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## The Effects of Reading Bilingual Books on Vocabulary Learning

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A thesis submitted in partial fulfillment of the requirements for the Master of Arts degree in Education

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## Abstract

This paper focuses on the effects of reading bilingual books on vocabulary learning. Eighty-three English as Foreign Language (EFL) learners in China read different versions of the same text: English-only text, English text with target words glossed, English version text followed by the Chinese version, and Chinese version text followed by the English version. A pretest, immediate posttest, and delayed posttest were created to measure the incidental learning of unknown vocabulary. The findings show: (a) All four groups made significant gains in lexical knowledge through completing the treatments, (b) Those who read glossed text and bilingual text had significantly durable knowledge gain, (c) The mean scores of participants who read glossed text and read the English version of the text before the Chinese version were significantly higher than the scores of participants who only read the English version of the text in the immediate posttest, (d) The knowledge gains of participants who read bilingual texts were significantly higher on the delayed posttest than those who only read the English version of the text.

**Keyword:** bilingual reading, reading, vocabulary learning, glossing

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## Chapter 1 Introduction

### 1.1 Background

The purpose of the present study is to investigate whether bilingual books or bilingual materials can be used in language learning as a tool for L2 vocabulary development. In EFL (English as a Foreign Language) contexts, reading is one of the most accessible ways to receive a large amount of L2 input. Research indicates that engaging learners in L2 reading can improve various aspects of proficiency, including vocabulary which is a main concern and obstacle in the L2 learners' learning process. During the reading process, EFL learners can learn new words incidentally. The incidental learning of the vocabulary happens as the byproduct of a task (Ellis, 1999). Even if the aim is not to deliberately learn new words, vocabulary can be learned incidentally in the reading process (Webb & Nation, 2017).

Finding appropriate L2 reading materials can be challenging for language learners. Mostly EFL learners read course books or graded readers, or other materials designed for language learners. Thus, the texts in those materials might not accurately reflect real language content in English. Authentic texts are likely better for learners to get input of the target language, however, they are too difficult for L2 learners at the beginning or intermediate levels to tackle.

One of the ways that L2 learners are able to read authentic materials is through adjunct aids. Glosses or translation in the first language are standard features of language teaching materials (Joyce, 1997). Glossing is when text is enhanced by providing the first language (L1) or L2 definitions of difficult words. Glosses in L1 are important because they enable learners to read text faster by saving the time of looking up the unknown words in a dictionary. Another problem in L2 reading is learner's attitude towards reading in a foreign language. Reading is sometimes an ordeal for some learners. Hayden (1997) reports that L1 glossing is preferred to L2 glossing by learners. L1 is accepted by learners as a very helpful aid (Luo, 1993). Generally, language learners like L1 glossing. According to Kern (1994) though, the extent to which the L1 can be used in L2 reading also requires consideration.

Bilingual reading materials can be seen as an extreme form of L1 glossing. The translation is a form of interlinear glossing; translation is provided sentence by sentence in between the original text. Bilingual books are also known as dual language books (Semingson,



Ploe, & Tommerdahl, 2015). They can be found across different genres of fiction or nonfiction books. In a well-translated bilingual book, the entire text is presented in two languages. Reading bilingual books causes less learning burden to language learners compared to reading books that only have the target language because readers do not have difficulties in understanding the texts.

### 1.1.1 Conceptual Framework

*Lexical coverage.* It is important to know whether the reader can understand the materials he or she reads. To understand context in a second language, readers must be in command of a certain amount of vocabulary. Bilingual reading materials enable readers to understand the text with fewer difficulties because the L2 translation is provided. To some extent, comprehending bilingual reading materials is irrelevant to the vocabulary knowledge one has. In order to compare the effect of reading bilingual materials and other forms of reading materials on vocabulary acquisition, it is important to ensure learners can understand the content of all materials.

In the field of second language teaching and learning, the percentage of words that enables adequate comprehension of discourse is of interest. Research has shown that a relatively small number of frequent words in English can cover a large proportion of written discourse (Nation, 2001). Adolphs and Schmitt (2003) refer to the percentage of known words as lexical coverage. Lexical coverage can be used to estimate the vocabulary size needed to understand text. From the reader's perspective, this means if the reader has reached 90% lexical coverage, he or she can understand 90% of the running words of the text.

West (1926) suggested that adequate comprehension requires lexical coverage of 98%. Laufer (1989) investigated the lexical coverage necessary for comprehension and found that if participants reached 95% coverage, they were more likely to have adequate comprehension than those with lower coverage levels. In this study, coverage was calculated by learners' self evaluation of words and a translation test. "Adequate comprehension" was defined by a score higher than 55% in a reading comprehension test which was the passing score of the English course that participants were enrolled in.

However, the term "adequate comprehension" has no clear definition because different levels of comprehension and various contexts are different for each case. Many researchers might disagree with the low score of 55% being adequate. The study by Hu and Nation (2000)

did not support the 95% threshold. They found that a 95% coverage level enabled readers to comprehend a text with the help of positive reading skills and background knowledge. If a learner wants to comprehend a text adequately, they suggest that he may need 98% coverage. In another study by Schmitt, Jiang, and Gabe (2011), 661 participants' vocabulary knowledge was measured with words from two texts. Participants then read the two texts and completed a reading comprehension test. Schmitt, Jiang, and Gabe found that there is a relatively linear relationship between the percentage of known vocabulary and comprehension. Although researchers have expressed their concern about using 95% or 98% coverage as oversimplified thresholds in studies (Laufer, 2010; Nation, 2001), these numbers have been used in much research as a benchmark.

*Noticing and attention.* This study is to compare the effects of reading plain text, text with target words glossed, and bilingual text. Giving meaning in L1 of the target L2 words in text is a way to draw more attention to the words. Providing glossed target words is supported by the notion of "consciousness-raising" (Nagata, 1999), because glosses may lead learners to read the target words back and forth, causing more lexical processing. In the early 1980s, a growing number of models of second language acquisition set aside a role for consciousness (Long, 1981; Bialystok, 1982). Those models took a more sophisticated look at cognition and memory. Recent research concerning second language acquisition theory has developed models of attention, memory, and consciousness based on cognitive psychology. For the acquisition of lexical items, language learner's attention to input is crucial. The Noticing Hypothesis (Schmidt, 1990) suggests that in language learning, input does not equal intake unless it is noticed, in other words, consciously registered. The Noticing Hypothesis states that there is no learning unless conscious awareness at the level of noticing occurs. Schmidt further suggests that language features must be noticed by learners in language acquisition (Schmidt, 2001). L2 learners who read in L2 with L1 glosses may process lexical items before or instead of other aspects of language such as grammatical structures (Lee & VanPatten, 1995), that is, when the readers try to comprehend L2 reading materials, they pay less attention to words compared to language structures. Lee and VanPatten further explain that lexical items have higher informational value, thus the most efficient way for learners to understand a text is to skip over other items and focus on the content of words. Robinson (1995) suggests that noticing entails detecting and then rehearsing the linguistic feature in short-term memory before storing it in long-term memory.

One approach to making the L2 language features become more noticeable is providing the contrastive association with L1.

*Contrastive analysis.* Bilingual reading materials provide L1 translation which can be read with the L2 text at the same time. Readers can read both the L1 and L2 in one reading session. When learners turn to L1 glosses during reading, another essential part of L2 acquisition occurs, that is comparing. When language learners “notice the gap” (Schmidt & Frota, 1986), that is, when learners notice a lack of knowledge of the L2 words, they make a comparison between their L1 and L2. When language learners have difficulties in understanding the target language, comparison occurs. L1 glosses enable the learner to read materials above their proficiency level. If learners know how items in target language differ from their existing knowledge, the new words and language rules can become part of the interlanguage system. If a glossed word is noticed, the chance of it being compared with learners’ first language increases, and the input may be introduced to the learners developing system (Lee & VanPatten, 1995). Providing glossed target words and providing bilingual versions of the reading materials are different features aiding second language reading, but there are no studies comparing the effects of those two approaches. This study aims to compare the effects of different text types to find the most effective reading treatment for second language learners.

### 1.1.2 Significance of the study

Bilingual reading materials or books are common to EFL settings, and so it is important to investigate their contributions to language learning. However, relatively little is known about the contributions that reading bilingual books make to L2 language learning development. The purpose of the present study is to determine the extent to which vocabulary can be learned through reading bilingual books. The results should indicate whether reading bilingual books is an effective way to learn a language. There are two secondary aims to this study. The first is to investigate how the reading orders of bilingual text (reading L1 before L2, and reading L2 before L1) might affect vocabulary learning. The second is to compare the effects of reading bilingual text and glossed text on vocabulary learning. The findings of the study may provide implications on which reading materials should be selected for vocabulary learning.

## Chapter 2 Ethics Considerations

The present study followed the requirement of Non-medical REB of Western University. In case not to bias face validity, participants were individuals that have no previous relation with me. Participants were provided with an information sheet with regards to their role and rights in the study prior to their participation, and they were asked for their written consent before proceeding with the study. It was made clear to participants that the result of the tests was not related to their academic performance in school by any means. The participants were given a consent form to sign to indicate their willingness to participate in this study and to authorize the use of their response in this study.

There were no known risks for this study. Also, the participants had a chance to increase their vocabulary knowledge, improve their reading skills, and learn a new language learning strategy which could be applied in their future English language study.

The participants received a number upon volunteering for the study which they were asked to write on all the tests they complete throughout the study. This process allowed us to track all the student's responses and analyze their progress from pretest to posttests. The numbers given to the participants was not linked to any of their personal information such as name, thus the identity of the participants remained confidential at all stage of this study.

All the data collected and analyzed in the study were well protected during the research. Paper files were kept in a locked filing cabinet. The electronic data were stored on a password protected laptop. All the data will be destroyed in five years.

## Chapter 3 Article

### 3.1 Introduction

The term *Bilingualism* refers to the presence of two languages (Parker, 2006). Rudin (1996) defines bilingual literature as two languages together appearing with equal or similar weight, extent, and format. Bilingual books can be seen as a type of multicultural literature and can serve as authentic texts for students to learn vocabulary, collocation, and idiomatic expressions. Bilingual books are well accepted in EFL countries such as China and Spain. In the field of second language (L2) learning, reading is considered a major method of increasing the amount of target language input. Krashen (1989) claims reading to be essential input for L2 learners. For L2 learners, particularly those who are not in an English speaking country, reading is one of the most accessible ways to receive large amounts of L2 input. Research reveals that engaging learners in reading can improve various aspects of proficiency (Elley & Mangubhai, 1983; Farran, Bingham & Matthews, 2012; Krashen, 1989), including vocabulary (Duff, Tomblin & Catts, 2015; Grabe & Stoller, 1997;). Developing lexical knowledge is a long process with gains being acquired in small increments (Webb & Nation, 2017). Reaching the lexical thresholds associated with comprehension of written text is a major objective in the L2 learning process.

However, one of the problems facing readers is the difficulty in finding appropriate L2 reading materials. Course books and graded readers offer dialogues and paragraphs to read, however, these are often written specifically for English as a Second Language (ESL) or English as a Foreign Language (EFL) learners. Thus, they often sound unnatural or stilted (Gilmore, 2007). Texts written for native speakers of English, on the contrary, are too difficult for L2 learners at the beginning or intermediate levels to tackle. In order to find out the vocabulary size which is necessary to read and understand text, Nation (2006) developed 14 1000-word frequency lists derived from the British National Corpus. He found that the first thousand most frequent word families provided 78% to 81% coverage, the second thousand provided 8% to 9%, and the third thousand provided 3% to 5% coverage of written texts. Coverage refers to the percentage of words that are likely to be known. Thus, knowing the most frequent 1000 word

families would allow readers to know 78-81% of the words in written text. Nation concluded that to reach the 98% lexical coverage figure that is viewed as being most appropriate for adequate comprehension of written text (Hu & Nation, 2000; Schmitt, Jiang, & Grabe, 2011), knowledge of the most frequent 8,000-9,000 words is required. Achieving these vocabulary sizes and understanding text is therefore very challenging for L2 learners, especially for those in the early stages of language learning.

One of the ways to enable L2 learners to read authentic materials is through adjunct aids such as first language glosses and translation. Glossing is when text is enhanced by providing the first language (L1) or L2 definitions of difficult words. Glosses and translation are common features of language teaching materials (Joyce, 1997). L1 translation is useful because it enables learners to read the text faster by saving the time that might be spent looking words up in a dictionary.

Relatively little is known about the contributions that reading bilingual books makes to L2 development. The aim of the present study is to determine the extent to which vocabulary can be learned through reading bilingual books. There are two secondary aims of the research. First, it looks at how the reading orders of bilingual text (reading L1 before L2, and reading L2 before L1) might contribute to vocabulary learning. Second, it also compares the effect of reading bilingual text and glossed text on vocabulary learning.

## 3.2 Literature review

### 3.2.1 Why study with bilingual books/materials?

Bilingual texts are widely available and widely used in EFL contexts (Ernst-Slavit & Mulhern, 2003). Bilingual books are available in different genres and across different age groups in the form of picture books or non-picture books in fiction or nonfiction. Popular novels are perhaps the most common type of bilingual text. However, bilingual social science readers and children readers are also gaining popularity in recent years. There are different publishers around the world providing bilingual reading materials in various languages. Parker (2006) mentions publishing companies in the United States are publishing more multicultural bilingual books. National companies, such as Scholastic, have published a large number of Spanish – English bilingual books. Smaller companies also publish bilingual books in other languages such as Native American, French, Chinese, Japanese, and other languages from around the world.

Bilingual Books publishing company, which is headquartered in Washington, publishes literature for more than 20 different languages. The Milet publishing company in Britain provides bilingual books with English and a wide range of languages such as Arabic, Frasi, German, Italian, Korean, and Spanish. In EFL countries, the value of bilingual books is more and more recognized. For example, the well-known Oxford Bookworms series are published in English-Chinese bilingual versions. English learners in China are encouraged to read bilingual books and use them as a language learning tool. One of the most widely used English course books in China, *The New Concept English* (Alexander et. Al, 1987), provides course articles in English and complete course article translations in Chinese. EFL learners can also learn with bilingual text included in newspapers, and subtitled TV programs.

One of the key reasons why bilingual texts are common is that L2 learners are motivated to learn with bilingual texts. Research suggests that bilingual books are viewed positively by language learners, teachers, and even parents (Hu, Chen, & Li, 2012; Parker, 2006). Schon (2004) acknowledges the increase in publication of bilingual books. She reports that parents ask teachers and librarians for bilingual materials for their children; teachers who believe that bilingual books would assist students in learning the second language also tend to introduce dual language materials to their students.

The difficulty of understanding a L2 text is likely to discourage further reading by some language learners, so bilingual books may serve as an enjoyable learning resource to use in language learning. Compared to English-only reading materials, bilingual books may be easier for readers to read and comprehend. Hu et al. (2012) found that children responded positively to bilingual books as they participated in English learning activities. Results of the study indicated that participants became more engaged in bilingual reading activities than they used to be in single language reading activities. Lichty (2002) reports that one reason for the popularity of bilingual books is that students who speak different languages can bridge their linguistic differences through bilingual books. Also, bilingual books can help to develop both L1 and L2 fluency by encouraging text-to-text translations by students and their families. The positive attitude towards bilingual books suggests that there may be potential for the reading of bilingual books to increase L2 vocabulary knowledge.

One potential problem of using bilingual books for language learning is the quality of translation. Schon (2004) expressed concern about the publication of bilingual books without the

support of research findings and input from bilingual educators. She also noted that there are some poorly translated books and that over-translation and overly literal translation may lead to unnatural rather than typical language patterns in translated books and materials (Barrera, Quiroa & Valdivia, 2003, 162).

In recent years there has been a small amount of research that supports the use of bilingual texts. Hu, Chen, and Li (2012) explored the use of bilingual books for language development in several case studies. The five participants in the study were asked to read four bilingual English-Chinese picture books over an eight-week period. Hu, Chen, and Li found that the bilingual books, combined with instruction, promoted participants' L2 development. There was an increase in the number of words the participants could identify and spell correctly. At the beginning of the first session, the participants could identify 28.6% and 9.2% of words at two levels from the Dolch Fry wordlist (Hu & Commeyras, 2008). After eight weeks, the participants could identify 56.6% and 36.4% of the words, respectively. This indicates that bilingual books can help readers to learn L2 words, phrases, and idiomatic expressions. Hu, Chen, and Li suggest that with proper instruction, bilingual books can be a powerful resource for improving language proficiency. Taylor, Bernard, Garg, and Cummins (2008) also suggest that bilingual books can have a positive effect on helping learners to develop vocabulary knowledge because they help transfer conceptual knowledge and skills across languages. When language learners read materials in the target language, they need to acquire the vocabulary that is specific to the content. They will have to use their background knowledge as well as their knowledge of the L1 and L2 to learn language through reading bilingual texts. With very few studies investigating the effects of reading bilingual books on vocabulary learning, there is a need for further research in this area.

### 3.2.2 How should bilingual texts be used?

Bilingual texts contain two features: The L1 text and the L2 text. The most common way of presenting bilingual texts is the format of full-text translations (Semington, Plo, & Jodi., 2015). In full-text translations, the entire content is presented in two languages. Both languages can be put on one page, facing pages, or different pages. This raises the issue of the placement of the two languages, for example, which language should come first on the page. Because, readers should be able to easily understand the L1 version of the text, reading the L1 version first is



intuitively logical. This order of reading would then allow better understanding of the vocabulary and content in the subsequent reading of the L2 version. This order of bilingual reading is also supported by the theory of errorless learning (Skinner, 1954), which incorporates an approach to learning that reduces or eliminates the potential for errors to occur during the learning process. According to this theory, errors may be consolidated in learners' memory and cause learners to remember false information. In the case of bilingual text, reading the L1 version of the text first provides the reader with correct information that should reduce the potential for errors in comprehension to occur during the reading of the L2 text.

However, reading the L1 text prior to the L2 text may have the negative effect of reducing the readers' motivation to carefully attend to the L2 version of the text. That is, when the learners receive all the information about the content from the L1 version of the text, they are less likely to read the text carefully in the foreign language, and as a result, pay less attention to unknown vocabulary in the L2 version. Second Language Acquisition theory has developed models of attention, memory, and consciousness based on cognitive psychology. The Noticing Hypothesis (Schmidt, 1990) suggests that in language learning, input does not equal intake unless it is noticed, in other words, consciously registered. For the acquisition of lexical items, language learner's attention to input is crucial. This might suggest that reading the L2 text first might be more effective, because readers may pay greater attention to unfamiliar words in this reading order.

Reading the L2 version prior to the L1 version of the text is also supported by the desirable difficulties framework (Bjork, 1994). This framework suggests that introducing more difficulties into the learning process improves long-term retention of the learned features. Desirable difficulties are learning tasks that require a desirable amount of effort to accomplish the objective. Reading the L2 version of the text first may enable deeper processing of the language in the text than reading in the reverse order. This may contribute to greater learning of the vocabulary in the long-term than reading in the L1-L2 order.

A secondary aim of the present study is to investigate how the order of reading the L1 and L2 versions of a bilingual text may contribute to L2 vocabulary learning. To the best of my knowledge, no earlier studies have investigated how the order of reading L1 and L2 texts may contribute to language learning. Determining which order of reading the texts has value because it indicates how to create and use bilingual materials for vocabulary learning. Bilingual books come with different formats, thus

investigating the placement of bilingual texts may help language learners and teachers to select suitable reading materials.

### 3.2.3 Bilingual reading and glossed reading

In glossed texts, the meanings of the target words are provided in either the L1 or L2. The placement of the meanings varies; glosses may be provided in the margins (marginal glossing), at the end of the book in a glossary, or immediately after the words. In bilingual texts, full-text translations are provided in the readers' L1. This might be viewed as a fully glossed text. Similar to glossing, the placement of the meanings varies with translations sometimes provided on the same page or different pages.

Glossing is a common feature of L2 texts written for language learners. There has been a large number of studies focused on the effects of glossing on vocabulary learning (e.g. Khezrlou & Ellis, 2017; Ko, 2012; Liu, 2017; Moradan & Vafaei, 2016; Ying-Hsueh & Good, 2009; Yoshii, 2006). Providing the meanings of L2 words in a gloss can help readers to better understand the text (Davis, 1989; Jacobs, 1994). Glossing can also help readers to learn L2 words (Nation, 1990; Nation, 2001). For example, Hashim and Saab (2015) investigated the effects of L1 glossing on the recall of vocabulary and found that L1 glossing contributed to the learning of new words. Taylor (2012) suggested that L1 glossing may facilitate lexical acquisition at the level of intake because L2 learners can rely on L1 glossing to draw their attention to a particular word to help better understand content and meaning. The importance of attention also lies in the fact that glossing may enable learners to notice a mismatch between his or her previous knowledge and the target language. This may also occur with bilingual books, because reading translations may also allow learners to recall their L1 knowledge when reading the L2 version of the text, or vice versa. This has the potential to, improve L2 processing and learning.

The main difference between bilingual and glossed texts is that bilingual texts provide word meanings following the grammatical rules of the sentence. That is, when learners read L1 translations and encounter the meanings of unknown words, they read the meanings connected with sentence structure. For example, in the sentence He ate an apple in the morning if "ate" is glossed only the meaning of "eat" might be given. However, in bilingual text, instead of providing the L1 meanings of individual words, the L1 meanings of all words are provided so that learners might better understand the meanings of the words in the sentence. One study has

investigated this issue. Gettys, Imhof, and Kautz (2001) compared two glossing formats in a study focusing on online glossing. In the study, participants read the text in two experimental conditions. They read an L2 article online and when they encountered unknown words, they could click on an electronic gloss to see the meanings of the words. In one condition they were provided with sentence-level word meaning which was grammatically equivalent to L2. That is, the target words were glossed with their meanings connected with the language form. Under the other condition, participants were provided with basic dictionary form meanings, that is, the meaning regardless of the grammatical rules of the L2 text. Results showed that reading with sentence-level equivalents took significantly less time than reading with dictionary forms of glossing. However, reading with dictionary forms of glossing resulted in better success rates in remembering new words. It seems bilingual and glossed texts both have pros and cons, but there is to my knowledge no previous studies comparing these two type of texts on the effects of vocabulary learning.

### 3. 3 The present study

Because bilingual reading materials or books are common to EFL settings, it is important to investigate their contributions to language learning. However, there are very few studies focusing on the effects of reading bilingual books. The purpose of the present study is to investigate the extent to which reading bilingual text may contribute to L2 vocabulary acquisition. This should indicate whether bilingual books may serve as a useful tool to learn L2 words. A secondary aim of this study is to determine which reading order L1 followed L2, or L2 followed by L1 is more effective for vocabulary learning. A third aim of the study is to compare reading bilingual text with one of the most common L2 text types: glossed text. This should further clarify the potential value of bilingual reading for vocabulary learning. Together, the findings of this study may provide a better indication of how reading materials can be designed to promote vocabulary learning and which text types teachers, parents and language learners should select. To address these issues, the following three research questions were posed:

- (1) To what extent is vocabulary learned through reading bilingual materials?
- (2) Does the order of reading bilingual texts affect vocabulary learning?
- (3) Does reading bilingual materials contribute to greater vocabulary learning than reading glossed materials?

## 3. 4 Method

### 3.4.1 Participants

There were 83 participants learning English as a foreign language (EFL) in the third year of a vocational school in China who took part in this study. The participants had been learning English for a minimum of eight years, and their proficiency level was considered to be at a high-beginner level. Their ages ranged from 17 to 18, and their first language was Mandarin. The participants were randomly assigned to one of four conditions. Each condition involved reading one of four different versions of the same text.

Participants were given a consent form to sign to indicate their willingness to participate in this study and to authorize the use of their responses in this study. The participants were informed about the reading and the test, but they were not told that the study was focused on vocabulary. They did not know the format of the test until they finished the reading session.

### 3.4.2 Design

The study employed a pretest, posttest, delayed posttest experimental design. The independent variable was the learning condition and the dependent variable was vocabulary learning. Participants were given instructions about how to complete the tests and treatments in both English and Chinese. There were four different treatment groups: Plain Text Group (PTG), Glossed Text Group (GTG), English-first Bilingual Reading Group (EBRG) and Chinese-first Bilingual Reading Group (CBRG). Each group read a modified text. The Plain Text Group read the reading material in English only; the Glossed Text Group read the material with target words glossed; the English-first Bilingual Reading Group read the English version of the material first and then read the Chinese version of it; the Chinese-first Bilingual Reading Group read the Chinese version of the text before reading the English version. All groups were given 30 minutes to complete the treatment.

After the treatment, the participants completed the immediate post-test. One week after the treatments, the participants were administered a delayed posttest to determine the extent to which the learning gains were durable. Participants were given 20 minutes to complete each test. All of the participants were able to complete the treatments and tests within the allotted time.

### 3.4.3 Materials

The treatments involved reading different versions of the first two chapters of the Oxford Bookworms Library Stage 2 graded reader *Robinson Crusoe*. The Oxford Bookworms graded readers are published in China as bilingual books that include English text together with its Chinese translation. The Chinese translation was on different pages than the English text. In the treatments, both L1 and L2 versions of the bilingual material that was found in the original graded reader was used to adapt the texts that the participants read.

Four different versions of the text were created. Each version contained the same set of L2 target words. PTG read the graded reader in the target L2, which was English. The material was two pages in length. GTG received the text in English with the target words glossed. In this study target words were glossed in the participants' L1 which was Chinese, because research indicates that L1 glosses are more effective than L2 glosses for vocabulary learning (Scherfer, 1993). In the gloss, the Chinese meaning was given in brackets immediately following each target word. The following example from the glossed text version shows the gloss for the target word prisoners:

There was a long, hard fight, but when it finished, we and the ship were prisoners (囚犯).

Providing the meaning of the unknown word in brackets immediately after the word is a common feature of English reading materials and tests in English courses in China, so the participants were very familiar with this kind of gloss.

The two bilingual reading groups read bilingual versions of the material. EBRG read the reading material in English first and then read it in Chinese. In this version, the first two pages of the material were in English and the latter two pages were in Chinese. In contrast, CBRG read the Chinese text first, followed by the L2 text. In this version, the first two pages were in Chinese and the final two pages were in English.

Table 1. *Cumulative Coverage Including Proper Nouns and Marginal Words of the First Two Chapters of Robinson Crusoe*

Word list	Tokens percentage	Coverage	Coverage including marginal words, proper nouns, and transparent compounds
1,000	93.87	93.87	96.79
2,000	2.71	96.58	99.50
4,000	0.07	96.65	
5,000	0.07	96.72	
6,000	0.07	96.79	
7,000	0.07	96.86	
8,000	0.07	96.93	
10,000	0.14	97.07	
Proper nouns	2.71	99.78	
Marginal words	0.14	99.92	
Transparent Compounds	0.07	99.99	
Tokens	1,406		

The English text was analyzed using Range (Nation & Heatley, 2002) together with Nation's (2012) BNC/COCA word family lists to determine the vocabulary size necessary to reach the lexical coverage level associated with adequate comprehension. Research suggests that if 95% of the words in a text are known, then readers may be able to understand the text (Laufer, 1989; Laufer & Ravenhorst-Kalovski, 2010). Table 2 shows the cumulative coverage of the first two chapters of Robinson Crusoe. The most frequent 1,000 word families accounted for 93.87% coverage of the 1,406 words in the text, and this figure increased to 96.79% when marginal words, proper nouns and transparent compounds were included. The relatively high lexical coverage at the 1000-word level and the length of formal English instruction that the participants had received suggested that they should be able to understand the text.

#### 3.4.4 Target items

Thirteen English words in the text were originally chosen as target items (See Table 2). However, one item *comfortable* was excluded from the analysis because the results of the pretest showed that only 2 of the 83 participants did not know this word. The remaining 12 target items were from a range of word frequency levels. Three words were chosen from the most frequent 1,000 words, six were from the second most frequent 1,000 words, and the other three words

were from 5th, 8th, and 10th BNC/COCA word family lists, respectively. Typically, in studies of incidental vocabulary learning, only lower frequency words are chosen as target words.

However, choosing words at different frequency levels may better reflect vocabulary learning, because although high frequency words are often assumed to be known to readers, it is likely that some higher frequency words are unknown or partially known (Webb & Chang, 2015). Because the target items were real words, it was likely that they would be known to some degree. This may help to better engage participants in the pretest than if all words were unknown.

Table 2. *List of Target Words*

Target words	
master	shore
sail	canary
escape	pirate
prisoner	cape
storm	leopard
adventure	slave

### 3.4.5 Dependent Measures

A pretest, immediate posttest, and delayed posttest were created to measure the incidental learning of unknown vocabulary. All tests were in a paper and pencil format, and the participants completed the tests without the external support of dictionaries and electronic devices. Twenty minutes were given to complete each administration of the tests. This was sufficient for all participants to finish each test.

In the pretest, the participants were instructed in both Chinese and English to translate 50 words from English to Chinese. Among the 50 words were the 12 target words, and another 38 words selected randomly from the BNC/COCA 1000- 5000 word lists to minimize a potential learning effect through completing the tests. Only target words were scored in the analysis. The immediate posttest was carried out after the treatments. Participants were given a paper with the 12 target words in English and were told to translate those words into Chinese. In the delayed posttest, the participants were also told to translate the target words from English to Chinese. However, the order of the items in the immediate and delayed posttests was randomized. In the

tests, every correct translation of a target word was scored 1 and the incorrect answer was scored 0. Thus, the maximum score on each test was 12.

Because of the nature of the Chinese language, there are different ways of expressing the same meaning. Thus the translations of words in the dependent measures were carefully scored. Synonyms or definition of the words were marked as correct answers as long as they expressed the meaning of the target words in the context. For example, correct responses for the target word “escape” were 逃走 (run away), 逃跑 (synonym of escape), 溜走 (flee), or 逃亡 (run off).

### 3.4.6 Analysis

The variables of interest were pretest scores, immediate posttest scores, and delayed posttest scores for the different treatments. Assumption testing was done to ensure the variables had no violations against further analysis. Two repeated measures analysis of variance (ANOVA) were used to compare the changes in mean scores with respect to the treatments. Repeated measures ANOVA was appropriate because the mean scores over two time points were compared. Analysis of covariance (ANCOVA) was conducted to analyze the difference between the groups' scores on the immediate and delayed posttests because this statistical technique could assess the knowledge gains of different groups while controlling for the effects of pretest scores.

## 3.5 Results

The descriptive statistics including the number of participants, means, and standard deviations are reported in Table 3. The independent variable in this study was the version of reading material the participants received. To answer Research Question 1 and to determine whether words can be learned incidentally through reading bilingual books, repeated measures ANOVAs were conducted between pretest and immediate post-test scores, and pretest and delayed posttest scores within each group. The ANOVA showed that there was a significant main effect of time within groups,  $F(1, 79) = 134.16, p = .00$ , partial eta squared = .63. Table 4 shows there were significant differences between pretest and immediate posttest scores for each group, indicating that each learning condition had contributed to significant gains in vocabulary knowledge.



Table 3. Means and Standard Deviations of Learning Conditions on Dependent Measures

Group		Pretest Scores	Immediate Posttest Scores	Delayed Posttest Scores
PTG (n = 15)	M	1.47	2.67	1.53
	SD	.92	1.11	1.25
GTG (n = 24)	M	1.13	4.33	2.25
	SD	1.36	2.75	1.98
EBRG (n = 20)	M	1.10	4.10	3.45
	SD	.85	2.27	2.48
CBRG (n = 24)	M	1.00	3.79	2.71
	SD	.83	2.35	2.54

Note. The maximum score of all tests was 12.

PTG = read English text only

GTG = read English with Chinese glossing

EBRG = English-first Bilingual Reading Group

CBRG = Chinese-first Bilingual Reading Group

Table 4. Repeated Measures ANOVA for Knowledge Gain from Pretest to Immediate and Delayed Posttests

	Group	Mean Difference	p	CI.		Cohen's d
				Lower	Upper	
Immediate posttest/ pretest	PTG	1.20*	.02	.19	2.21	1.18
	GTG	3.21*	.00	2.41	4.01	1.48
	EBRG	3.00*	.00	2.12	3.88	1.75
	CBRG	2.79*	.00	1.99	3.59	1.54
Delayed posttest/ pretest	PTG	.067	.88	-.82	.82	.06
	GTG	1.12*	.02	4.21	1.83	.66
	EBRG	2.35*	.00	1.58	3.12	1.27
	CBRG	1.71*	.00	1.01	2.41	1.22

Note. Confidence Intervals = 95%

p < .05 \*

After the treatments, the Glossed Text Group had the largest mean increase (3.21). The effect size was very large ( $d = 1.48$ ). The glossing condition also led to a statistically significant increase between pretest and delayed posttest (1.12,  $d = .66$ ). The English-first Bilingual Reading Group had a mean increase of 3.00 in the immediate posttest, and the effect size was very large ( $d = 1.75$ ). Their mean increase from pretest to delayed posttest was 2.35 and the effect size was also very large ( $d = 1.27$ ). The Chinese-first Bilingual Reading Group had a mean increase of 2.79 in the immediate posttest with a very large effect size ( $d = 1.54$ ), and in the delayed posttest,

their mean increase was 1.71 with a very large effect size ( $d = 1.22$ ). The Plain Text Group had the lowest word knowledge gain, with only a 1.20 mean increase. However, there was still a large effect size ( $d = 1.18$ ). There was no significant gain in vocabulary knowledge found for this group in the delayed posttest.

To answer the second and third research questions a one-way between-groups ANCOVA was conducted to compare the effect of reading different forms of text on incidental vocabulary learning. When the scores on the pretest and immediate posttest were considered, there was a significant difference between groups,  $F(3, 78) = 3.81, p = .01$ , partial eta squared = .13. Post hoc tests using the Bonferroni adjustment were conducted to compare the mean differences between groups. The post hoc test showed that the Plain Text Group had a significant difference with the Glossed Text Group ( $p = .01$ ), and the Plain Text Group also had a significant difference with English-first Bilingual Reading Group ( $p = .04$ ). When the pretest and delayed posttest scores were analyzed, there was also a significant difference between groups ( $F(3, 78) = 5.11, p = .00$ , partial eta squared = .16). A significant difference was found between the Plain Text Group and the two bilingual groups. Table 5 shows the between-groups comparisons for the immediate posttest scores and for the delayed posttest scores.

Table 5. *Results of Analyses of Variance between Groups*

	Group	PTG	GTG	EBRG	CBRG
Immediate Posttest	PTG	-			
	GTG	.01*			
	EBRG	.04*	1		
	CBRG	.07	1	1	
Delayed Posttest	PTG	-			
	GTG	.48			
	EBRG	.00*	.14		
	CBRG	.04*	1	1	

Note.  $p < .05$  \*

In summary, the analysis showed: (a) All four groups made significant gains in lexical knowledge through completing the treatments, (b) Those who read glossed text and bilingual text had significantly durable knowledge gain, (c) The mean scores of participants who read glossed text and read the English version of the text before the Chinese version were significantly higher than the scores of participants who only read the English version of the text in the immediate

posttest, (d) The knowledge gains of participants who read bilingual texts were significantly higher on the delayed posttest than those who only read the English version of the text.

### 3.6 Discussion

In response to the first research question, the results of this study indicated that reading bilingual materials contributed to the acquisition of vocabulary knowledge. Each of the bilingual reading conditions contributed to significant gains in vocabulary knowledge. The results showed that the vocabulary test scores increased by 25% and 23% through reading the bilingual materials. This finding is supported by the results of Hu et al. 's (2012) study indicating that reading bilingual books may contribute to vocabulary learning. In their study, native Chinese participants were involved in an eight-week treatment where they read English-Chinese bilingual books for one and a half hours every week. Hu et al. compared the statistics obtained from pre – and post assessments to report on their participants' English language development. They found that the number of words participants could identify had an increase of 28% and 27.2% for two groups of target words. The present study found slightly smaller vocabulary knowledge gains. There are two reasons for the slightly smaller increases in knowledge in the present study. First, the lower scores in this study may be due to the fact that the participants were tested on their knowledge of form-meaning connection in the present study rather than knowledge of spelling. Research suggests that knowledge of written form is gained more easily than knowledge of form-meaning connection (Webb, 2005, 2007, 2008, 2009a, 2009b). Second, the reading session was conducted only once in this study rather than multiple times in Hu et al.'s (2012) study. Research on incidental vocabulary learning tends to suggest that gains are larger when learners read multiple texts rather than a single text (Horst, 2005; Webb & Chang, 2015).

Significant gains by participants who read the English-only text showed that there were also learning effects through reading the plain text. The gains made through reading plain text were 10% on the immediate post test. Although the size of the gain is relatively small, it is consistent with many earlier studies of incidental vocabulary learning through reading L2 texts (Day, Omura & Hiramatsu, 1992; Waring & Takaki, 2003). There was however, no statistically significant increase in vocabulary knowledge from pretest to the delayed posttest for the group

who only read the English text. A lack of durable incidental learning gains has also been found in other studies (Waring & Takaki, 2003).

The fact that the Plain Text Group were able to incidentally learn words indicates that the English version of the text was at the appropriate level for the participants. It is important to note that this may negate the advantage that the translations in the bilingual learning conditions provide.

In answer to the second research question, the results indicated that the order of reading L1 and L2 bilingual versions of the text had no significant influence on vocabulary learning. This result does not provide any clear support for the theories of SLA discussed earlier. From the standpoint of the noticing hypothesis and the desirable difficulty hypothesis, learning should be superior in the L2-L1 order because readers may be more likely to notice and attend to unfamiliar language (noticing hypothesis), and/or process the language in the text more deeply (desirable difficulty) in that order. From the standpoint of the theory of errorless learning, more vocabulary may be learned in the L1-L2 direction because readers are less likely to make errors in relation to the L2 version of the text after having read the L1 version of the text. Perhaps, the reason why there was no difference found between the two bilingual learning conditions may be that the relatively short reading materials used in this study enabled the participants to more easily recall the information found in the first version of the text when reading the second version. This may have allowed participants to more easily notice and attend to language features when reading the subsequent L2 version in the L1-L2 orders. Similarly, unfamiliar words encountered in the L2 version in the L1-L2 order may have also been processed deeply because the readers were able to focus on these words and try to recall their L1 meanings. Similarly, although the L1-L2 order may lead to fewer errors in comprehension when reading in that direction, reading short texts may have reduced the potential for errors made in the L2-L1 direction to be remembered. Reading longer bilingual versions of a text in order might have a different effect on vocabulary learning, because greater spacing between reading L1 and L2 versions may reduce the reader's ability to link the information encountered in the two versions. However, the results suggest that the order of reading bilingual text may not affect vocabulary learning if learners move from reading one version of a text to its translation in a relatively short time.

In answer to the third research question, the results indicated that bilingual reading was as effective as glossed reading for learning words. There were no significant differences in learning gains between these groups. It should be noted however, that the group that read glossed text and the group that read English text before the Chinese version of the text significantly outperformed the group that read plain text in the immediate posttest. Also in the delayed posttest, only the two bilingual groups had significantly higher test scores than the plain text group. Lee and VanPatten (1995) suggested that from the perspective of noticing and attention, glossed target words should have a greater chance to be learned by participants because the glossing helps to focus readers' attention on the target words in the text. Thus, it is reasonable to believe that bilingual reading would be less effective in vocabulary learning than glossed reading. However, the results of this study did not support the assumption as there was no significant difference found between glossed reading and bilingual reading.

The lack of a difference between the gloss condition and the two bilingual conditions may be due to the fact that the relatively short length of the reading material enabled participants to notice and attend to the unfamiliar words in the bilingual reading conditions. Also, in the bilingual reading conditions, the L1 translation of the material enabled participants to make less effort in understanding the material. The low burden on comprehension may have given participants more time to focus on the learning of unknown words.

### 3.6.1 Pedagogical implications

The findings indicate that bilingual text, as well as more traditional forms of text (plain text, glossed text) may make useful contributions to L2 vocabulary learning in reading programs. In bilingual text, the translation of the L2 text may be helpful not only for reading comprehension but also for incidental vocabulary acquisition. There are reasons why there is value in including bilingual texts in reading programs. First, language teachers and learners would have a wider range of appropriate reading materials because bilingual books may reduce the potential for learners to misunderstand content. Second, learners are able to read bilingual materials that are beyond their proficiency level and still learn new words through the reading process. Bilingual books also allow greater flexibility of learning and teaching. It is very likely that language learners have different background knowledge even if they are from the same class using the same curriculum. Thus, in glossed reading materials, the selection of glossed words is

unlikely to meet every reader's individual learning needs. In contrast, reading bilingual books gives readers the opportunity to learn every unknown word at their own pace. This may help to facilitate vocabulary learning both inside and out of the classroom.

### 3.6.2 Limitations and suggestions for future research

Several elements of this study could be modified in future studies in order to further investigate the effects of bilingual reading on vocabulary learning. It would be useful to examine the influence of time on the effects of reading bilingual books. The same treatment time was used in this study for the bilingual reading conditions. However, research indicates that time on task can influence the vocabulary gains made through different learning conditions (Webb, 2005). Reading two versions of the same text is likely to take a different amount of time than reading one L2 version of the text. This leads to the question of efficacy and whether more time-consuming reading tasks lead to greater learning (Nation & Webb, 2011). Thus, it would be useful to examine how the time given to read bilingual and plain text materials made one type of text more efficient for vocabulary learning.

The second element that could be modified in a future study is the format of bilingual texts. In the present study, participants either read the English version of the text before the Chinese version or the Chinese before the English text. These two versions of the texts were presented on separate pages. It would be useful to investigate other ways of presenting bilingual texts for reading. For example, future studies could include the L1 and L2 texts in columns on the same page, or provide the translation sentence by sentence, or paragraph by paragraph. Including L1 and L2 versions of the same text on the same page may allow a form of contrastive analysis to occur when reading that may help to increase vocabulary learning (Laufer & Girsai, 2008). It would thus be useful to investigate whether the placement of the L1 and L2 versions of the material affected vocabulary learning.

A final limitation relates to the ways of assessing participants' vocabulary learning. In this study, only receptive knowledge of target words was measured in the form of meaning recall tests. Future research can build upon the present study by extending the present research design to include different types of tests assessing vocabulary knowledge. For example, the extent to which participants were able recall the L2 vocabulary and link it to the L1 meaning was not examined in this study. An argument could be made that the L2-L1 order may lead readers to

recall the L2 form of words during the subsequent L1 reading. This additional productive component of the reading could have a positive effect on learning that may make that order superior in developing productive vocabulary knowledge (Nation & Webb, 2011; Waring, 1997; Webb, 2009b).

### 3.7 Conclusion

The findings of the present study indicate that bilingual books can be a useful tool for vocabulary learning. The vocabulary gains through reading bilingual text were similar to reading glossed text and greater than reading English only text. These findings show the value of involving bilingual reading in language learning. Also, the study indicates the reading order of bilingual texts did not affect the learning of L2 vocabulary.

## Chapter 4 Conclusion

The present study investigates the effects of bilingual books on vocabulary learning. Eighty-three EFL learners in China were divided into four reading groups: English-only text group, glossed text group, the group that read English version of the material before Chinese version, and the group that read Chinese version of the material before English version. After the four groups of participants read the materials, their vocabulary knowledge gains through reading were tested. Also, the effects of reading bilingual materials, reading glossed text, and reading English-only text were compared.

### 4.1 Findings and implications

The main findings are as follows. The participants who read English-only text, glossed text, and bilingual texts all made significant vocabulary knowledge gains through reading the material. Reading glossed text and bilingual texts enabled participants to get significantly higher scores in the delayed posttest than in pretest. That is, reading glossed text and reading bilingual texts contributed to significant durable knowledge gains. Compared to participants who read the English-only material, those who read glossed text and bilingual texts performed significantly better in the immediate posttest. After reading the material, those who read glossed and bilingual versions of the material learned significantly more new words than those who read plain text. One week after the treatment, the participants who read glossed text and the participants who read the English version of the text before the Chinese version significantly outperformed those who only read the English text in the delayed posttest. The findings indicated the value of using bilingual books in vocabulary learning. Also, the reading order of the English version and Chinese version of the bilingual texts may not affect the knowledge gains.

The present study provides some useful implications for language learning. First, a wider range of appropriate reading materials should be available for language teachers and learners. Bilingual books can reduce the potential of misunderstanding content as they enable readers to get correct meaning of the content from text written in their L1. Second, learners are able to read bilingual materials with greater flexibility. In EFL classrooms, it is very likely that learners with different proficiency levels and different background knowledge use the same curriculum. Using glossed text as reading material is unlikely to meet every learner's needs because the target



vocabulary may be known to one learner but not to the other. Bilingual books allow every reader to have the opportunity to learn L2 vocabulary at their own pace. A further benefit to bilingual books is that they enable language learners to read beyond their proficiency level and still learn new words in the reading. Bilingual books thus have value both inside and out of the classroom.

The results of the present study indicate that reading bilingual materials or bilingual books contributes to learning L2 vocabulary, and that the gains in vocabulary knowledge may be similar to those made through reading glossed text. Moreover, this study also showed the vocabulary learning gains may be greater through reading bilingual text than reading plain text. Together these findings indicate that there is value in using bilingual reading to promote L2 vocabulary learning. The research also revealed that the order of reading the L1 and L2 texts did not affect the learning of unknown words. However, because almost no research has focused on the use of bilingual materials for vocabulary (and language) learning, we believe that more research is warranted to further explore this topic.

## References

- Adolphs, S., & Schmitt, N. (2003). Lexical coverage of spoken discourse. *Applied Linguistics*, 24(4), 425-438.
- Alexander, L. G., He, Z., Lv., Z., Shui, S., Du, X., & Li, H. (1987). *New Concept English*. Beijing: Foreign Language Teaching and Research Press.
- Barrera, R.B., Quiroa, R.E., & Valdivia, R. (2003). Spanish in Latino picture storybooks in English: Its use and textural effects. In A.I. Willis, G.E. Garcia, R. Barrera, & V. Harris (Eds.), *Multicultural issues in literacy research and practice* (pp. 145-165). Mahwah, NJ: Erlbaum.
- Bjork, R. A. (1994). Memory and metamemory considerations in the. *Metacognition: Knowing about knowing*, 185.
- Bialystok, E. (1982). On the relationship between knowing and using linguistic forms. *Applied Linguistics* 3(3), 181-206.
- Davis, J. (1989). Facilitating effects of marginal glosses on foreign language reading. *The Modern Language Journal*, 73(1), 41-48.
- Day, R. R., Omura, C., & Hiramatsu, M. (1991). Incidental EFL vocabulary learning and reading. *Reading in a Foreign Language*, 7, 541-551.
- Duff, D., Tomblin, J. B., & Catts, H. (2015). The influence of reading on vocabulary growth: A case for a Matthew Effect. *Journal of Speech, Language, and Hearing Research*, 58(3), 853-864.
- Elley, W. B., & Mangubhai, F. (1983). The impact of reading on second language learning. *Reading research quarterly*, 53-67.
- Ernst-Slavit, G., & Mulhern, M. (2003). Bilingual books: Promoting literacy and biliteracy in the second-language and mainstream classroom. *Reading online*, 7(2), 1096-1232.

- Farran, L. K., Bingham, G. E., & Matthews, M. W. (2012). The relationship between language and reading in bilingual English-Arabic children. *Reading and Writing, 25*(9), 2153-2181.
- Gettys, S., Imhof, L. A., & Kautz, J. O. (2001). Computer-Assisted Reading: The Effect of Glossing Format on Comprehension and Vocabulary Retention. *Foreign language annals, 34*(2), 91-99.
- Gilmore, A. (2007). Authentic materials and authenticity in foreign language learning. *Language teaching, 40*(2), 97-118.
- Grabe, W., & Stoller, F. (1997). Reading and vocabulary development in a second language: A case study. *Second language vocabulary acquisition, 98-122*.
- Al Hashim, Abdulrahman Saad. 2015. *The effect of L1 translation vs. L2 definition on the immediate recall of vocabulary words*. Ph.D. diss., Southern Illinois University at Carbondale, <https://www.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com/docview/1766498417?accountid=15115>
- Horst, M. (2005). Learning L2 vocabulary through extensive reading: A measurement study. *Canadian Modern Language Review, 61*(3), 355-382.
- Hu, R., Chen, X., & Li, X. (2012). Exploring Bilingual Books with Five Chinese First Graders: Children's Responses and Biliteracy Development. *Reading Horizons, 52*.
- Hu, R., & Commeyras, M. (2008). A case study: Emergent biliteracy in English and Chinese of a 5-year old Chinese child with wordless picture books. *Reading Psychology, 29*(1), 1-30.
- Hu, H. M., & Nation, P. (2000). What vocabulary size is needed to read unsimplified texts. *Reading in a Foreign Language, 8*, 689-696.
- Jacobs, G. (1994). What lurks in the margin: Use of vocabulary glosses as a strategy in second language learning. *Issues in Applied Linguistics, 5*, 115-137.

- Joyce, E. E. (1997). Which words should be glossed in L2 reading materials? A study of first, second, and third semester French students' recall. *Pennsylvania Language Forum*, 69, 58–64
- Hayden, S. B. (1997). *An investigation into the effect and patterns of usage of a computer-mediated text in reading comprehension in French*. Unpublished doctoral dissertation, University of Pennsylvania, Pennsylvania.
- Kern, R. G. (1994). The role of mental translation in second language reading. *Studies in Second Language Acquisition*, 16, 441-461.
- Khezrlou, S., & Ellis, R. (2017). Effects of computer-assisted glosses on EFL learners' vocabulary acquisition and reading comprehension in three learning conditions. *System*, 65, 104-116.
- Ko, M. H. (2012). Glossing and second language vocabulary learning. *Tesol Quarterly*, 46(1), 56-79.
- Krashen, S. (1989). We Acquire Vocabulary and Spelling by Reading: Additional Evidence for the Input Hypothesis. *The Modern Language Journal*, 73(4), 440–464.
- Laufer, B. (1989). *What percentage of text lexis is essential for comprehension?* In C. Lauren & M. Nordman (Eds.), *Special language: From humans thinking to thinking machines* (pp. 316–323). Clevedon: Multilingual Matters.
- Laufer, B., & Girsai, N. (2008). Form-focused instruction in second language vocabulary learning: A case for contrastive analysis and translation. *Applied Linguistics*, 29(4), 694-716.
- Laufer, B., & Ravenhorst-Kalovski, G. C. (2010). Lexical threshold revisited: Lexical text coverage, learners' vocabulary size and reading comprehension. *Reading in a foreign language*, 22(1), 15.
- Lee, J. G., & VanPatten, B. (1995). *Making communicative language teaching happen*. New York: McGraw-Hill.

- Lichty, P. (2002). It's a small world after all. *Library Talk*, 49(1), 8-9.
- Liu, S. (2017). An Experimental Research on the Effects of Types of Glossing on Incidental Vocabulary Acquisition through Reading. *Journal of Language Teaching and Research*, 8(4), 782-793.
- Long, M. H. (1981). *Input, interaction, and second-language acquisition*. Annals of the New York academy of sciences, 379(1), 259-278.
- Luo, J. (1993). *A study of the effects of marginal glosses on the reading comprehension of intermediate college students of French* (Unpublished doctoral dissertation). University of Pennsylvania, PA, USA.
- Moradan, A., & Vafaei, M. (2016). The effect of glosses on incidental vocabulary learning of iranian EFL learners. *International Journal of Applied Linguistics and English Literature*, 5(6), 34-42. doi:10.7575/aiac.ijalel.v.5n.6p.34
- Nagata, N. (1999). The effectiveness of computer-assisted interactive glosses. *Foreign Language Annals*, 32, 469-479.
- Nation, I. S. P. (1990). *Teaching and learning vocabulary*. Boston, MA: Heinle & Heinle.
- Nation, I. S. P. (2006). How large a vocabulary is needed for reading and listening?. *Canadian Modern Language Review*, 63(1), 59-82.
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge; New York;: Cambridge University Press.
- Nation, I. S. P. (2012). *The BNC/COCA word family lists*. Unpublished manuscript. Retrieved from [www.victoria.ac.nz/lals/about/staff/paul-nation](http://www.victoria.ac.nz/lals/about/staff/paul-nation).
- Nation, I.S.P., & Heatley, A. (2002). Range: A program for the analysis of vocabulary in texts [software]. Downloadable from <http://www.vuw.ac.nz/lals/staff/paulnation/nation.aspx>
- Nation, I. S., & Webb, S. A. (2011). *Researching and analyzing vocabulary*. Heinle, Cengage Learning.

- Parker, M. A. (2006). *The contributions of small presses to the field of multicultural children's books* (Order No. 3207646). Available from ProQuest Dissertations & Theses Global. (305354561). Retrieved from <https://www.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com/docview/305354561?accountid=15115>
- Scherfer, P. (1993). Indirect L2-vocabulary learning. *Linguistics*, 31(6), 1141-1153.
- Schmidt, R. (1990). The role of consciousness in second language learning. *Applied linguistics*, 11(2), 129-158.
- Schmidt, R., & Frota, S. (1986). Developing basic conversational ability in a second language: A case study of an adult learner of Portuguese. *Talking to learn: Conversation in second language acquisition*, 237-326.
- Schmitt, N., Jiang, X., & Grabe, W. (2011). The percentage of words known in a text and reading comprehension. *The Modern Language Journal*, 95(1), 26-43.
- Schon, I. (2004). Bilingual books: Celebration vs. confusion. *Booklist*, 101(1), 136-138.
- Semingson, P., Pole, K., & Tommerdahl, J. (2015). Using bilingual books to enhance literacy around the world. *European Scientific Journal*, 3, 1857-7881.
- Skinner B.F. (1954). The science of learning and the art of teaching. *Harvard Educational Review*, 24, 86-97.
- Taylor, A. M. (2014). Glossing frequency and L2 reading comprehension: the influence of CALL glossing. *CALICO Journal*, 31(3), 374-390.
- Taylor, L. K., Bernhard, J. K., Garg, S., & Cummins, J. (2008). Affirming plural belonging: Building on students' family-based cultural and linguistic capital through multiliteracies pedagogy. *Journal of Early Childhood Literacy*, 8(3), 269-294.
- Waring, R. (1997). Graded and extensive reading-questions and answers. *LANGUAGE TEACHER-KYOTO-JALT-*, 21, 9-12.

- Waring, R., & Takaki, M. (2003). At what rate do learners learn and retain new vocabulary from reading a graded reader? *Reading in a Foreign Language*, 15, 1–27.
- Webb, S. (2005). Receptive and productive vocabulary learning: The effects of reading and writing on word knowledge. *Studies in Second Language Acquisition*, 27(1), 33-52.
- Webb, S. (2007). The effects of repetition on vocabulary knowledge. *Applied linguistics*, 28(1), 46-65.
- Webb, S. (2008). Receptive and productive vocabulary sizes of L2 learners. *Studies in Second language acquisition*, 30(1), 79-95.
- Webb, S. (2009a). The effects of pre-learning vocabulary on reading comprehension and writing. *Canadian Modern Language Review*, 65, 441–470.
- Webb, S. (2009b). The effects of receptive and productive learning of word pairs on vocabulary knowledge. *RELC Journal*, 40, 360–376.
- Webb, S., & Chang, A. C. (2015). Second language vocabulary learning through extensive reading with audio support: How do frequency and distribution of occurrence affect learning? *Language Teaching Research*, 19(6), 667-686.
- Webb, S. & Nation, P. (2017). *How vocabulary is learned*. Oxford: Oxford University Press.
- West, M. (1926). *Learning to read a foreign language*. London: Longmans, Green & Company.
- Ying-Hsueh, C., & Good, R. L. (2009). L1 glosses: Effects on EFL learners' reading comprehension and vocabulary retention. *Reading in a Foreign Language*, 21(2), 119-142.

## Appendices

### Appendix A: Dependent Measures

#### Pre-test (One week before the treatments)

Translate the following items 翻译单词和词组

- |                |               |
|----------------|---------------|
| 1. news        | 26. powder    |
| 2. coffee      | 27. task      |
| 3. ignore      | 28. escape    |
| 4. effect      | 29. diet      |
| 5. comfortable | 30. volunteer |
| 6. character   | 31. fresh     |
| 7. knowledge   | 32. leopard   |
| 8. brazil      | 33. prisoner  |
| 9. screen      | 34. special   |
| 10. shore      | 35. young     |
| 11. shave      | 36. adventure |
| 12. trade      | 37. thousand  |
| 13. cape       | 38. complete  |
| 14. plate      | 39. Turkish   |
| 15. curse      | 40. relatives |
| 16. gloom      | 41. sweat     |
| 17. native     | 42. hug       |
| 18. storm      | 43. master    |
| 19. innocent   | 44. golf      |
| 20. confuse    | 45. canary    |
| 21. guarantee  | 46. array     |
| 22. pirate     | 47. slave     |
| 23. explore    | 48. legacy    |
| 24. jail       | 49. owl       |
| 25. sail       | 50. sinker    |

#### Immediate Post-test (Immediate after the treatments)

Translate the following items 翻译单词和词组

1. master
2. sail
3. escape
4. comfortable
5. adventure



6. storm
7. prisoner
8. brazil
9. pirate
10. cape
11. leopard
12. slave
13. Turkish
14. shore
15. canary

**Delayed Post-test** (One week after the treatments)

Translate the following items 翻译单词和词组

1. prisoner
2. escape
3. shore
4. comfortable
5. canary
6. cape
7. leopard
8. Turkish
9. pirate
10. master
11. sail
12. brazil
13. adventure
14. storm
15. slave

## Appendix B: Materials

### Group One: Plain Text

Before I begin my story, I would like to tell you a little about myself.

I was born in the year 1632, in the city of York in the north of England. My father was German, but he came to live and work in England. Soon after that, he married my mother, who was English. Her family name was Robinson, so, when I was born, they called me Robinson, after her.

My father did well in his business and I went to a good school. He wanted me to get a good job and live a quiet, comfortable life. But I didn't want that. I wanted adventure and an exciting life.

'I want to be a sailor and go to sea?' I told my mother and father. They were very unhappy about this.

'Please don't go?' my father said. 'You won't be happy, you know. Sailors have a difficult and dangerous life?' And because I loved him, and he was unhappy, I tried to forget about the sea.

But I couldn't forget, and about a year later, I saw a friend in town. His father had a ship, and my friend said to me, 'We're sailing to London tomorrow. Why don't you come with us?'

And so, on September 1st, 1651, I went to Hull, and the next day we sailed for London.

But, a few days later, there was a strong wind. The sea was rough and dangerous, and the ship went up and down, up and down. I was very ill, and very afraid.

'Oh, I don't want to die!' I cried. 'I want to live! If I live, I'll go home and never go to sea again!'

The next day the wind dropped, and the sea was quiet and beautiful again. 'Well, Bob,' my friend laughed. 'How do you feel now? The wind wasn't too bad.' 'What!' I cried. 'It was a terrible storm.'

'Oh, that wasn't a storm,' my friend answered. 'Just a little wind. Forget it. Come and have a drink.'

After a few drinks with my friend, I felt better. I forgot about the danger and decided not to go home. I didn't want my friends and family to laugh at me!

I stayed in London for some time, but I still wanted to go to sea. So, when the captain of a ship asked me to go with him to Guinea in Africa, I agreed. And so I went to sea for the second time.

It was a good ship and everything went well at first, but I was very ill again. Then, when we were near the Canary Islands, a Turkish pirate ship came after us. They were famous thieves of the sea at that time. There was a long, hard fight, but when it finished, we and the ship were prisoners.

The Turkish captain and his men took us to Sallee in Morocco. They wanted to sell us as slaves in the markets there. But in the end the Turkish captain decided to keep me for himself, and took me home with him. This was a sudden and terrible change in my life. I was now a slave and this Turkish captain was my master.

For two long years I lived the life of a slave. I worked in escape, but it was never possible. I thought about it day and night. My master liked to go fishing in a little boat, and he always took me with him. A man called Moely, and a young boy also went with us.

One day my master said to us, 'Some of my friends want to go fishing tomorrow. Get the boat ready.'

So we put a lot of food and drink on the boat, and the next morning, we waited for my master and his friends. But when my master arrived, he was alone.

'My friends don't want to go fishing today,' he said to me. 'But you go with Moely and the boy, and catch some fish for our supper tonight.'

'Yes, master,' I answered quietly, but inside I was excited. 'Perhaps now I can escape,' I said to myself.

My master went back to his friends and we took the boat out to sea. For a time we fished quietly, and then I moved carefully behind Moely and knocked him into the water. 'Swim!' I cried.

'Swim to the shore!'

My master liked to shoot seabirds and so there were guns on the boat. Quickly, I took one of these guns. Moely was swimming after the boat and I shouted to him:

‘Go back to the shore! You can swim there! It’s not too far. I won’t hurt you, but if you come near the boat, I’ll shoot you through the head!’ So Moely turned, and swam back to the shore as quickly as he could.

Then I said to the boy, ‘Xury, if you help me, I’ll be a good friend to you. If you don’t help me, I’ll push you into the sea too.’

But Xury was happy to help me. ‘I’ll go all over the world with you,’ he cried.

I wanted to sail to the Canary Islands, but I was afraid to go too far from the shore. It was only a small boat. And so we sailed on south for some days. We had very little water, and it was dangerous country here, with many wild animals. We were afraid, but we often had to go on shore to get more water. Once I used a gun to shoot a wild animal. I don’t know what animal it was, but it made a good meal.

For about ten or twelve days we sailed on south, down the coast of Africa. Then one day we saw some people on the shore— strange, wild people, who did not look friendly. By now we had very little food, and We really needed help. we were afraid, but we had to go on shore.

At first, they were afraid of us, too. Perhaps white people never visited this coast. We did not speak their language, of course, so we used our hands and faces to show that we were hungry. They came with food for us, but then they moved away quickly. We carried the food to our boat, and they watched us. I tried to thank them, but I had nothing to give them.

Just then two big wild cats came down to the shore from the mountains. I think they were leopards. The people were afraid of these wild cats, and the women cried out. Quickly, I took a gun, and shot one of the animals. The second wild cat ran back up into the mountains.

Guns were new to these African people, and they were afraid of the loud noise and the smoke. But they were happy about the dead wild cat. I gave them the meat of the dead animal, and they gave us more food and water.

We now had a lot of food and water, and we sailed on. Eleven days later we came near the Cape Verde Islands. We could see them, but we couldn't get near because there was no wind. We waited.

Suddenly Xury called to me, 'Look, a ship!'

He was right! We called and shouted and sailed our little boat as fast as we could. But the ship did not see us. Then I re-membered the guns which made a lot of smoke. A few minutes later the ship saw us and turned.

When we were on the ship, the Portuguese captain listened to my story. He was going to Brazil and agreed to help me, but he wanted nothing for his help. 'No,' he said, when I tried to pay him. 'Perhaps, one day, someone will help me when I need it.'

But he gave me money for my boat, and for Xury, too. At first, I did not want to sell Xury as a slave, after all our dangerous adventures together. But Xury was happy to go to the captain, and the captain was a good man. 'In ten years' time,' he said, 'Xury can go free.'

When we arrived in Brazil three weeks later, I said goodbye to the captain and Xury, left the ship, and went to begin a new life.

## Group Two: Glossed Text

Before I begin my story, I would like to tell you a little about myself.

I was born in the year 1632, in the city of York in the north of England. My father was German, but he came to live and work in England. Soon after that, he married my mother, who was English. Her family name was Robinson, so, when I was born, they called me Robinson, after her.

My father did well in his business and I went to a good school. He wanted me to get a good job and live a quiet, comfortable (舒适的) life. But I didn't want that. I wanted adventure (冒险) and an exciting life.

'I want to be a sailor and go to sea?' I told my mother and father. They were very unhappy about this.

'Please don't go?' my father said. 'You won't be happy, you know. Sailors have a difficult and dangerous life?' And because I loved him, and he was unhappy, I tried to forget about the sea.

But I couldn't forget, and about a year later, I saw a friend in town. His father had a ship, and my friend said to me, 'We're sailing (航行) to London tomorrow. Why don't you come with us?'

And so, on September 1st, 1651, I went to Hull, and the next day we sailed for London.

But, a few days later, there was a strong wind. The sea was rough and dangerous, and the ship went up and down, up and down. I was very ill, and very afraid.

'Oh, I don't want to die!' I cried. 'I want to live! If I live, I'll go home and never go to sea again!'

The next day the wind dropped, and the sea was quiet and beautiful again. 'Well, Bob,' my friend laughed. 'How do you feel now? The wind wasn't too bad.' 'What!' I cried. 'It was a terrible storm (暴风雨).'

'Oh, that wasn't a storm,' my friend answered. 'Just a little wind. Forget it. Come and have a drink.'

After a few drinks with my friend, I felt better. I forgot about the danger and decided not to go home. I didn't want my friends and family to laugh at me!

I stayed in London for some time, but I still wanted to go to sea. So, when the captain of a ship asked me to go with him to Guinea in Africa, I agreed. And so I went to sea for the second time.

It was a good ship and everything went well at first, but I was very ill again. Then, when we were near the Canary (金丝雀) Islands, a Turkish (土耳其的) pirate (海盜) ship came after us. They were famous thieves of the sea at that time. There was a long, hard fight, but when it finished, we and the ship were prisoners (囚犯) .

The Turkish captain and his men took us to Salé in Morocco. They wanted to sell us as slaves (奴隶) in the markets there. But in the end the Turkish captain decided to keep me for himself, and took me home with him. This was a sudden and terrible change in my life. I was now a slave and this Turkish captain was my master (主人) .

For two long years I lived the life of a slave. I worked in escape (逃) , but it was never possible. I thought about it day and night. My master liked to go fishing in a little boat, and he always took me with him. A man called Moely, and a young boy also went with us.

One day my master said to us, 'Some of my friends want to go fishing tomorrow. Get the boat ready.'

So we put a lot of food and drink on the boat, and the next morning, we waited for my master and his friends. But when my master arrived, he was alone.

'My friends don't want to go fishing today,' he said to me. 'But you go with Moely and the boy, and catch some fish for our supper tonight.'

'Yes, master,' I answered quietly, but inside I was excited. 'Perhaps now I can escape,' I said to myself.

My master went back to his friends and we took the boat out to sea. For a time we fished quietly, and then I moved carefully behind Moely and knocked him into the water. 'Swim!' I cried.

‘Swim to the shore (海岸) !’

My master liked to shoot seabirds and so there were guns on the boat. Quickly, I took one of these guns. Moely was swimming after the boat and I shouted to him:

‘Go back to the shore! You can swim there! It’s not too far. I won’t hurt you, but if you come near the boat, I’ll shoot you through the head!’ So Moely turned, and swam back to the shore as quickly as he could.

Then I said to the boy, ‘Xury, if you help me, I’ll be a good friend to you. If you don’t help me, I’ll push you into the sea too.’

But Xury was happy to help me. ‘I’ll go all over the world with you,’ he cried.

I wanted to sail to the Canary Islands, but I was afraid to go too far from the shore. It was only a small boat. And so we sailed on south for some days. We had very little water, and it was dangerous country here, with many wild animals. We were afraid, but we often had to go on shore to get more water. Once I used a gun to shoot a wild animal. I don’t know what animal it was, but it made a good meal.

For about ten or twelve days we sailed on south, down the coast of Africa. Then one day we saw some people on the shore— strange, wild people, who did not look friendly. By now we had very little food, and We really needed help. we were afraid, but we had to go on shore.

At first, they were afraid of us, too. Perhaps white people never visited this coast. We did not speak their language, of course, so we used our hands and faces to show that we were hungry. They came with food for us, but then they moved away quickly. We carried the food to our boat, and they watched us. I tried to thank them, but I had nothing to give them.

Just then two big wild cats came down to the shore from the mountains. I think they were leopards (美洲豹). The people were afraid of these wild cats, and the women cried out. Quickly, I took a gun, and shot one of the animals. The second wild cat ran back up into the mountains.

Guns were new to these African people, and they were afraid of the loud noise and the smoke.



But they were happy about the dead wild cat. I gave them the meat of the dead animal, and they gave us more food and water.

We now had a lot of food and water, and we sailed on. Eleven days later we came near the Cape (海角) Verde Islands. We could see them, but we couldn't get near because there was no wind. We waited.

Suddenly Xury called to me, 'Look, a ship!'

He was right! We called and shouted and sailed our little boat as fast as we could. But the ship did not see us. Then I re-membered the guns which made a lot of smoke. A few minutes later the ship saw us and turned.

When we were on the ship, the Portuguese captain listened to my story. He was going to Brazil (巴西) and agreed to help me, but he wanted nothing for his help. 'No,' he said, when I tried to pay him. 'Perhaps, one day, someone will help me when I need it.'

But he gave me money for my boat, and for Xury, too. At first, I did not want to sell Xury as a slave, after all our dangerous adventures together. But Xury was happy to go to the captain, and the captain was a good man. 'In ten years' time,' he said, 'Xury can go free.'

When we arrived in Brazil three weeks later, I said goodbye to the captain and Xury, left the ship, and went to begin a new life.

Group 3: L2>>L1

(English Version)

Before I begin my story, I would like to tell you a little about myself.

I was born in the year 1632, in the city of York in the north of England. My father was German, but he came to live and work in England. Soon after that, he married my mother, who was English. Her family name was Robinson, so, when I was born, they called me Robinson, after her.

My father did well in his business and I went to a good school. He wanted me to get a good job and live a quiet, comfortable life. But I didn't want that. I wanted adventure and an exciting life.

'I want to be a sailor and go to sea?' I told my mother and father. They were very unhappy about this.

'Please don't go?' my father said. 'You won't be happy, you know. Sailors have a difficult and dangerous life?' And because I loved him, and he was unhappy, I tried to forget about the sea.

But I couldn't forget, and about a year later, I saw a friend in town. His father had a ship, and my friend said to me, 'We're sailing to London tomorrow. Why don't you come with us?'

And so, on September 1st, 1651, I went to Hull, and the next day we sailed for London.

But, a few days later, there was a strong wind. The sea was rough and dangerous, and the ship went up and down, up and down. I was very ill, and very afraid.

'Oh, I don't want to die!' I cried. 'I want to live! If I live, I'll go home and never go to sea again!'

The next day the wind dropped, and the sea was quiet and beautiful again. 'Well, Bob,' my friend laughed. 'How do you feel now? The wind wasn't too bad.' 'What!' I cried. 'It was a terrible storm.'

'Oh, that wasn't a storm,' my friend answered. 'Just a little wind. Forget it. Come and have a drink.'

After a few drinks with my friend, I felt better. I forgot about the danger and decided not to go home. I didn't want my friends and family to laugh at me!

I stayed in London for some time, but I still wanted to go to sea. So, when the captain of a ship asked me to go with him to Guinea in Africa, I agreed. And so I went to sea for the second time.

It was a good ship and everything went well at first, but I was very ill again. Then, when we were near the Canary Islands, a Turkish pirate ship came after us. They were famous thieves of the sea at that time. There was a long, hard fight, but when it finished, we and the ship were prisoners.

The Turkish captain and his men took us to Salée in Morocco. They wanted to sell us as slaves in the markets there. But in the end the Turkish captain decided to keep me for himself, and took me home with him. This was a sudden and terrible change in my life. I was now a slave and this Turkish captain was my master.

For two long years I lived the life of a slave. I worked in escape, but it was never possible. I thought about it day and night. My master liked to go fishing in a little boat, and he always took me with him. A man called Moely, and a young boy also went with us.

One day my master said to us, 'Some of my friends want to go fishing tomorrow. Get the boat ready.'

So we put a lot of food and drink on the boat, and the next morning, we waited for my master and his friends. But when my master arrived, he was alone.

'My friends don't want to go fishing today,' he said to me. 'But you go with Moely and the boy, and catch some fish for our supper tonight.'

'Yes, master,' I answered quietly, but inside I was excited. 'Perhaps now I can escape,' I said to myself.

My master went back to his friends and we took the boat out to sea. For a time we fished quietly, and then I moved carefully behind Moely and knocked him into the water. 'Swim!' I cried.

'Swim to the shore!'

My master liked to shoot seabirds and so there were guns on the boat. Quickly, I took one of these guns. Moely was swimming after the boat and I shouted to him:

‘Go back to the shore! You can swim there! It’s not too far. I won’t hurt you, but if you come near the boat, I’ll shoot you through the head!’ So Moely turned, and swam back to the shore as quickly as he could.

Then I said to the boy, ‘Xury, if you help me, I’ll be a good friend to you. If you don’t help me, I’ll push you into the sea too.’

But Xury was happy to help me. ‘I’ll go all over the world with you,’ he cried.

I wanted to sail to the Canary Islands, but I was afraid to go too far from the shore. It was only a small boat. And so we sailed on south for some days. We had very little water, and it was dangerous country here, with many wild animals. We were afraid, but we often had to go on shore to get more water. Once I used a gun to shoot a wild animal. I don’t know what animal it was, but it made a good meal.

For about ten or twelve days we sailed on south, down the coast of Africa. Then one day we saw some people on the shore— strange, wild people, who did not look friendly. By now we had very little food, and We really needed help. we were afraid, but we had to go on shore.

At first, they were afraid of us, too. Perhaps white people never visited this coast. We did not speak their language, of course, so we used our hands and faces to show that we were hungry. They came with food for us, but then they moved away quickly. We carried the food to our boat, and they watched us. I tried to thank them, but I had nothing to give them.

Just then two big wild cats came down to the shore from the mountains. I think they were leopards. The people were afraid of these wild cats, and the women cried out. Quickly, I took a gun, and shot one of the animals. The second wild cat ran back up into the mountains.

Guns were new to these African people, and they were afraid of the loud noise and the smoke. But they were happy about the dead wild cat. I gave them the meat of the dead animal, and they gave us more food and water.

We now had a lot of food and water, and we sailed on. Eleven days later we came near the Cape Verde Islands. We could see them, but we couldn't get near because there was no wind. We waited.

Suddenly Xury called to me, 'Look, a ship!'

He was right! We called and shouted and sailed our little boat as fast as we could. But the ship did not see us. Then I re-membered the guns which made a lot of smoke. A few minutes later the ship saw us and turned.

When we were on the ship, the Portuguese captain listened to my story. He was going to Brazil and agreed to help me, but he wanted nothing for his help. 'No,' he said, when I tried to pay him. 'Perhaps, one day, someone will help me when I need it.'

But he gave me money for my boat, and for Xury, too. At first, I did not want to sell Xury as a slave, after all our dangerous adventures together. But Xury was happy to go to the captain, and the captain was a good man. 'In ten years' time,' he said, 'Xury can go free.'

When we arrived in Brazil three weeks later, I said goodbye to the captain and Xury, left the ship, and went to begin a new life.

(Chinese Version)

开始我的故事之前,我想先向你谈一点我自己的情况。

我 1632 年出生在英国北部的约克郡。我父亲是德国人,但他却来到英国居住和工作。此后不久,他与我母亲结了婚。我母亲是英国人,娘家姓鲁宾孙,因此,我出生后他们都称呼我鲁宾孙,沿用了我母亲的姓氏。

我父亲在生意上做得很出色,并且我也进了一所好学校。他希望我找到好的工作,过一种平静的、舒适的生活。但是我不希望如此。我喜欢冒险和刺激的生活。“我想成为一名水手去航行,”我告诉父母亲。他们对此很不高兴。“不要去,”父亲说。“你不会幸福的,你知

道。水手过着艰苦而且危险的生活。”因为我爱父亲,他不高兴,我便试图忘掉大海。

但不可能忘掉,大约一年后,我在镇里遇到一个朋友。他的父亲有一艘船,我的朋友对我说,“明天我们航行去伦敦。你为什么不和我们一起走呢?”

于是,1651年9月1日,我到了赫尔港,第二天我们驶向伦敦。但是,几天后,刮起了狂风,狂暴的大海危机四伏,船不断颠簸。我晕船晕得厉害,非常害怕。

“哦,我不想死!”我哭喊起来。“我想活着!假如我活着,我就要回家,再也不出海了!”

第二天,风停了,大海又重新恢复了平静而美丽。

“好了,鲍伯,”我的朋友笑着说。“现在你感觉如何?这风并不太令人讨厌。”

“什么!”我大叫起来。“这可是一场可怕的风暴。”

“哦,这不算风暴,”我的朋友回答。“仅仅是小风而已。忘记它吧,来,喝一杯。”和朋友喝了几杯,我感觉好多了。我忘记了危险,决定不回家了。我不愿意我的朋友和家人嘲笑我!

我在伦敦停留了一段时间,但我仍然想去航行。所以,当一位船长要求我和他一起去非洲的几内亚时,我答应了。于是,我第二次去航海。这是一艘好船,开始一切都很顺利,但是我又晕得厉害。此后,当我们接近金丝雀群岛时,一艘土耳其海盗船跟上了我们。他们是当时有名的海盗。经过一场长时间激烈的交火,一切都结束时,我们连人带船都成了俘虏。土耳其船长和他的部下把我们带到摩洛哥的萨利。他们想在那儿的市场上把我们当作奴隶卖掉。但最后土耳其船长决定把我留给他自己,带我随他回家。

这是我一生中一次突然的可怕的变故。现在我成了奴隶,这位土耳其船长是我的主人两年多的时间里,我过着奴隶的生活,我在屋子里、花园里干活,每天都计划着逃跑,但一直没能成功。我日夜思考着逃跑的事。我的主人喜欢乘小船去钓鱼,而且总是带上我一个名叫莫雷的男人及一个小男孩也总跟随着我们。

一天主人对我们说:“我有些朋友明天想去钓鱼,把船给准备好。”于是,我们搬了很多食

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我想驶向金丝雀岛,但是不敢远离海岸,这只是一只小船。因此我们向南航行了几天,我们只有很少的水,这儿是危险的国度,有许多野生动物。我们非常害怕,但是我们常常不得不上岸去取水,有一次我用枪射死了一只野兽,我不知道这是什么动物,但它成了一顿美餐。沿着非洲海岸我们朝南航行了大约 10 天至 12 天,随后一天我们看到岸上有些人——古怪的野人,他们看起来并不友善,那时我们的食物很少了,我们实在需要帮助,我们害怕,但我们不得不上岸。

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现在我们有了很多的食物和水,我们继续航行。11天后我们接近佛得角群岛。我们可以看见它们,但由于没有风我们不能靠近。我们只能等候着。

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他是对的!我们叫喊着并且尽可能快地划着小船。但是那只船并没看到我们。这时我想起枪可以产生很多烟雾。几分钟后那只船看到了我们并且转了过来。

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三星期后我们抵达巴西,我告别了船长和苏里,离开了船,开始了新的生活。



## Group 4: L1&gt;&gt;L2

## (Chinese Version)

开始我的故事之前,我想先向你谈一点我自己的情况。

我 1632 年出生在英国北部的约克郡。我父亲是德国人,但他却来到英国居住和工作。此后不久,他与我母亲结了婚。我母亲是英国人,娘家姓鲁宾孙,因此,我出生后他们都称呼我鲁宾孙,沿用了我母亲的姓氏。

我父亲在生意上做得很出色,并且我也进了一所好学校。他希望我找到好的工作,过一种平静的、舒适的生活。但是我不希望如此。我喜欢冒险和刺激的生活。“我想成为一名水手去航行,”我告诉父母亲。他们对此很不高兴。“不要去,”父亲说。“你不会幸福的,你知道。水手过着艰苦而且危险的生活。”因为我爱父亲,他不高兴,我便试图忘掉大海。

但我不可能忘掉,大约一年后,我在镇里遇到一个朋友。他的父亲有一艘船,我的朋友对我说,“明天我们航行去伦敦。你为什么不和我们一起走呢?”

于是,1651 年 9 月 1 日,我到了赫尔港,第二天我们驶向伦敦。但是,几天后,刮起了狂风,狂暴的大海危机四伏,船不断颠簸。我晕船晕得厉害,非常害怕。

“哦,我不想死!”我哭喊起来。“我想活着!假如我活着,我就要回家,再也不出海了!”

第二天,风停了,大海又重新恢复了平静而美丽。

“好了,鲍伯,”我的朋友笑着说。“现在你感觉如何?这风并不太令人讨厌。”

“什么!”我大叫起来。“这可是一场可怕的风暴。”

“哦,这不算风暴,”我的朋友回答。“仅仅是小风而已。忘记它吧,来,喝一杯。”和朋友喝了几杯,我感觉好多了。我忘记了危险,决定不回家了。我不愿意我的朋友和家人嘲笑我!

我在伦敦停留了一段时间,但我仍然想去航行。所以,当一位船长要求我和他一起去非洲的几内亚时,我答应了。于是,我第二次去航海。这是一艘好船,开始一切都很顺利,但是我

又晕得厉害。此后,当我们接近金丝雀群岛时,一艘土耳其海盗船跟上了我们。他们是当时有名的海盗。经过一场长时间激烈的交火,一切都结束时,我们连人带船都成了俘虏。土耳其船长和他的部下把我们带到摩洛哥的萨利。他们想在那儿的市场上把我们当作奴隶卖掉。但最后土耳其船长决定把我留给他自己,带我随他回家。

这是我一生中一次突然的可怕的变故。现在我成了奴隶,这位土耳其船长是我的主人。两年多的时间里,我过着奴隶的生活,我在屋子里、花园里干活,每天都计划着逃跑,但一直没能成功。我日夜思考着逃跑的事。我的主人喜欢乘小船去钓鱼,而且总是带上我一个名叫莫雷的男人及一个小男孩也总跟随着我们。

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三星期后我们抵达巴西,我告别了船长和苏里,离开了船,开始了新的生活。

(English Version)

Before I begin my story, I would like to tell you a little about myself.

I was born in the year 1632, in the city of York in the north of England. My father was German, but he came to live and work in England. Soon after that, he married my mother, who was English. Her family name was Robinson, so, when I was born, they called me Robinson, after her.

My father did well in his business and I went to a good school. He wanted me to get a good job and live a quiet, comfortable life. But I didn't want that. I wanted adventure and an exciting life.

'I want to be a sailor and go to sea?' I told my mother and father. They were very unhappy about this.

'Please don't go?' my father said. 'You won't be happy, you know. Sailors have a difficult and dangerous life?' And because I loved him, and he was unhappy, I tried to forget about the sea.

But I couldn't forget, and about a year later, I saw a friend in town. His father had a ship, and my friend said to me, 'We're sailing to London tomorrow. Why don't you come with us?'

And so, on September 1st, 1651, I went to Hull, and the next day we sailed for London.

But, a few days later, there was a strong wind. The sea was rough and dangerous, and the ship went up and down, up and down. I was very ill, and very afraid.

'Oh, I don't want to die!' I cried. 'I want to live! If I live, I'll go home and never go to sea again!'

The next day the wind dropped, and the sea was quiet and beautiful again. 'Well, Bob,' my friend laughed. 'How do you feel now? The wind wasn't too bad.' 'What!' I cried. 'It was a terrible storm.'

'Oh, that wasn't a storm,' my friend answered. 'Just a little wind. Forget it. Come and have a drink.'

After a few drinks with my friend, I felt better. I forgot about the danger and decided not to go home. I didn't want my friends and family to laugh at me!

I stayed in London for some time, but I still wanted to go to sea. So, when the captain of a ship asked me to go with him to Guinea in Africa, I agreed. And so I went to sea for the second time.

It was a good ship and everything went well at first, but I was very ill again. Then, when we were near the Canary Islands, a Turkish pirate ship came after us. They were famous thieves of the sea at that time. There was a long, hard fight, but when it finished, we and the ship were prisoners.

The Turkish captain and his men took us to Sallee in Morocco. They wanted to sell us as slaves in the markets there. But in the end the Turkish captain decided to keep me for himself, and took me home with him. This was a sudden and terrible change in my life. I was now a slave and this Turkish captain was my master.

For two long years I lived the life of a slave. I worked in escape, but it was never possible. I thought about it day and night. My master liked to go fishing in a little boat, and he always took me with him. A man called Moely, and a young boy also went with us.

One day my master said to us, 'Some of my friends want to go fishing tomorrow. Get the boat ready.'

So we put a lot of food and drink on the boat, and the next morning, we waited for my master and his friends. But when my master arrived, he was alone.

'My friends don't want to go fishing today,' he said to me. 'But you go with Moely and the boy, and catch some fish for our supper tonight.'

'Yes, master,' I answered quietly, but inside I was excited. 'Perhaps now I can escape,' I said to myself.

My master went back to his friends and we took the boat out to sea. For a time we fished quietly, and then I moved carefully behind Moely and knocked him into the water. 'Swim!' I cried.

'Swim to the shore!'

My master liked to shoot seabirds and so there were guns on the boat. Quickly, I took one of these guns. Moely was swimming after the boat and I shouted to him:

‘Go back to the shore! You can swim there! It’s not too far. I won’t hurt you, but if you come near the boat, I’ll shoot you through the head!’ So Moely turned, and swam back to the shore as quickly as he could.

Then I said to the boy, ‘Xury, if you help me, I’ll be a good friend to you. If you don’t help me, I’ll push you into the sea too.’

But Xury was happy to help me. ‘I’ll go all over the world with you,’ he cried.

I wanted to sail to the Canary Islands, but I was afraid to go too far from the shore. It was only a small boat. And so we sailed on south for some days. We had very little water, and it was dangerous country here, with many wild animals. We were afraid, but we often had to go on shore to get more water. Once I used a gun to shoot a wild animal. I don’t know what animal it was, but it made a good meal.

For about ten or twelve days we sailed on south, down the coast of Africa. Then one day we saw some people on the shore— strange, wild people, who did not look friendly. By now we had very little food, and We really needed help. we were afraid, but we had to go on shore.

At first, they were afraid of us, too. Perhaps white people never visited this coast. We did not speak their language, of course, so we used our hands and faces to show that we were hungry. They came with food for us, but then they moved away quickly. We carried the food to our boat, and they watched us. I tried to thank them, but I had nothing to give them.

Just then two big wild cats came down to the shore from the mountains. I think they were leopards. The people were afraid of these wild cats, and the women cried out. Quickly, I took a gun, and shot one of the animals. The second wild cat ran back up into the mountains.

Guns were new to these African people, and they were afraid of the loud noise and the smoke. But they were happy about the dead wild cat. I gave them the meat of the dead animal, and they gave us more food and water.

We now had a lot of food and water, and we sailed on. Eleven days later we came near the Cape Verde Islands. We could see them, but we couldn’t get near because there was no wind. We waited.

Suddenly Xury called to me, 'Look, a ship!'

He was right! We called and shouted and sailed our little boat as fast as we could. But the ship did not see us. Then I re-membered the guns which made a lot of smoke. A few minutes later the ship saw us and turned.

When we were on the ship, the Portuguese captain listened to my story. He was going to Brazil and agreed to help me, but he wanted nothing for his help. 'No,' he said, when I tried to pay him. 'Perhaps, one day, someone will help me when I need it.'

But he gave me money for my boat, and for Xury, too. At first, I did not want to sell Xury as a slave, after all our dangerous adventures together. But Xury was happy to go to the captain, and the captain was a good man. 'In ten years' time,' he said, 'Xury can go free.'

When we arrived in Brazil three weeks later, I said goodbye to the captain and Xury, left the ship, and went to begin a new life.

## Appendix C: Ethics Approval



Research Ethics

### Western University Non-Medical Research Ethics Board NMREB Delegated Initial Approval Notice

**Principal Investigator:** Dr. Stuart Webb  
**Department & Institution:** Education\Faculty of Education, Western University

**NMREB File Number:** 108752  
**Study Title:** The Effects of Reading Bilingual Books on Language Learning

**NMREB Initial Approval Date:** February 03, 2017  
**NMREB Expiry Date:** February 03, 2018

#### Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Western University Protocol	Received January 16, 2017	
Letter of Information & Consent	English Translation	2017/01/03
Recruitment Items	Verbal Script	2017/01/03
Instruments	Materials - Received January 16, 2017	
Instruments	Tests - Received January 16, 2017	
Letter of Information & Consent	Chinese Translation - Received for Information	2017/01/03
Letter of Information & Consent	Consent Form - Chinese - Received November 17, 2016 for Information	
Other	Attestation Letter - Translations - Received for Information	2017/02/01

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the above named study, as of the NMREB Initial Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.



## Curriculum Vitae

**Name:** Zhiying Zhang

**Post-secondary  
Education and  
Degrees:** Tongji University  
Shanghai, China  
2011-2015 B.A.

Western University  
London, Ontario, Canada  
2015-2017 M.A.(in progress)

**Related Work** TESOL Teacher  
**Experience** Shanghai NewWorld Training  
2013-2015

Child Program Volunteer  
London Library  
2016-2017