and findings are

important: first, it supports the use of the PPVT (Dunn & Dunn, 2007) as a measure of listening. Second, it links decoding and reading comprehension but not listening comprehension and reading comprehension, which is inconsistent with previous literature such as Butler and Hakuta's (2009) study, but which could still be interpreted as a valid finding. The findings in the study by Cronin (2014) must be taken with caution, however, due to the application of parametric statistics in a very small sample size relative to the number of measures and to the scope of the study.

The individual contributions of listening comprehension and decoding to reading comprehension have been contextualized above. In light of the Simple View of Reading – the inspiration for this study – a review of the current literature regarding bilingual readers and the Simple View of Reading follows. A recent study published in *The British Psychological Study* by Sadeghi, Everatt, McNeill, & Rezaei (2014) looks at English-Persian bilingual children and the Simple View of Reading. Similar to the study by Butler & Hakuta (2009), the participants from the study by Sadeghi et al. (2014) studied in English at school (in either Australia or New Zealand) but communicated in Persian at home and at a weekend foreign language school. The mean age of the participants was 12 years old. Reading comprehension, listening comprehension, vocabulary, and pseudoword decoding were all assessed in both English and Persian. The results supported the Simple View of Reading in analyses of both English and Persian data. Listening comprehension and decoding were slightly more predictive of reading comprehension for this bilingual sample than they were for a monolingual Persian-speaking sample in a previous study; Sadeghi et al. (2014) emphasize this finding especially for listening comprehension.

Verhoeven & van Leeuwe (2011) also looked at the simple view of second language reading. A total of 1687 children in primary school were involved in their longitudinal study, 23% of whom learned Dutch as an L2. All students participated in the phonics-based first-grade reading program. Initial data collection began when the students were in the first grade and continued through to when the students were in the sixth grade. Data on decoding and listening comprehension were collected through grades 1, 3, and 5, and reading comprehension data were collected in grades 2, 4, and 6. The researchers found that word decoding and listening comprehension were both strong predictors of reading comprehension. In addition, the researchers found that although the L2 readers made significant progress in word decoding to the point of being able to catch up to their native Dutch-speaking peers, there remained differences when listening comprehension and reading comprehension were taken into account together (Verhoeven & Van Leeuwe, 2011). Most importantly in the context of this study, the researchers found that the data were in support of the Simple View of Reading in both the L1 and L2 learners. The findings of this study opened the doors for future research on the Simple View of Reading but also on how word decoding and listening comprehension both independently relate to reading comprehension.

The Simple View of Reading was also used as the theoretical framework in a study of Korean learners of English. Kang, Choi, Lee, & Nam (2011) collected data from 90 fifth grade students who had been learning English three hours per week for two years, which is similar but not the same as the minimum amount of Core French instruction in Ontario. The children participated in four measures: reading comprehension, decoding, listening comprehension, and English learning experience (Kang et al., 2011, p. 30). The

researchers found that in addition to significant correlations between reading comprehension and each of word decoding and listening comprehension, there was also a significant correlation between word decoding and listening comprehension, suggesting then that the two are intertwined. In contrast to Verhoeven & Van Leeuwe (2011), the researchers found using hierarchical regression analysis that although both decoding and listening comprehension were strong predictors of reading comprehension, decoding was a slightly stronger predictor. The researchers also addressed an important issue in their limitations, noting that it is not known if students' heavier dependence on English decoding was due to limited language input, low proficiency, or both. Thus, it would be important in future research to assess language input and English proficiency as variables when discussing listening comprehension and how that may affect reading comprehension.

Morrison's (2004) study looked at reading comprehension, its associated skills, and comprehension monitoring in university-aged French as a second language participants. The researcher conducted a study that looked at reading comprehension of fifty-two undergraduate students from both French Immersion and Core French. Morrison's (2004) study looked closely at how comprehension monitoring – a student's awareness of the degree to which she or he might understand a particular text – compared with reading comprehension of these two groups, and it is interesting to note that although there was not a significant difference between French Immersion and Core French students on the L2 reading test, the participants with the French Immersion background reported that they understood more in a follow-up question on the text. Also, this study compared L1 comprehension monitoring to L2 comprehension monitoring in order to examine any

cross-linguistic relationships.

In the way of measures, the researcher used the Nelson-Denny Reading Test as the English reading comprehension task, which measures student ability in the areas of vocabulary development, reading comprehension, and reading rate. The French version of TESTCan (1994) was used to measure French reading comprehension skills. In addition to the reading comprehension tasks, the researcher used a multiple-choice cloze vocabulary test from TESTCan to measure lexical and morphosyntactic knowledge, as well as the comprehension monitoring tasks, the results of which served as a major point of comparison with reading comprehension. Finally, error-detection tasks were used that looked at macro-level and micro-level errors. All variables studied were measured in both L1 (English) and L2 (French).

Outside of the comprehension monitoring and reading comprehension tasks, the researcher found that there were important differences with respect to the variables that predict French reading comprehension. French Immersion participants, who had shown stronger language knowledge in one of the measures used in the study, relied strongly on said knowledge to aid in reading comprehension. Core French students relied more heavily on strategy transfer from the L1 to aid in reading comprehension. As such, their reading comprehension and proficiency, although at the same level, were explained differently (Morrison, 2004). The fact that participants were enrolled in university-level French courses would indicate not only a desire and motivation to learn French, but also possibly an aptitude for it. This would be especially significant in consideration of the participants with the Core French background – despite having significantly less exposure to French than their Immersion peers prior to university, there still existed an

enthusiasm about continuing in French. It is, however, fascinating how both groups approached the reading comprehension task differently, and also how the results show that although both groups showed statistically similar reading comprehension skills, that the explanation for these skills was different for each group.

Oral language comprehension was the focus of the study by Kim & Phillips (2014) as well, though from the perspective of comprehension monitoring and inhibitory control. The researchers collected data from 156 children in kindergarten and first grade, and used both standard and experimental measures. An example of an experimental measure they used was a listening comprehension task where the participants listened to stories and were asked to answer questions about characters and events. The researchers suggested that this type of measure was chosen over expository texts because previous research suggested that comprehension increased with narrative texts as opposed to expository texts. This gives weight to the selection of measures in the current study, where narrative texts were favoured as opposed to expository tests. This piece will be discussed further in chapters three and five. The findings of Kim & Phillips (2014) were consistent with similar findings of Garcia & Cain (2014), which described the importance of proper selection of measures.

Garcia & Cain (2014) conducted a meta-analysis that focused on the importance of decoding skills to reading comprehension. The researchers acknowledged the Simple View of Reading framework as presented by Gough and Tunmer (1986). Garcia & Cain (2014) aimed, however, to understand better how decoding specifically contributed to reading comprehension performance. In this meta-analysis, the researchers collected articles whose focus was the relationship between reading comprehension and decoding

and they sought characteristics, commonalities, and differences between the methods of the researchers of those studies. Through these comparisons, the researchers looked closely at the strength of the relationship between decoding and reading comprehension and the contexts in which that relationship's strength increased or decreased. The researchers' literature base excluded studies whose samples were of specific populations (e.g., autism, adults, deafness, attention deficit/hyperactivity disorder, bilingual populations), studies dealing with teachers, studies not related to the reading of text, studies not in English, and single-case studies. 110 studies met the selection criteria.

There were several factors involved in moderating the strength of the relationship between decoding and reading comprehension. First, the researchers found that across all studies included in the meta-analysis, the strength of the relationship between decoding and reading comprehension decreased as samples got older. Next, the listening comprehension skills of the readers were shown to be factors in the decoding-reading comprehension relationship, adding weight to the Simple View of Reading theory whereby reading comprehension cannot exist without both decoding and listening comprehension (Kirby & Savage, 2008; Gough & Tunmer, 1986; Hoover & Gough, 1990). The characteristics of the assessments of decoding and reading comprehension also proved to be important moderators of the relationship between the two variables. For decoding, real word reading proved to be more predictive of reading comprehension than other measures such as speed of reading and pseudoword reading, which is inconsistent with Gough & Tunmer (1986) who preferred pseudoword reading. Garcia & Cain (2014) did not find speed of word reading to be as good a predictor of reading comprehension compared to word reading accuracy.

Garcia & Cain (2014) also found that two characteristics of the reading comprehension assessment influenced the strength of the relationship between decoding and reading comprehension. The nature of the reading comprehension measure was important – the correlation was higher when the reading comprehension measure comprised narrative texts instead of expository texts. In addition, reading comprehension texts that were read silently were more strongly correlated with decoding than measures where the participant was to read a text aloud.

Garcia & Cain (2014) concluded their meta-analysis by stating that to get a good picture of the relationship between decoding and reading comprehension, it would be important to use various measures of decoding and different types of reading comprehension assessments. This means that the careful selection of materials is critical to the success of the present study to ensure that hypotheses can be tested and the answers to my research questions can be sought fairly, reasonably, and accurately.

Keenan, Betjemann, & Olson (2008) found similar results in their study, showing that reading comprehension tests vary in the skills that they assess and that depending on the type of measure used and the skill that it was assessing, decoding and listening comprehension changed in their prediction of the variances in reading comprehension. This finding adds weight to the previously described necessity to choose tasks that cover a breadth of closely related skills for the purpose of assessing one broad skill such as reading comprehension. They found that the strength of the relationships between decoding and reading comprehension and listening comprehension and reading comprehension were contingent upon the types of assessments used. For example, decoding accounted for variance in reading comprehension tasks that were read silently,

as opposed to tasks that were read aloud where decoding was shown not to be a significant predictor of reading comprehension.

Synthesis and Research Questions

The difference of 3200 hours of French instruction received by French Immersion students in comparison to Core French students may result in differences in all skills related to language and learning. In using the Simple View of Reading as a model to study these differences, I had three questions about how these two different groups would reveal differences in reading:

1. How do French Immersion students compare to Core French students in French reading comprehension?
2. How do listening comprehension and decoding skills compare within groups?
3. How does the Simple View of Reading model reading comprehension for students from these two programs?

The first hypothesis based on the research reviewed above is simply that French Immersion participants would have higher reading comprehension skills. The second hypothesis is that the Immersion group would show no differences in their skills due to having extensive practice in all domains of language but that the Core group would show better decoding ability due to the generic expectations for oral communication and the more specific expectations for literacy. Finally, the third hypothesis is that the Simple View of Reading would be a strong predictor of reading comprehension in a hierarchical regression analysis.

Chapter 3

Method

Recruitment

The recruitment process for my study took place at the university. There was one round of recruitment at the beginning of the fall semester and another at the beginning of the winter semester. Following the ethics approval, the French Studies department was contacted via email for the purpose of requesting opportunities to recruit participants for my study. As discussed, the most ideal participants for my study were first year students who had completed a grade twelve French course prior to entry into the French Studies program at the university. As the two major first year French courses are designed for and intended to support both Core and Immersion students separately, participants were invited from both courses. As it turned out, however, there were numerous Immersion students in the Core-designed class and Core students in the Immersion-designed class. In any case, 26 participants were recruited through direct in-class recruitment.

Following a brief face-to-face introduction to the study, including important points detailing the timing, location, compensation, and assurance of privacy and confidentiality, individual slips of paper were handed out to each student in the class. I explained that it was by no means necessary to complete the form, which asked for name and email and included a small description and acknowledgement of interest in participating in the study. Those who indicated that they were interested in participating in the study completed the form; those who were not interested in the study were asked to leave the form blank. I walked around with an envelope and asked students to fold their forms and drop them into the envelope whether the form was blank or filled. This was

done to ensure that student confidentiality, privacy, and sense of safety were prioritized in this step of the recruitment process. Through this method, 9 students who had done Core French were recruited and 11 students who had done French Immersion were recruited.

The next step in the recruitment process was via social media. In a Facebook group titled "Paid Research Studies at Queen's University", I posted a brief description of my study similar to the script I used in the in-class recruitment process (Appendix C). Through this method, I was able to get additional participants. Twitter was also used to invite interested parties in contacting me for more information on a compensated FSL Reading study. This method gained me a few more participants.

The final step in the recruitment process was through more in-class recruitment. I emailed the professor of a large first year teacher preparation course with three sections and she invited me to recruit from her classes. In these cases, I emphasized that anyone who had completed a grade 12 French course was invited to participate and that compensation was available. This rounded out the recruitment of participants for my study and I finished with 17 Core and 19 Immersion participants. Although I had projected 30 participants per group, due to time constraints and limit in resources, I decided to complete the recruitment and testing of participants at 17 and 19.

In every scenario where I recruited, there were several key issues that were stressed to ensure transparency and ethical recruitment of participants:

- Participants would be recorded using a digital audio recorder for some of the measures.

- Participants would be invited to participate in the study in private booked rooms at Stauffer Library or at Duncan MacArthur Hall.
- The study would last approximately one hour and a half (this was different in the first round of recruitment where participants were told that the study would last only an hour. Once data collection began after the first round of recruitment, we found that our initial estimate of the time requirement proved off by approximately 30 minutes. Therefore, additional compensation was made available to those who took more time on the study in these cases, and the time estimate was revised accordingly in the second round of recruitment).
- The study used two reading comprehension measures, two listening comprehension measures, and two word-reading measures.
- Participation in the study was 100% voluntary and participants had the option to withdraw, including the withdrawal of their consent to use their data, at any time.
- Ideal participants were Core or Immersion French studies in first year. However, to expand the possibilities and participant pool, I chose to allow participants from students in their second and third years of university as long as they had not completed a first year French course.
- Compensation was one \$5 gift card to Starbucks. As noted above, those recruited in the first round who took significantly longer than an hour were offered an additional \$2 in compensation, up to a second \$5 gift card for a second full hour of participation.

A fourth year undergraduate student in Psychology who was fluent in French acted as a trained research assistant for this study. As she was a teaching assistant for one

of the courses from which I recruited, we were very careful with the selection process to ensure that there were no confidentiality or privacy issues and that conflict of interest did not arise in the running of the study. She did not collect data from any student for whom she was a TA, nor did she know which of her students agreed to participate in the study.

Participant selection

We expanded our subject pool to include those who had simply completed a grade 12 French course, either Core or Immersion, and who graduated from high school fairly recently (first, second, and third years were the most desirable). Those who completed a grade 12 Extended French course all self-identified as Immersion and as such were included in this group. By the end of the selection process, 19 Immersion and 17 Core participants were included in the study. Two male participants and 34 females made up the pool. Thirty-three of the thirty-six participants were first year students who had graduated high school in June 2014. One participant graduated in 2011, and there were two who had graduated between 2011 and 2013. Their inclusion in the study was based on their not having completed a university French credit.

Other demographic information, although not analyzed, characterize the sample: twenty-two participants spoke only English and French, and the remaining fourteen spoke an additional language – the most common being Mandarin. Also, most participants came to Queen's University from the Greater Toronto Area and other parts of Southern and Eastern Ontario, and one participant came from Northern Ontario.

Exclusion criteria included those who grew up speaking French as a first language, those who did not complete a grade 12 credit in French, those who had graduated high school more than five years ago, and those who had already completed a

university French credit. The purpose of this was to get participants who were as close as possible to their high school level of French.

Measures

Six measures were administered in French to elicit data on reading comprehension, decoding, and listening comprehension. Participants' responses for both decoding tasks and one reading comprehension task were recorded using a digital audio-only recorder for the purpose of accurate and precise scoring afterward.

Measure #1: BELEC (Mousty, Leybaert, Alegria, Content, & Morais, 1994) is a word and pseudoword reading measure, selected to measure decoding skill. Participant responses were recorded for the purpose of verifying the time it took to complete each six-word list of words and for the purpose of ensuring consistency in the scoring of the test. Participants were asked to read the words in the lists from top to bottom – six words per list – as quickly but as accurately as possible. Participants flipped pages to get to the next set of words. BELEC included words and pseudowords in the same test, organized by word length, frequency, and complexity. Participants were given one point for a correct response, zero points for incorrect responses, and were timed from start to finish of each word list. At the end, the total number of points and the total number of seconds it took to complete the activity were recorded. There was no stop rule for this activity; participants were asked to complete the activity in its entirety.

Measure #2: The Wechsler Individual Achievement Test II (WIAT-II; Wechsler, 2005) was used for the purpose of collecting data for two skills: decoding and reading comprehension. As it is a lengthy and all-encompassing test, only three subtests were selected – two subtests to measure decoding skill, and one subtest to measure reading

comprehension. The WIAT-II reading comprehension task assesses a participant's reading comprehension skills through the oral reading of sentences, oral responses to questions about reading passages, and silent reading speed. This measure was also recorded for scoring at a later time. The stories ranged in type – some were fictional stories, one was a movie review, and some were recounts of historical or biological events. There were approximately five questions per story. Participants were given two points for full and comprehensive answers, one point for answers that were deemed to be 'on-the-right-track', or zero points for answers that were not correct. Participants' reading speeds for each story were also recorded and tallied up at the end of the measure. As well, participants were asked to read short sentences aloud and then to answer a few questions based on what they had read. There were 10 stories and 41 questions overall. The starting rule recommended in the manual would have required these participants to begin well into the test, at a point commensurate with their age. However, we made a decision not to apply the starting rule for this measure as the test is intended for use with French first language speakers and beginning at the recommended start point might have been too challenging. Thus, instead of starting at the point meant for adults, participants in this study were given practice items (which were not scored) that fell at the end of the Grade 5 segment. Then, participants continued from the Grade 6 starting point. Participants stopped when they hit the ceiling of four incorrect responses in a group of six items.

Measure #3: The Échelle de vocabulaire en images Peabody (ÉVIP; Dunn, Thériault-Whalen, & Dunn, 1993) was also used. This oral vocabulary test was used to as a measure of word-level listening comprehension. I read aloud a word and participants

chose a corresponding picture from a group of four (see Appendices E and H for examples). Testing was discontinued when participants answered incorrectly on six responses in a group of eight. In total, there were 70 questions. Participants received one point for a correct response and zero points for an incorrect response. These points were tallied at the end of the activity and a final score was calculated.

Measure #4: The WIAT-II decoding measures – *Lecture de mots* and *Décodage de pseudo-mots* – involve word reading and pseudoword reading respectively.

Participants were asked to read down a list of 131 words and 55 pseudowords. This activity did not have a time limit and it was recorded for accurate scoring at a later date. Regional accents were not counted as incorrect, despite a specific International Phonetic Alphabet guide for each word of the pseudo-word subtest. Participants were given one point per correct response or zero points per incorrect response. Totals for each part of this subtest were calculated and recorded separately.

Measure #5: TESTCan (The University of Ottawa, 1994) was used as an experimental measure for this study as it is comprehensive and tests for French competencies in both literacy and oral communication. It is a task used with second language learners. Two subtests of the TESTCan were administered to participants. The first was a listening comprehension task. Three pre-recorded clips were selected from the official TESTCan practice manual. The first two clips were dialogues between two people, and the third clip was an exposé of a health-related issue. Participants were given the list of multiple choice questions ahead of time, of which there were a total of sixteen questions with four possible responses each. Following approximately 30 seconds of review of the questions for each clip, the sheets with the questions were removed from

participants' view and they then listened to the corresponding clip. Participants then listened to the multiple choice questions and answers repeated back in a digital recording and circled the best responses – one per question. This measure took approximately ten minutes to administer. Participants were awarded one point per correct response and zero points per incorrect response.

Measure #6: The other subtest of the TESTCan French language test was the reading comprehension task. Two passages were selected – one in the form of a letter, and the other in a standard paragraph narrative format. Participants were asked to read the passages and then to answer multiple choice questions based on each respective passage. This subtest was scored out of ten – six points for six questions in the first passage, and four points for four questions in the second passage.

Demographic questionnaire: The final piece to tie up the delivery of the measures was a demographic questionnaire (see Appendix B). The major purpose of this was to ensure that all participants fit the selection criteria and to seek trends in those who completed Immersion and those who completed Core French. This data was not used in the analysis for the purpose of correlating demographic information to reading skills. Instead, it was largely used to characterize my sample.

Table 1 is a summary of the measures and what they are seeking:

Table 1. Summary of measures.

	Measure 1	Measure 2
Listening Comprehension	ÉVIP (Oral vocabulary test – single-word listening task)	TESTCan (Connected-text listening task)
Decoding	BELEC (word and pseudo-word reading)	WIAT-II (word and pseudo-word reading)
Reading Comprehension	WIAT-II (Silent and aloud-reading with oral multiple choice questions)	TESTCan (Silent reading with written multiple choice questions)

Data collection

Following the introduction into the room, participants were asked to read the Letter of Information (Appendix D). If the prospective participant agreed to be part of the study, s/he was asked to sign the consent form (Appendix D) before carrying on with the administration of the testing battery.

The very first activity for every participant was the BELEC word and pseudo-word reading activity - BELEC (Measure #1), which was chosen strategically as it is a simple word-level reading task that was decided to be a good introduction to the study. Participant responses were both recorded digitally and timed.

Following the BELEC, the WIAT-II reading comprehension activity (Measure #2) was administered. Participants practiced the task with the Grade 6 stopping point and then carried on with the Grades 9 to 12 section of the task. A lower-level passage was chosen because the official entry point for French-L1 adults was too high to establish an appropriate basal for these participants. As such, it was important to start slowly and simply to ensure confidence and comfort of the participant in the task. From there, the passages got more difficult. The instructions given to participants were as follows: in

indicated cases, passages were to be read aloud; otherwise, passages were to be read silently and were to be timed. In either case, when the participant had indicated that s/he was done reading the passage, between two and five questions based on the reading material were asked orally. Participants then used clues from the text to answer the questions. Participants were allowed to ask for the questions to be repeated, but English translations and rephrasing of the questions were not allowed.

Next, the ÉVIP (Measure #3, Appendix H) was administered. Participants all began at the same question, which was the 11 year-old entry question. This part of the test was selected as the beginning of the task because it was a good midway point between the juvenile and low-complexity words at the beginning and the high complexity and low frequency words at the end. In addition, because a standard basal was not established for my participants, it was decided that beginning at an early age's entry question would allow for participants to familiarize themselves with the task in a low-stress manner. The WIAT-II Decoding measures (Measure #4) were next. Participants were not timed on their completion of each word list.

Participants then listened to the TESTCan Listening Comprehension task (Measure #5), which was administered as described above: first, the participant saw the questions, then the questions were removed and the participant listened to the selection, followed by oral repetition of the multiple choice questions and answers. This activity took approximately ten minutes to administer.

The final task that was administered was TESTCan Reading Comprehension task (Measure #6), which was done independently at the very end of the session. Following this, participants were invited to fill out the optional demographic questionnaire

(Appendix B). At the end, participants were asked to sign for receipt of their Starbucks gift card.

Data analysis

SPSS Statistics 23.0 was used for the analyses of the data, which are described in detail in the fourth chapter of this thesis. Analyses that were run include descriptive statistics for the purpose of contextualizing the sample; correlations to see how each skill correlated with the others for the group as a whole and for each group separately; *t*-tests to test for the differences in the skills between the groups and within them to answer questions 1 and 2; and, finally, hierarchical regressions to test how the independent variables listening comprehension, decoding, and the Simple View of Reading could predict reading comprehension in the sample as a whole and then separately by group to answer question 3.

Chapter 4

Results

This study addressed three research questions: how do Immersion students compare to Core students in reading comprehension?; how do the two groups compare in their approach to the two skills associated with reading comprehension?; and, how does the Simple View of Reading model predict reading comprehension for these two groups? In the current section, data are analyzed to answer these questions. The study compared the skills within groups and as such, this chapter presents whole-group analyses as well as subgroup analyses.

Descriptive statistics

A total of 36 participants (Immersion, $n=19$; Core, $n=17$) took part in the study, which assessed decoding, listening comprehension, and reading comprehension in French. One Core participant, however, was excluded due to the fact that s/he was a native speaker of French. The key to this study was to study participants who only spoke French as a second language. The remaining 35 participants fit this criteria and the data was moved forward for analysis. Table 2 shows the descriptive data for the results of each group on each of the tests and their age.

Table 2. Descriptive statistics for all participants

	CORE					IMMERSION				
	<i>N</i>	<i>M</i>	SD	Min.	Max.	<i>N</i>	<i>M</i>	SD	Min.	Max.
Age	16	18.55	0.35	17.83	19.25	19	19.17	1.58	17.92	23.50
BELEC Words	16	39.69	6.41	24	48	19	42.58	5.72	29	48
BELEC Pseudowords	16	17.56	3.44	11	24	19	17.95	3.17	10	22
WIAT-II Words	16	108.25	10.42	84	125	19	115.21	6.59	101	127
WIAT-II Pseudowords	16	39.37	7.90	24	53	19	41.32	7.70	25	52
WIAT-II Reading	16	31.50	19.94	3	77	19	53.58	21.89	2	80
TESTCan Reading comp.	16	6.44	2.00	3	10	19	7.68	1.46	4	10
TESTCan Listening	16	10.62	2.47	7	15	19	11.74	2.66	7	15
ÉVIP Listening	16	107.88	12.80	93	141	19	120.32	17.05	92	142

Participants from the Core French group ($n=16$) generally scored lower on all measures according to the means. The least amount of difference occurred for the pseudoword decoding measures. Additionally, there was not much of a difference in the means between TESTCan (University of Ottawa, 1994) measures. The greatest

differences were in the ÉVIP and in the WIAT-II Reading Comprehension measure. *T*-tests are used further in this chapter to test for significance of these differences.

Composite scores and correlations

Following the descriptive statistics, *z*-scores were computed for the purpose of standardizing the data. Then, correlations were completed for the whole group ($n=35$) and for each group separately (Core French, $n=16$; French Immersion, $n=19$)

Table 3. Whole group correlations.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Program	*								
2. BÉLEC Decoding Words	.23	*							
3. BÉLEC Decoding Non-Words	.06	.82**	*						
4. WIAT Decoding Words	.38*	.81**	.77**	*					
5. WIAT Decoding Non Words	.13	.84**	.84**	.82**	*				
6. TESTCan Listening	.22	.46**	.38*	.46**	.50**	*			
7. ÉVIP Listening	.39*	.45**	.41*	.50**	.43*	.20	*		
8. TESTCan Reading comp.	.35*	.44**	.32	.44**	.40*	.45**	.16	*	
9. WIAT Reading comp.	.47**	.40*	.35*	.60**	.42*	.60**	.42*	.38*	*

$n=35$ *. $p < 0.05$; **. $p < 0.01$

Table 4. Correlations by group.

	1	2	3	4	5	6	7	8
1. BÉLEC Decoding Words	*	.76**	.79**	.82**	.37	.61**	.22	.20
2. BÉLEC Decoding Non-Words	.90**	*	.74**	.80**	.28	.72**	.20	.21
3. WIAT Decoding Words	.84**	.88**	*	.84**	.39	.60**	.34	.31
4. WIAT Decoding Non-Words	.87**	.88**	.85**	*	.42	.60**	.39	.29
5. TESTCan Listening	.51*	.48	.84**	.58*	*	.11	.29	.55*
6. ÉVIP Listening	.09	.00	.23	.13	.17	*	.05	.18
7. TESTCan Reading comp.	.52*	.44	.36	.39	.53*	.02	*	.36
8. WIAT Reading comp.	.51*	.57*	.74**	.59*	.62*	.47	.18	*

Core French group is represented under the diagonal and $n=16$; Immersion is represented above the diagonal and $n=19$.

*, $p < .05$; **, $p < .01$

In all cases, all decoding measures were correlated ($p < 0.01$), justifying the creation of a composite score by averaging the scores of BELEC words and pseudowords (Mousty, Leybaert, Alegria, Content, & Morais, 1994) and WIAT-II words and pseudowords (Wechsler, 2005). In the case of reading comprehension, both measures were correlated when taken as a whole group ($n=35$) but not when separated by group. In this case, I created a composite score because the two measures were clearly correlated at the whole group level ($p < .05$), and likely would have been correlated in the subgroups had they been larger. Thus, a reading comprehension composite score was created by averaging the z-scores of WIAT-II Reading Comprehension (Wechsler, 2005) and TESTCan Reading Comprehension (University of Ottawa, 1994).

A composite score was not created for listening comprehension as the correlation between the TESTCan Listening Comprehension (University of Ottawa, 1994) and the

Échelle de Vocabulaire en Images Peabody (Dunn, Thériault-Whalen, & Dunn, 1993) was nonsignificant.

Test for between-group and within-group differences

To test for between-groups differences as per the first question of the study, I conducted four t-tests using the composite scores, ÉVIP, and TESTCan Listening Comprehension. I set alpha to 0.01 to control for Type I error. Table 5 shows that only the reading comprehension composite scores were significantly different between groups.

Table 5. Independent samples test for the whole group.

	t	df	Sig. (2-tailed)	Mean Difference
Decoding Composite	-1.27	33	.215	-.40
Reading Comp. Composite	-3.27	33	.003	-.81
ÉVIP Listening Comp.	-2.40	33	.022	-12.44
TESTCan Listening Comp.	-1.27	33	.213	-1.11

n = 35; p < 0.01

The second question of the study asked how skills compare within groups considering the different educational preparation. Tables 6 and 7 are paired-samples *t*-tests that compare the skills within groups, showing that with alpha at 0.01, there were no significant differences in the scores.

Table 6. Paired samples test for the Core group.

	t	df	Sig. (2-tailed)	Mean Difference
Pair 1: Decoding and Reading	1.256	15	.228	.23
Pair 2: Decoding and ÉVIP	.674	15	.510	.20
Pair 3: Decoding and TC Listening	.075	15	.942	.02
Pair 4: Reading and ÉVIP	-.118	15	.908	-.03
Pair 5: Reading and TC Listening	-1.303	15	.212	-.21
Pair 6: ÉVIP and TC Listening	-.648	15	.527	-.18

n = 16; p < 0.01

Table 7. Paired samples test for the Immersion group.

	t	df	Sig. (2-tailed)	Mean Difference
Pair 1: Decoding and Reading	-.919	18	.370	-.19
Pair 2: Decoding and ÉVIP	-.951	18	.354	-.17
Pair 3: Decoding and TC Listening	-.062	18	.951	-.01
Pair 4: Reading and ÉVIP	.085	18	.933	.02
Pair 5: Reading and TC Listening	.859	18	.402	.18
Pair 6: ÉVIP and TC Listening	.484	18	.634	.15

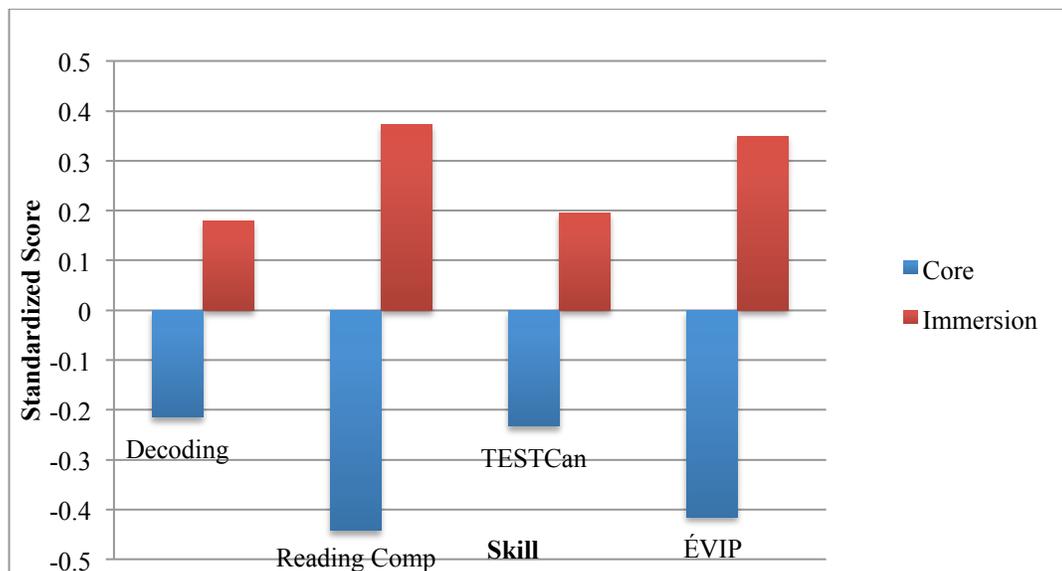
n = 19; p < 0.01

Tables 6 and 7 show that when one test was measured against another, there were not significant differences in the way that participants scored neither for reading comprehension, nor for listening comprehension, nor for decoding. This means that in the

Core group for example, where participants had overall much less practice in each of their skills than their Immersion peers, there were no significant differences in the skills, thereby disproving the second hypothesis and answering the second question of the study.

Figure 1 shows a comparison of the standardized scores for each group.

Figure 1. Comparison of standardized scores for Core and Immersion participants.



The averages show that participants with the Core background generally scored lower than their peers from French Immersion. The lowest differences appear to be in the TESTCan Listening Comprehension (University of Ottawa, 1994) and in decoding. Participants showed vast differences in scoring in reading comprehension (University of Ottawa, 1994). Although the descriptive data shows differences, *t*-tests showed that these differences were nonsignificant.

This study uses the Simple View of Reading as a model for understanding differences in reading comprehension, as per research questions 2 and 3. The SVR predicts that variance in reading comprehension is explained by both listening comprehension and decoding, and that additional variance is explained by the product

term of these constructs ($RC = lc \times d$; Hoover & Gough, 1990). The predictions of the SVR in this study were tested by hierarchical regression analyses. In what follows, I present the results first for the entire sample, and then separately by group. In each case, the order of entry for decoding and listening comprehension was alternated to inspect the amount of variance each explained when controlling for the other. Since there was no composite score for listening comprehension, separate sets of regressions were run with listening comprehension assessed by each of TESTCan Listening Comprehension and ÉVIP, and then the corresponding SVR product term in the third block.

Tables 8 shows the regression for the whole group using the Simple View of Reading product of *decoding x ÉVIP*. Table 9 shows the regression model for the whole group using the product term *decoding x TESTCan Listening Comprehension*.

Table 8. Linear regressions for the whole group predicting reading comprehension with listening comprehension assessed with ÉVIP

	Reading Comprehension			
	R ²	R ² Δ	Beta	SE
Model 1				
Decoding	.298	.298	.485*	.71
Listening	.307	.010	.064	.71
SVR	.342	.034	.193	.71
Model 2				
Listening	.121	.121	.064	.79
Decoding	.307	.186	.485*	.71
SVR	.342	.034	.193	.71

n=35; p < 0.05

Note: SVR = product term of decoding x ÉVIP

Table 9. Linear regressions for the whole group predicting reading comprehension with listening comprehension assessed by TESTCan.

	Reading Comprehension			
	R ²	R ² Δ	Beta	SE
Model 1				
Decoding	.298	.298	.231	.71
Listening	.472	.175	.543*	.62
SVR	.517	.045	-.226	.61
Model 2				
Listening	.396	.396	.543*	.66
Decoding	.472	.076	.231	.62
SVR	.517	.045	-.226	.61

n=35; p < 0.05

Note: SVR = product term of decoding x TESTCan

Table 8 shows that regardless of model, only decoding was a significant predictor of reading comprehension as evidenced by the standardized coefficients Beta. The R² Δ shows that when ÉVIP was used, listening comprehension accounted for approximately 10% or less of the variance in reading comprehension across both models, compared to decoding, which depending on the model, accounted for a significant 18% to 30% of the variance in reading comprehension. The product term d*ÉVIP was nonsignificant.

In comparison to Table 8, Table 9 shows that when TESTCan Listening Comprehension was used as the listening comprehension variable in the model, the listening comprehension beta was significant and decoding was not. When listening comprehension was controlled for, decoding only accounted for 7% of the variance in

reading comprehension. Additionally, in Model 1, listening comprehension accounted for 18% of the variance in reading comprehension once decoding was controlled for.

Tables 10 and 11 compare regression models for each group separately. The tables are separated by listening comprehension (Table 10 for ÉVIP and the product term *decoding x ÉVIP*, and Table 11 for TESTCan Listening Comprehension and the product term *decoding x TESTCan Listening Comprehension*).

Table 10. Linear regressions by group predicting reading comprehension with listening comprehension assessed by ÉVIP

	Core				Immersion			
	R ²	R ² Δ	Beta	SE	R ²	R ² Δ	Beta	SE
Model 1								
Decoding	.470	.470	.641*	.57	.128	.122	.475	.69
Listening	.510	.040	.156	.57	.139	.017	-.185	.71
SVR	.556	.046	.221	.56	.140	.000	.060	.73
Model 2								
Listening	.079	.079	.156	.75	.021	.021	-.185	.73
Decoding	.510	.430	.641*	.57	.139	.118	.475	.71
SVR	.556	.046	.221	.56	.140	.000	.015	.73

n=16 for Core group; n=19 for Immersion group; p < 0.05

Note: SVR = product term of decoding x ÉVIP

For the Core group ($n=16$), decoding was a significant predictor of reading comprehension with a standardized coefficient Beta of .641. Neither listening comprehension nor the product term of *decoding x ÉVIP* were significant predictors of reading comprehension for the Core group. For the Immersion group ($n=19$) neither

listening comprehension, nor decoding, nor the product term were significant predictors of reading comprehension.

Table 11 uses TESTCan Listening Comprehension as the listening comprehension variable in the regression.

Table 11. Linear regressions by group predicting reading comprehension with listening comprehension assessed by TESTCan.

	Core				Immersion			
	R ²	R ² Δ	Beta	SE	R ²	R ² Δ	Beta	SE
Model 1								
Decoding	.470	.470	.482*	.57	.122	.122	.048	.69
Listening	.665	.196	.478*	.47	.293	.170	.608*	.64
SVR	.683	.018	.148	.47	.546	.254	-.528*	.53
Model 2								
Listening	.545	.545	.478*	.53	.268	.268	.608*	.63
Decoding	.665	.120	.482*	.47	.293	.024	.048	.64
SVR	.684	.018	.148	.47	.546	.254	-.528*	.53

n=16 for Core group; n=19 for Immersion group; p < 0.05

Note: SVR = product term of decoding xTESTCan

These models using TESTCan Listening Comprehension and the product term *decoding x TESTCan Listening Comprehension* show the most significant findings out of all the models. For the Core group ($n=16$), decoding and listening comprehension proved to be significant predictors of reading comprehension, with decoding predicting 47% of the variances in reading comprehension and listening comprehension predicting 20% of the same in Model 1 once decoding was controlled for. In Model 2, listening comprehension accounted for 55% of the variances in reading comprehension and

decoding 12% once listening comprehension was controlled for. For the Core group, the Simple View of Reading was not a significant predictor of the variances in reading comprehension.

In comparison to the Core group, the Immersion group's ($n=19$) listening comprehension was a significant predictor of reading comprehension with a standardized coefficient Beta of .608; decoding, however, was not a significant predictor of reading comprehension for this group. Instead, the Simple View of Reading model proved to be a significant predictor of reading comprehension for this group; it is the only model in which SVR was significant in the present study. Interestingly, the coefficient is negative ($B=-.528$), though this could be due to a suppression effect. Statistical suppression occurs when an independent variable has a low correlation with the dependent variable but it suppresses the error term of the other variables in the model and, although not being a sound predictor in itself, increases the overall variance explained. Once decoding and listening comprehension were controlled for, this model suggests that the Simple View of Reading – that is, the product of listening comprehension and decoding – accounted for a significant 25% of the variances in reading comprehension; this is evidence of suppression, since one component of the interaction term, decoding, was not a significant predictor, even when entered in the first step of the model.

To sum up the results, for the whole group ($n=35$) the variables that significantly predicted reading comprehension according to the regression models were dependent on how listening comprehension was assessed. Listening comprehension proved to be a significant predictor of variances in reading comprehension when TESTCan Listening Comprehension was used, and decoding proved to be a significant predictor of reading

comprehension when ÉVIP was used to assess listening comprehension. When the groups were separated into Core (n=16) and Immersion (n=19), the statistics told a different story: for the Immersion group, none of the variables entered predicted reading comprehension when ÉVIP was used to assess listening, and only listening comprehension was a significant predictor of variances in reading comprehension when TESTCan Listening Comprehension was used. For the Core group, only decoding predicted reading comprehension when listening comprehension was assessed by ÉVIP, whereas both decoding and listening comprehension explained variances in reading comprehension when TESTCan Listening Comprehension was used. Additionally, there was much less variance explained for the Immersion group than for the Core group (in Table 9 for example, compare 29% of the variance in reading comprehension in the former group to 67% of the variance in the latter group). Finally, the SVR product term did not improve the ability of the models to account for variance in reading comprehension, except spuriously in a case of statistical suppression.

Chapter 5

Discussion

The purpose of this study was to understand the differences in reading skills and in the way two different groups of French language learners approached reading comprehension. The first question asked, how do Immersion students compared to Core students in reading comprehension? The second question asked, how do the associated skills – listening comprehension and decoding – compare within the groups? The Simple View of Reading suggests that reading comprehension is a product of listening comprehension and decoding, and both must exist for a reader to have reading comprehension (Gough & Tunmer, 1986; Hoover & Gough, 1990; Kirby & Savage, 2008). As the study used the Simple View of Reading as its theoretical model whereby reading comprehension is the product of decoding and listening comprehension, the third question asked how the Simple View of Reading model could predict reading comprehension in adult French as a second language learners – a group that has not often been studied in relation to the Simple View of Reading.

This chapter begins with a discussion of the findings for the whole group and then for each group separately. These sections are structured around a cross-case analysis with the literature revisited from the second chapter of this thesis. Finally, this chapter ends with limitations, implications for research and future directions, and the conclusion.

Skill performance

The first two questions posed in this thesis are connected. Essentially the goal was to measure three linguistic skills: reading comprehension, decoding, and listening

comprehension and then to compare the results within groups. My first hypothesis was that the students who attended French Immersion programming would outperform the Core French students in each skill. The second hypothesis was that within the Core French group, decoding skill would be significantly higher than listening comprehension skill. Figure 1 and Tables 4, 5, and 6 in Chapter 4 show the differences in standardized scores for each skill. Although the Immersion group appeared to perform better than the Core French group in all skills, conservative statistical comparison where $p > 0.01$ showed that the only significant difference was in reading comprehension, which supports the first hypothesis. Interestingly, this finding is inconsistent with that of Morrison (2004), who found that there were no significant differences between Core French and French Immersion university students in reading comprehension skills. The second hypothesis was not supported by the results of the paired samples *t*-tests.

There were notable descriptive differences between Core and Immersion students that may have reached significance with larger samples. It is interesting to speculate on potential reasons for these differences. The initial findings in the correlations and overall scores were unsurprising as Immersion participants had spent significantly more time overall in French instruction. By contrast, Core French participants typically did one section of French language per day at most and as such would not have had as much time practicing the various aspects of the language (Ministry of Education, 1998ab; Ministry of Education 2001). Interestingly, only differences in reading comprehension were significant. Participants in the Immersion program by contrast would have spent nearly six times more time in French instruction, which could explain the lack of difference

between decoding and listening because participants simply had strong preparation overall in all domains of language learning over an extended period of time.

The Simple View of Reading

The primary focus of this study was to test the Simple View of Reading, a theory that suggests that reading comprehension is the product of decoding and listening comprehension (Gough & Tunmer, 1986; Hoover & Gough, 1990; Kirby & Savage, 2008). Using this model, the study explored the relationship between the Simple View of Reading and second language reading skills. Since it was not possible to have one composite score for listening comprehension, analyses were done for TESTCan Listening Comprehension (University of Ottawa, 1994) and for ÉVIP (Dunn et al., 1993) separately. In addition, two Simple View of Reading variables were created using TESTCan Listening Comprehension and ÉVIP.

Overall group performance

The third question that this study answered was how the Simple View of Reading predicted reading comprehension. In order to test for the relationship between the Simple View of Reading and reading comprehension in these two groups both separately and as a whole, three sets of regressions with two models each were conducted. The regressions involved decoding in the first block and listening in the second block in the first model and one of the two SVR variables (either *decoding x TESTCan Listening Comprehension* or *decoding x ÉVIP*) in the third block. The second model had either ÉVIP or TESTCan Listening Comprehension in the first block and decoding in the second block, with the corresponding SVR variable in the third block. When TESTCan Listening

Comprehension was selected as the listening comprehension variable, it predicted reading comprehension more than decoding for the whole group.

The opposite was true for ÉVIP. In all of the regressions done, the standardized coefficient Beta was never significant and as such, it cannot be said that listening comprehension assessed by ÉVIP was a significant predictor of reading comprehension in my study. However, in all overall group analyses where ÉVIP was used as the listening comprehension variable, decoding was interestingly a significant predictor of reading comprehension, which is consistent with the study by Cronin (2014), who used the English version of ÉVIP to assess listening comprehension and found that it was not a significant predictor of reading comprehension.

In comparison, when TESTCan Listening Comprehension was used as the listening comprehension variable, both decoding and listening comprehension were significant predictors of reading comprehension. This is more consistent with previous research that showed both to be significant predictors, such as the studies by Kang et al. (2011) and Sadeghi et al. (2014).

The nature of the listening comprehension measures could explain why one was a better predictor of reading comprehension and the other was not. First, although ÉVIP is often used as a listening comprehension task, it differs greatly from the TESTCan Listening Comprehension task. In the ÉVIP task, participants listened to one single word and pointed out the corresponding picture from a group of four pictures in an easel. In the TESTCan Listening Comprehension task, participants listened to a narrative or an expository passage of approximately 100 to 200 words and then responded to multiple choice questions posed orally. Thus, TESTCan Listening Comprehension could have

been a better predictor of listening comprehension because it was a listening comprehension task in a truer form.

The Simple View of Reading as proposed by Gough and Tunmer (1986) was hypothesized to be relevant to second language reading acquisition, as it was for Kang et al. (2011), Erdos et al. (2010), and Verhoeven & van Leeuwe (2012). In looking at whole-group results of this study, the Simple View of Reading did not appear to be a significant predictor of the variances in reading comprehension at all, neither when using TESTCan Listening Comprehension as the listening comprehension variable nor when using ÉVIP for the whole group. The results of this study were inconsistent with previous studies in which the Simple View of Reading predicted reading comprehension for second language speakers.

The small sample size is the likeliest reason why the Simple View of Reading was not a significant predictor of reading comprehension in the present study, especially considering that the results of this study are exactly contrary to findings of other studies. There are also other speculative reasons why the Simple View of Reading model was not a significant predictor of reading comprehension for the whole group. First, the cited studies included elementary-aged students as participants. In contrast, the present study attempted to fill the gaps in the research by using a sample of adult participants who had already completed their initial second language programming. The contrast in timing of participants' reading acquisition could be a reason why the Simple View of Reading was not a predictor of reading comprehension in the current study as compared to previous studies in which it was; it is possible that the Simple View of Reading is simply a better predictor of reading comprehension in earlier readers as opposed to advanced readers

whose skills have become automated. This is consistent with findings by Garcia & Cain (2014) in their meta-analysis of studies looking at the relationship between decoding and reading comprehension. They found that the relationship between the skills was weaker as participants grew older. One may speculate then that the Simple View of Reading, of which decoding is half of the equation, would have a reduced effect in an older sample as skills became more automated.

Core French subgroup

Overall, Core participants' ($n=16$) reading comprehension was predicted more often by decoding than by listening comprehension, especially when listening comprehension was assessed by ÉVIP. In the Core group where ÉVIP was the listening comprehension variable, the analyses showed that decoding was the only significant predictor of reading comprehension and listening comprehension did not account for a significant portion of the variances in reading comprehension.

The Core group ($n=16$) results echoed the whole group results ($n=35$). Decoding was the most significant predictor of reading comprehension for this Core group, including when TESTCan Listening Comprehension and the corresponding product term were used in the regression. In this case, both decoding and listening comprehension were statistically significant predictors of reading comprehension with decoding being very slightly stronger than listening comprehension. This finding is mostly consistent with the findings of previous research on second language reading acquisition and the Simple View of Reading where decoding and listening comprehension were both significant predictors of reading comprehension, but decoding was a slightly stronger predictor than listening comprehension (Kang et al., 2011).

For the Core group, the Simple View of Reading variable was not a significant predictor of reading comprehension.

French Immersion subgroup

In terms of the Simple View of Reading and its associated skills – decoding and listening comprehension – the regressions showed that there was a large difference in the way that the skills predicted reading comprehension in the Immersion group. In contrast to the Core group where decoding was a significant predictor of reading comprehension, decoding was a significant predictor in none of the regressions for the Immersion group. Similar to the Core group, listening comprehension assessed by ÉVIP was never a significant predictor of reading comprehension either. Instead, TESTCan Listening Comprehension was the only significant predictor of reading comprehension and the variable accounted for the greatest portion of variances in reading comprehension. This is not too dissimilar from the findings of Verhoeven & van Leeuwe (2012) who found that as their sample aged and decoding became more automated, a stronger connection between listening comprehension and reading comprehension was forged (p. 1815).

Finally, the Simple View of Reading model proved to be a predictor of reading comprehension for the Immersion group ($n=19$) in just one model of the regression analysis. In contrast, the Simple View of Reading model was not a significant predictor for the Core group alone ($n=16$) or for the whole group taken together ($n=35$). As briefly described in Chapter 4, the standardized coefficient Beta was negative. This does not mean that the relationship was negative necessarily. This was likely a suppression effect rather than an explanation of the way in which the Simple View of Reading might predict reading comprehension, especially considering that a negative relationship between the

Simple View of Reading and reading comprehension would be directly contrary to extensive research on this theory. It is difficult to speculate why the Simple View of Reading could show this result for the Immersion group but not the Core group due to the likelihood that the significance of SVR in this regression is simply a suppression effect.

To conclude, the findings from the present study are inconsistent with the literature where the reading comprehension of second language learners, such as the participants in Kang et al. (2011) and Verhoeven & van Leeuwe (2012), was shown to be connected positively to the Simple View of Reading. In light of the small sample size, especially for the subgroups analyses, I conclude that the current study lacked the power necessary to test the Simple View of Reading in this population adequately.

Limitations and future directions

There were two major limitations to this study: the first was in the choice of measures, and the second was in the small and homogenous sample. The first limitation is that I used L1 measures instead of L2 measures. The measures I chose measure the skills of people who speak French as their first language, except for the TESTCan (University of Ottawa, 1994). As such, I could not evaluate standardized and percentile scores of the measures used in this study. An additional limitation from this is that no basal or ceilings could fairly be used for my sample. For these reasons, it is important to interpret the findings from this study as exploratory rather than definitive, and perhaps as a next step in the study of second language reading acquisition.

The above-mentioned limitations to the study are not meant to discount the value of the measures used. Measures to assess the skills of my sample of second language

speakers were challenging to find and these were decided to be the best measures to use based on the literature and on the availability of measures.

The second limitation is the small sample size. Due to time constraints for a master's thesis, it was impossible to collect the large number of participants desired. Considering the large number of measures used for the study, the small sample size cannot paint an accurate picture of the skillsets acquired in French Immersion and Core French. The small sample size also made it difficult to analyze the relationship between the Simple View of Reading and reading comprehension in the two subgroups. Although I had set out to obtain 60 participants in the study – 30 each for Immersion and Core – this was not possible due to the time constraints. As such, following two full months of data collection, it was decided to move forward with the study with the smaller number of participants that I was able to get. Also, although the Queen's University courses were structured to stream students in a way that was appropriate for my study, in reality, there was a mix of students in each class from which I recruited the participants. As such, we had to relax certain recruiting criteria. For example, several participants were recruited from courses that were not French courses, and the intent to use participants who only were enrolled in Early French Immersion was done away with in favour of getting any participants who had done French Immersion whether it was early, mid, or late entry. These decisions were made in order to get as many participants as possible according to the timing constraints of the study.

In addition to the small sample size, the sample is also homogenous, with most participants being female and from the Greater Toronto Area. Also, some participants had additional exposure to French through an on-going course at their university instead of

being freshly graduated from high school. The results, then, cannot be extended to other French Immersion and Core French groups who might come from different parts of the province or perhaps other provinces with similar programs.

The small sample also creates an issue in the way of the measures and the statistical analysis used in this study. For example, in a larger study, a Pearson correlation coefficient of .35 may be significant. In the present study, however, where $n=35$ (or $n=19$ for the Immersion group or $n=16$ for the Core group), a Pearson correlation coefficient of .35 is not significant. As such, it is difficult to look at the how the essential skills of reading comprehension, listening comprehension, decoding, and then the product term *decoding x listening comprehension* might be related and the strength at which they are related. This same issue arises in the regression models. The small sample size may explain the lack of significance of the Simple View of Reading model to predict reading comprehension, especially considering that my findings are directly contrary to many previous studies that explore the Simple View of Reading in a variety of contexts with larger and more diverse samples.

Despite its limitations, this study has potential implications for the future study of second language reading acquisition. Previous studies have shown the relationship between the Simple View of Reading and its associated skills as readers gain experience, such as the longitudinal study by Verhoeven & Leeuwe (2012) or in the meta-analysis by Garcia & Cain (2014). In both cases, the researchers suggest that the relationship between the Simple View of Reading and its associated skills change, for example due to automated decoding skills as participants get older (Verhoeven & Leeuwe, 2012). In future studies, it would be more beneficial to study participants at the end of the programs

rather than at the beginning of their new and advanced programs at the university-level as was in this study.

We have seen in this study that both decoding and listening comprehension are linked to reading comprehension skill, but that the two former skills together as a product largely have no bearing on reading comprehension neither for those who completed Core French, nor for those who completed French Immersion except for possibly one case. Future study of the way in which the Simple View of Reading and second language programs are related is further required due to the very small and homogenous sample size and the limitations of the L1 measures in an L2 group in the present study.

Concluding Remarks

The Simple View of Reading was the theoretical guide for this study and it served as the basic model from which measures were chosen, skills were assessed, and analyses were run. Unsurprisingly, the statistics showed that the Immersion group's ($n=19$) reading comprehension was significantly stronger than for the Core group. What was surprising, however, was that there was no difference in the within groups, which answers the second question of the present study.

The Simple View of Reading, which was the basis of the third question of my study, was not a strong predictor of reading comprehension for the participants of this study. Furthermore, decoding and listening comprehension predicted reading comprehension inconsistently between both groups. Decoding was a significantly stronger predictor for the Core group, and listening comprehension was only significant when assessed by TESTCan Listening Comprehension. More research is needed to assess the effects of the Simple View of Reading in adult readers of French as a second

language. This could provide insight on its strength in adult reading theory, which is an important group that seems to be less studied in second language acquisition, especially where the Simple View of Reading, a well-supported theory, is used.

To conclude, the data presented in the study can support the research questions posed, though with a somewhat limited scope. The first and second questions compared reading comprehension and its associated skills within the groups. The data show that the French Immersion group had stronger reading comprehension skills than the Core group, and that the Core group did not show any differences between their skills. One interesting aspect that the study did find, however, is how the predictors of reading comprehension changed depending on how listening comprehension was assessed, which suggests that careful selection of measures is essential to ensure that a participant can show more accurately her/his skill in a broad skill like listening comprehension. Ultimately, the current study cannot conclusively demonstrate the way in which the Simple View of Reading models reading comprehension in both of these two subgroups; further research is needed to seek how the Simple View of Reading models reading comprehension in adult learners of two standard second language programs in Ontario, Canada.

References

- Butler, Y.G., & Hakuta, K. (2009). The relationship between academic oral proficiency and reading performance: A comparative study between English learners and English-only students. *Reading Psychology, 30*(1), 412–444.
- Cronin, K.A. (2014). The relationship among oral language, decoding skills, and reading comprehension in children with autism. *Exceptionality, 22*(1), 141-157.
- Dunn, L., & Dunn, L., (2007). Peabody Picture Vocabulary Test. Toronto: Pearson Canada Assessment Inc.
- Dunn, L., Thériault-Whalen, D., & Dunn, L. (1993). Échelle de vocabulaire en images Peabody. Toronto: Pearson Canada Assessment Inc.
- ErDOS, C., Genesee, F., Savage, R., & Haigh, C. A. (2011). Individual differences in second language reading outcomes. *International Journal of Bilingualism, 15*(1), 3–25.
- Friesen, J. (2013, January 28). French immersion enrolment skyrockets as a new linguistic category emerges. *The Globe and Mail*. Retrieved December 1, 2013, from <http://www.theglobeandmail.com>
- Garcia, J.R., & Cain, K. (2014). Decoding and reading comprehension: A meta-analysis to identify which reader and assessment characteristics influence the strength of the relationship in English. *Review of Educational Research, 84*(1), 74–111.
- Geva, E. & Clifton, S. (1994). The development of first and second language reading skills in early French immersion. *The Canadian Modern Language Review, 50*(4), 646–667.

- Gough, P.B., & Tunmer, W.E. (1986). Decoding, reading, and reading disability. *Rase*, 7(1), 6–10.
- Hoover, W.A., & Gough, P.B. (1990). The simple view of reading. *Reading and Writing: An Interdisciplinary Journal*, 2(1), 127–160.
- Kang, Y., Choi, Y., Lee, B., & Nam, K. (2011). Prediction of Korean EFL learners' English reading comprehension abilities: An examination of the simple view of reading. *English Teaching*, 66(1), 23–38.
- Keenan, J.M., Betjemann, R.S., & Olson, R.K. (2008). Reading comprehension tests vary in the skills they assess: Differential dependence on decoding and oral comprehension. *Scientific Studies of Reading* 12(13), 281–300.
- Kim, Y.S., & Phillips, B. (2014). Cognitive correlates of listening comprehension. *Reading Research Quarterly*, 49(3), 269–281.
- Kirby, J.R. & Savage, R.S. (2008). Can the simple view deal with the complexities of reading? *Literacy*, 42(2), 75–82.
- Ministry of Education. (1998a). The Ontario curriculum grades 9 and 10: French as a second language — core, extended, and immersion French.
- Ministry of Education. (1998b). The Ontario curriculum: French as a second language: Core French — grades 4–8.
- Ministry of Education. (2001). The Ontario curriculum grades 1 to 8: French as a second language —extended, and immersion French.
- Ministry of Education. (2013a). The Ontario curriculum grades 1 to 8: French as a second language — core, extended, and immersion French.

- Ministry of Education. (2013b). A framework for French as a second language in Ontario schools kindergarten to grade 12.
- Morrison, L. (2004). Comprehension monitoring in first and second language reading. *Canadian Modern Language Review, 61*(1), 77–107.
- Mousty, P., Leybaert, J., Alegria, J., Content, A., & Morais, J. (1994). BELEC. Brussels: Université libre de Bruxelles.
- Sadeghi, A., Everatt, J., McNeill, B., & Rezaei, A. (2014). Text processing in English-Persian bilingual children: A bilingual view on the simple model of reading. *Educational & Child Psychology, 31*(2), 45–56.
- TESTCan. (1994). Ottawa: Institut des langues secondes, Université d'Ottawa.
- Verhoeven, L., & van Leeuwe, J. (2012). The simple view of second language reading throughout the primary grades. *Reading and writing, 25*(8), 1805–1818.
- Wechsler, D. (2005). Test de rendement individuel de Wechsler deuxième édition (WIAT-II): Version pour francophones du Canada. London: The Psychological Corp.
- Wesely, P. M. (2009). The language learning motivation of early adolescent French immersion graduates. *Foreign Language Annals, 42*(2), 270–286.

Appendix A

GREB Letter



September 29, 2014

Mr. Ahmed Himada
Master's Student
Faculty of Education
Queen's University
Duncan McArthur Hall
511 Union Street West
Kingston, ON, K7M 5R7

GREB Ref #: GEDUC-753-14; Romeo # 6013689

Title: "GEDUC-753-14 Reading Differences in FSL Programs: The Role of Decoding and Listening Comprehension in Second Language Reading Skills"

Dear Mr. Himada:

The General Research Ethics Board (GREB), by means of a delegated board review, has cleared your proposal entitled "**GEDUC-753-14 Reading Differences in FSL Programs: The Role of Decoding and Listening Comprehension in Second Language Reading Skills**" for ethical compliance with the Tri-Council Guidelines (TCPS) and Queen's ethics policies. In accordance with the Tri-Council Guidelines (article D.1.6) and Senate Terms of Reference (article G), your project has been cleared for one year. At the end of each year, the GREB will ask if your project has been completed and if not, what changes have occurred or will occur in the next year.

(continued)

You are reminded of your obligation to advise the GREB, with a copy to your unit REB, of any adverse event(s) that occur during this one year period (access this form at https://eservices.queensu.ca/romeo_researcher/ and click Events - GREB Adverse Event Report). An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example you must report changes to the level of risk, applicant characteristics, and implementation of new procedures. To make an amendment, access the application at https://eservices.queensu.ca/romeo_researcher/ and click Events - GREB Amendment to Approved Study Form. These changes will automatically be sent to the Ethics Coordinator, Gail Irving, at the Office of Research Services or irvingg@queensu.ca for further review and clearance by the GREB or GREB Chair.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

A handwritten signature in black ink that reads "Joan Stevenson". The signature is written in a cursive style with a large initial "J" and a long horizontal stroke at the end.

Joan Stevenson, Ph.D.

Chair

General Research Ethics Board

c: Dr. Lesly Wade-Woolley, Faculty Supervisor
Dr. Chris DeLuca, Chair, Unit REB
Ms. Stacey Boulton, c/o Graduate Studies and Bureau of Research

Appendix B
Questionnaire

Questionnaire

Participant ID: _____

1. City/town where you grew up:

2. Are you currently enrolled in a first-year French Studies course at Queen's?

_____ YES _____ NO If so, which one? _____

3. Which languages **outside of school** did you grow up speaking and to what fluency?

1. _____ [Poor] [Proficient] [Fluent]
 First language

2. _____ [Poor] [Proficient] [Fluent]
 Second language

3. _____ [Poor] [Proficient] [Fluent]
 Third language

4. Which French as a Second Language programs did you take? Since when and up to when?

EX. Core French 7 years
 First program length of time

1. _____ length of time
 First program

2. _____ length of time
 Second program

(continued)

4. When did you begin your FSL Program and at what level?

- i) French Immersion Grade 1 iv) Extended French Grade 1 vii) Core French Grade 1
ii) French Immersion Grade 4 v) Extended French Grade 4 viii) Core French Grade 4
iii) French Immersion Grade 7 vi) Extended French Grade 7 ix) Core French Grade 7

Other (please specify): _____

5. Did you take a French course in your final year of high school?

_____ YES _____ NO

If so at what level and program? (ex. grade 12 University Core French)

6. What is the highest level of education for your parent/guardian?

Mother/female guardian:

[Did not graduate high school] [High school diploma] [college diploma] [university degree] [unknown] [Not Applicable]

Father/male guardian:

[Did not graduate high school] [High school diploma] [college diploma] [university degree] [unknown] [Not Applicable]

Appendix C

Recruitment script

We are currently seeking participants for a study that focuses on FSL reading skills. This study takes approximately an hour and fifteen minutes to complete. Participants work with the researcher one-on-one in a booked room on campus and complete a series of fun, interactive activities!

The research is important because findings will provide relevant information for:

- Identifying the ways in which different kinds of French instruction in public schools affect essential skills; and
- Providing insight and filling the gaps in knowledge about reading comprehension in French.

Participation in this study will not affect your marks. No data collected in the study will be shared with your instructors, and all data collected via the measures are confidential. Participants may choose to participate in a booked room at a main campus library, or at West Campus and appointment times are flexible and open!

Compensation for completing the measures is a **\$5 gift card to a local café!**

if...

- French is **not** your native language
- You completed a grade 12 University French course (Core or Immersion)
- You graduated high school within the last three years (June 2012, June 2013, or June 2014)
- You have **not** completed a French course at a university or college (HOWEVER, enrollment in a first year French course is fine)

Appendix D

Letter of Information/Consent Form

Dear Madam/Sir,

I invite you to participate in a study entitled “Reading differences in FSL programs: the role of decoding and listening comprehension in second language reading skills.” This research is being conducted by Ahmed Himada (Master of Education, Candidate) under the supervision of Dr Lesly Wade-Woolley in the Faculty of Education at Queen’s University in Kingston, Ontario. This study has been granted clearance according to the recommended principles of Canadian ethics guidelines and Queen’s policies.

The focus of this study is on the literacy development and reading comprehension differences between recent graduates of high school French Immersion and Core French programs. This study will connect current reading comprehension theory to the context of second language programming in Canada.

If you agree to participate in this study, you will first complete a demographic questionnaire. Following this you will be asked to take part in various language and literacy-related activities, including reading words and/or passages aloud and listening carefully for details then answering questions. You will be able to respond by pointing to answers, sometimes reading aloud, and sometimes speaking. The oral responses you provide will be digitally recorded to allow scoring at a later time. In these cases, your responses will be identified on the recording by numbers only, and once the responses have been scored and coded, the digital files will be deleted. You may choose not to respond to some questions if for some reason you find them to be discomforting. These activities should take about one hour to complete.

To thank you for your time, you will be offered a \$5.00 gift card to a local café. This gift card will be offered upon completion of the testing.

Your participation is completely voluntary. There are no known physical, psychological, economic, or social risks associated with this study. Further, you are free to choose to withdraw from the study at any time. If you choose to withdraw from the study, you may have your data removed. Your participation in this study will not affect your mark in any class. Furthermore, any data collected is private and confidential and will only be viewed by the researcher and his supervisor.

Protecting your privacy is important and as such your individual data and identity will remain confidential to the fullest extent possible. Here is how you will be protected:

- Your name and identity will not be used in the data or published work.

(continued)

- The paper and computer data will be locked indefinitely in an office at Queen's University. (Data will be retained indefinitely to enable secondary analysis related to second language reading); Electronic files will be password protected.
- Only the researcher and his supervisor will have access to the data.
- The data will only be used for research purposes and only group data, not individual data, will be reported.

If you consent to participate in the research study, please sign the attached consent form. Your signature on this form tells us that you understand the procedures involved and that you give your consent to participate. Keep this letter and the second copy of the consent form for your records.

If you have any questions about this project or wish to withdraw, please contact Ahmed Himada at by email at 8ah2@queensu.ca or Dr Lesly Wade-Woolley at lesly.wade-woolley@queensu.ca. Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board, Dr. Joan Stevenson, at 613-533-6081 or by email at chair.GREB@queensu.ca.

Sincerely,

Ahmed Himada
 Master of Education Candidate
 Faculty of Education
 Queen's University

Please sign one copy of this Letter of Information/Consent Form and return to the researcher. Retain one copy for your records.

I have read the statements above and have had my questions answered. I freely consent to participate in this study.

Participant's signature: _____

Date: _____ email address: _____