2019

A Study of Chinese Language Acquisition: Chinese L2 of (Morpho)-Syntax and Lexemes

Brianna O'Boyle
Gettysburg College

Follow this and additional works at: https://cupola.gettysburg.edu/gssr

Part of the Social and Behavioral Sciences Commons

Share feedback about the accessibility of this item.

A Study of Chinese Language Acquisition: Chinese L2 of (Morpho)-Syntax and Lexemes

A Study of Chinese Language Acquisition: Chinese L2 of (Morpho)-Syntax and Lexemes

Brianna O'Boyle

Gettysburg College

Abstract: This study analyzes two groups of young adult native English speakers of L2 Chinese. One group consisted of beginner level students and the second group was comprised of intermediate/advanced level students. Both groups were administered acceptability tasks in three linguistic areas: syntax, morphosyntax, and semantics. It was hypothesized that students at the beginning level would have good mastery of measure words and semantic differences of lexemes (ren shi 认识 and zhi dao 知道 and ke yi 可以, hui 会, neng 能), some mastery of syntax, and little to no mastery of aspectual markers le 了 and guo 过. It was hypothesized that students at the intermediate/advanced level would have strong mastery of measure words, lexemes, and syntax, and partial mastery of le and guo. Both groups' answers were compared to those of a native speaker control group. It was found that English speakers in both the beginner and intermediate/advanced groups comparatively had greater mastery of syntax and measure words (morphosyntax) while they both struggled with le and guo aspectual marker structures. Additionally, in this study lexemes had the greatest amount of variation in all groups. It is hoped that this kind of research will help shed light on what linguistic areas are more difficult for native English speakers to learn, therefore helping scholars devise more effect teaching methods for these topics.

Keywords: Linguistics, Second Language Acquisition, Mandarin, Chinese, English, Native English Speakers, Syntax, Morphosyntax, Semantics

Introduction

This study presents findings on the acquisition of linguistic features by native English speakers learning Chinese. The word "Chinese" in this work refers to Mandarin, also known as *putonghua*, the national language of China. Three categories syntax, morphosyntax, and semantics were investigated with each category having two subcategories. For syntax, also known as word order, two variables were tested: time and locative. Morphosyntax is the study of morphemes, the smallest parts of words that have significant meaning, and how they function syntactically in a sentence. This subject was investigated in two areas: noun classifiers (measure words) and aspectual markers (*le* 了 and *guo* 过). Semantics are the meanings of words in a language and this was investigated in two examples *ren shi* 认识 vs *zhi dao* 知道 and *ke yi* 可以 vs *hui* 会 vs *neng* 能. R*en shi* 认识 is used to talk about things a person is familiar to while *zhi dao* 知道 is usually used to express knowledge someone has. This linguistic feature of Chinese is somewhat similar to the lexemes in Spanish *saber* and *conocer. Ke yi* 可以/ *hui* 会/ *neng* 能 which in English all mean "can" or "to be able to." However, there are slight variations between the words, for example *ke yi* 可以 is generally used to signify permission while *hui* 会 is having the learned ability, and *neng* 能 is generally used to mean to have the capability to do.

English and Chinese are two of the most spoken languages throughout the world, but are quite different linguistically. For

example, the two languages have some linguistic features that are completely different such as Chinese is a tonal language, while English is not. Since the languages are so distinct, many English speakers have difficulty learning Chinese and vice versa. This research hopes to help identify which areas are most problematic for L2 learners, so future teachers may identify what areas to target more time for teaching on and/or help develop more effective pedagogy for teaching these areas. L2 learners refer to individuals who are learning a second language. In this paper, the participants studied were L1 English speakers, L2 Chinese speakers since Chinese is their second language, and this paper is investigating how they are learning Chinese as a second language.

This paper introduces the linguistic concepts explored in this paper. Following the introduction is the background and contextual section, which aim to explain why this research is important as well as define linguistic terms for readers who may not be linguists. Following the background and contextual section is the literature review, which summarizes prior research done in the field concerning these topics. The methods section addresses how the design of the task was formulated and applied. The results and analysis go over the findings of the research and its implications. The conclusion summarizes the purpose and findings of this study.

Background:

As mentioned before, Chinese and English are two of the most spoken languages around the world. English has 1.12 billion native and non-native speakers around the world whereas Chinese has

1.1 billion speakers around the world, while the next closest language is Hindi with 534 million speakers in the world (Simons and Fennig 2018). China is known as one of the world's emerging economic superpowers, and because of this economic position there are many business and job opportunities in China (Barboza 2010). Due to these economic factors it is no surprise that within the U.S. more and more people are learning Chinese (see Table 1). However, since linguistically the two languages are very different as they are members of two completely different language families that use different orthographic systems, it can be challenging to teach Chinese to native English speakers. This study hopes to discern at what points L2 learners acquire certain linguistic features by testing both beginner and intermediate/advanced-level L2 learners. With this distinction, perhaps teachers of Chinese as a second language can better understand how to teach these concepts if it is apparent that L2 learners do not fully acquire certain linguistic features even at the intermediate/advanced levels.

Table 1: Language Enrollment in Chinese (MLA: 2016)

	2016 Fall	2002 Fall	1990 Fall	1980 Fall	1970 Fall	1958 Fall
Enrollment in Chinese in the USA	53,069	34,153	19,427	11,366	6,115	615

Contextual Section:

Linguistics is defined as the study of language as a series of interrelated systems governed by rules (Millward 2012:1-6). All languages include the systems of phonology, morphology, syntax, lexicon, semantics, and graphics (when there is a written form of the language) (Millward 2012:1-6). This article focuses on syntax, morphosyntax, and semantics. Syntax is defined as the arrangement of words into sentences (and/or clauses and phrases). English is defined as a subject verb order (SVO) language: word order is subject verb object. An example of this is in the sentence "I love cats," *I* is the subject, *love* is the verb, and *cats* are the direct object. This is very different than Chinese, which is often also classified as a SVO, but with the caveat that "topic" is a highly influential grammatical factor. For example, oftentimes the "topic" needs to be in the beginning of the sentence while other SVO languages like English may have more flexibility. This is demonstrated in the sense that "time" and "locative" or the "topic" must be placed in the beginning of the sentence in Chinese while in English they can be placed in the beginning or end interchangeably. This makes Chinese stand out from other SVO languages, even though it generally follows the structure of subject, verb, and then object. Scholars have attempted to categorize this phenomena. Li and Thompson (1981) mention that Chinese does not neatly fall into SVO, VSO, or SOV languages, and "topic" is a strong component in this categorization. However, there has been some discussion within the field as to whether or not this accurately defines Chinese, like in LaPolla's (2009) article in which

he argues Chinese is a topic-comment language rather than simply SVO or topic prominent. Additionally, in Lu and Wu's (2009:41) article they argue that while LaPolla (2009) made an insightful assertion that Chinese is a topic-comment language, this is an oversimplification. And this does not account for the fact that in Chinese the placement of adverbials is different compared to other VO languages. In Chinese, these adverbials are in a preverbal position between the topical material and the verb (Lu and Wu 2009:41-43). Though despite the lack of agreement on this subject, it is clear that "topic" is very important in the word order in Chinese. Even though Chinese and English are SVO languages the word order may be different because Chinese tends to put more importance on the topic rather than the subject as seen in English.

Syntax is not the only linguistic area in which Chinese varies from English, there are also a number of morphological phenomena that are hallmark to Chinese such as measure words and aspectual markers. Measure words are an obligatory category in Chinese that indicate a quantity of a noun. The noun must be preceded by a number and measure word creating the structure NUMBER + MEASURE WORD + NOUN. In example (1) we can observe how measure words (bolded) function.

(1) Classifier Measure Word
一 + **个** + 苹果
Yi + ***ge*** + *ping guo*
one + **MW (CL)** + apple
"One apple"

There are a number of measure words in the Chinese language, and while *ge* 个 is the universal one, most measure words are more specialized and speak to the nature of the noun. For example, there are specific measure words for discussing animals relative to the size of the animals. Yet despite the fact there is no true equivalent to this morphosyntactic feature in English, this is a very structured linguistic feature. Once L2 learners have learned all the appropriate measure words, they should be able to recognize how to use and apply them with some consistency. It is also important to note that it has been reported that some native speakers use *ge,* the universal measure word, to replace some of the more specialized ones. For example in Li and Thompson's reference grammar they state that the "proper" classifier for *cai* 菜, a course of food, is *dao* 道 but nowadays it is completely acceptable to use the universal measure word *ge* 个 instead of the highly specialized one (Li 1981:112).

However, there are a number of other morphological features of Chinese that are not as easily acquired for L2 learners. One of the most difficult concepts for L2 learners is the acquisition of *le* 了 and *guo* 过, which are aspectual markers. One of the reasons why this is such a difficult concept for many L2 learners to learn is because Chinese is a language that lacks tenses, which is very different than English and other Indo-European languages. In order to convey this concept of "time" Chinese usually relies on context. For example, the following sentence is ambiguous because it could be in present tense or past tense:

(2) Lack of tense
我吃面包
Wo chi mian bao
"I eat bread"
"I ate bread"

In order to clarify the time at which the action occurs, a time word is needed such as "today" or "yesterday." This usage of time words to indicate the tense of the sentence is different than aspectual markers, which are used to indicate the relationship between the actions of the subject/s of the phrase and the status of the action. The two aspects examined in this paper are *le* and *guo. Le* is used to denote a change in the current state of action or the completion of an action while *guo* is used to reflect something that was experienced by the speaker/subject. However, these concepts have no real equivalents in English hence it is difficult to teach them. Another factor that makes these concepts difficult to learn is while the two words have very different meanings, sometimes they can both be used in the same place in a sentence. Though consequently the two sentences would have different meanings.

Another linguistic system that all languages have is semantics, or the meanings of words in a language. All languages have words that are particular to that language, but sometimes these concepts can be difficult to learn because there is no direct equivalent of these words. A couple examples of this in Chinese are *ren shi* 认识 and *zhi dao* 知道 which both mean "to know" in English, but have slightly different usages and meanings. For example, *ren shi* is

generally used to talk about people/things a person is familiar with, while *zhi dao* usually describes knowledge.

Literature Review:

Due to China's growing presence in the world economy and political sphere, more and more people are seeking to learn Chinese as demonstrated from increased enrollment in Chinese language courses (Barboza 2010). As seen in Table 1, enrollment in Chinese in the USA has increased by over 50,000 since the beginning of recorded data on these figures until now. As a result, there has been considerable research done in the field of Chinese L2 Acquisition. However, despite the fact that there are many sources on this subject, it is still a relatively new field of research and there are still a number of areas to investigate.

With respect to prior studies done in the field, most only examine one linguistic feature of Chinese at a time, and few compare the different areas to determine which is overall easier or more difficult for L2 learners to acquire. There has been prior research done in most of the linguistic categories examined here. One of the linguistic areas of Chinese that has been investigated is word order acquisition, syntax. Jiang (2009) wrote a book about the acquisition of word order in Chinese by L1 English/L2 Chinese learners. The author mentioned the different types of word order errors there are and a prior taxonomy to categorize these word order errors by L2 learners (Jiang 2009).

In addition to the fact that there are not many studies done on this subject of syntax, Jiang (2009:70) also mentioned that there is

a paucity of studies that specifically investigate how L2 learners learn Chinese. While Jiang's (2009) study was about the importance of word order in Chinese, it investigated all aspects of word order in Chinese. By investigating all of these aspects she devised and proposed a new taxonomy to classify errors of word order created by L2 Chinese learners. In her study, there were 116 L2 learners of Chinese from three proficiency levels with about equal parts men and women (Jiang 2009:135-136). The participants were asked to complete three tasks, all a self-production of writings with different prompts and length requirements for the different proficiency levels (Jiang 2009:136-138). These writings were then examined and analyzed based on grammaticality and appropriateness in respect to word order (Jiang 2009:139-140). One of her findings was that the majority of errors were in the category of "The Principle of Temporal Sequence," since in this study 62% of errors examined fell under this category (Jiang 2009:200). Within this category are the concepts of time and locative expressions, which this study examines.

There has not only been research done in regards to the syntactical idiosyncrasies of Chinese, but there has also been research done on the morphosyntactic phenomena in Chinese. Some very common and well-known concepts are measure words (classifiers) and aspectual markers. There have been many studies done on this subject of measure words, perhaps the most famous study is that by Erbaugh (1986). This seminal article studied the acquisition of these measure words in children establishing at what point which measure words are acquired. However, this study was limited in the fact that it was

examining Chinese L1 learners, not English L1/Chinese L2. Zhang and Jiang (2016) did a more recent study on measure words, but while their research focused on English L1/Chinese L2 learners, they only looked at people with advanced levels of Chinese, 300 level and 400 level students at the university level (Zhang and Jiang 2016:468-469). Additionally, this study was also limited in the fact it only examined one measure word *dao* 道, which is more commonly recognized for its other meanings rather than its function as a measure word (Zhang and Jiang 2016:469-472).

While measure words are considered unique to Chinese, perhaps the most challenging linguistic phenomena for L2 learners to acquire are the aspectual markers. Chinese has a total of four aspectual markers *le* 了, *guo* 过, *zhe* 着, and *zai* 在. The present study only examined the first two *le* and *guo*. Concerning research of aspectual markers in Chinese, Zhang lamented that even within the few studies done on these aspectual markers, the majority of them were only focused on *le* because it is considered to be the most utilized (Zhang 2016:8-11). Although there has been some research done on *le* and *guo* as exemplified by her research, as well as Ming's (2008) dissertation, but both of their studies focused on all four of the aspectual markers. Zhang's (2016) research focused more on the methods of teaching these concepts. She addressed two types: the grammar-translation approach and the communicative approach (Zhang 2016:11-12). In her findings, the teaching method seemed to have an impact on acquisition, but more research needs to be done on this subject before it can be definitely concluded that the grammar

translation approach is less effective than the communicative one (Zhang 2016:27).

On the other hand, Ming's (2008:130-148) dissertation focused on the acquisition of temporal markers in English and Chinese from the L1 Chinese/L2 English perspective as well as the L1 English/L2 Chinese perspective. The author discussed the differences between *le* and *guo* and mentions prior research done on the topic, such as the order of acquisition of these aspect markers. Ming (2008:160-172) also highlighted that while there has been research on the aspectual markers most of them examine L1 acquisition, and the studies that examine L2 acquisition mostly focus on one aspect: *le*. For Ming's (2008:174-177) task there were three tests given to participants. The first test asked participants to select the appropriate aspectual marker in a fill in the blank fashion, and participants had the option to leave the space blank if they believed no aspectual marker was needed. The second test was similar to the first but was given in an essay format, rather than distinct sentences. In the third test, participants were asked to write an essay based on a famous story "Frog, Where Are You" that was developed by a group of psycholinguists. He explained his results from the acquisition of *le* as a marker that is mastered over time, but advanced learners still do not demonstrate complete acquisition (~30% error rate). His results also showed that beginning learners are more likely to underuse *le* versus advanced speakers, who are more likely to overuse it (Ming 2008:198-213). Ming (2008) also emphasized that Chinese foreign language learners (CFL) do not arbitrarily overuse *le* as many people

assume because a great deal of past research claims CFL learners use *le* as the past tense marker in English *–ed,* but since in Ming's (2008:209-212) study it was showed that beginner level participants underused *le,* this can not be the case. Then the author discussed his results relating to *guo,* and how the error rates had a great deal more disparity between the different levels of students (72% beginner to 36% intermediate to 9% advanced) and that advanced speakers had much better mastery of *guo* than *le* (Ming 2008:213-217). In the results of this study, Ming (2008:217-219) found that even though in the past most studies agreed that *le* is acquired before *guo* in reality, *guo* is learned before *le.* While this source extensively researched *le* and *guo* it does not compare their acquisition to other linguistic features of Chinese, which is one of the gaps in the literature that this present study helps to fulfill.

However, while there are many sources on the acquisition of syntactic and morphosyntactic phenomena in Chinese, there appears to be a dearth of research done on the acquisition of specific lexemes, which this study addresses. Most research that has been done in regards to lexicon and semantics has been with regards to question words, as demonstrated by Yuan's (2007) research on this topic. Question words are very important in Chinese because unlike English, where there is a shift in intonation to denote questions, Chinese relies on specific word structures, question particles, and question words. However, there is not much information on lexemes, but my findings may suggest why there is this lack of information on the subject.

Hypothesis:

I hypothesized that the beginner level L2 learners and the intermediate/advanced L2 learners would have different levels of mastery of the linguistic features of Chinese.

Table 2: Predicted Levels of Mastery: X-No Mastery, ?-Partial Mastery, ✓-Mastery

	Syntax Time	Syntax Locative	Measure Words	Aspectual Marker *Le*	Aspectual Marker *Guo*	Lexemes
Beginners	?	?	✓	X	X	✓
Intermediate/ Advanced	✓	✓	✓	?	?	✓
Native Speakers	✓	✓	✓	✓	✓	✓

As seen in Table 2, there were three groups of participants. The first group of participants was beginner level Chinese students, with no more than two semesters of college level Chinese (100 level). I predicted that these students would have partial mastery of syntax, no difference between time and locative, complete mastery of measure words and lexemes, and no mastery of aspectual markers.

This was the predicted hypothesis because according to prior research in the field in syntax the greatest number of errors came from the section that covers time and locative phrases. Also, in prior research of aspectual markers it was found that beginner speakers did not have complete mastery of *guo*, and struggled with mastery of *le* with a tendency to underuse it.

The second group of participants was intermediate/advanced level Chinese students, who had more than two semesters of college level Chinese (200 level) or the equivalent or above. I predicted that these students would have very high mastery of syntax, measure words and lexemes and only partial mastery of aspectual markers. This was the predicted hypothesis because according to prior research in the field of aspectual markers it was found that advanced speakers had greater mastery of *guo* than beginner speakers, but still struggled with mastery of *le* with a tendency to overuse it.

The third group of participants was native speakers, I predicted they would have complete mastery of all of these elements.

Methodology:

In order to conduct this research, native English speakers who were learning Chinese at either a beginner level or an intermediate/advanced level were needed. The research pool was recruited from college students who are currently enrolled in Chinese courses or had taken Chinese courses in the past at the college. The students were asked to complete the task in order to identify problematic language areas for each group and determine at what level these language areas were acquired. There was a total of 18

participants in the beginner group (mean age 19.3) and 15 participants (mean age 19.9) in the intermediate/advanced group. A demographic section was included with the task to assist in identifying any potential trends in the data.

As a control group there were 10 native Chinese speakers (mean age 21.1) whose results were hypothesized to reflect complete mastery. Their results were used to compare with the L2 participants' results in order to determine if the students were approaching native or near native uses of the variable. They were recruited from the International student population, specifically those who were from China.

This task was designed as an acceptability test because, as Carden (1990) mentions, in the past there has been difficulty in replicating experiments and results because different linguists had different ways of designing their experiments and coding their data. By using an acceptability test, it will be easier to compare the results of this study to other studies of a similar nature in addition to attempts to replicate it. This design was created similarly to one that Howe (2010) used in his study of perfect features in Spanish. Unlike Howe's task, instead of only having two options, (word 1/word 2) both sentences were presented in full to the participants with three options: the first sentence is correct, the second sentence is correct, and both sentences are correct. It was decided to not have a fourth option "neither sentence is correct" to avoid excessive variation since this study had such a small sample size.

I designed an acceptability test for my task, which I presented two sentences in Chinese with both characters and *pinyin,* the Romanization of Chinese characters, with the proper tones noted. Participants were asked to indicate if they thought the first question was grammatically acceptable, if the second question was grammatically acceptable, or if both were grammatically acceptable. I selected this type of task rather than one of spontaneous or natural production in order to control/manipulate the same variables.

For the syntax section there were two types of sentences, one based on the concept of "time" and the other based on the locative. Each section had three questions. This section was created in order to see if L2 learners would be able to recognize the typical Chinese word order in sentences. For example, Chinese has a much more structured and strict word order than English. In Chinese, the time is generally placed at the beginning of the sentence (Li and Thompson 1981; Jiang 2009). Jiang's book mentions the idea of time words that indicate a specific point in time; some examples of time words are January, today, yesterday, tomorrow, three days ago, etc (Jiang 2009:72-76). All the examples in this section had a "time word" and the two structures to Native English speakers were: "TIME WORD" + SUBJECT + VERB OR SUBJECT + VERB "TIME WORD" (See Example 3). In English, both structures are acceptable since English has relatively flexible syntax regarding placement of adverbs. However, in Chinese, only the first structure would be acceptable. As mentioned in the hypothesis, it was predicted that beginner level L2 learners would not

be able to distinguish between these two structures and select both sentences as correct as they are in English.

(3) Placement of time
明天我要好好睡觉。
Ming tian wo yao hao hao shui jiao
Tomorrow I want to well sleep
"Tomorrow I want to sleep well"

我要好好睡觉明天。
Wo yao hao hao shui jiao ming tian
I want to well sleep tomorrow
"I want to sleep well tomorrow"

In addition to the time sentences, there are also differences with respect to locative phrases. As Jiang (2009) mentions, locative expressions are phrases that are used to indicate a place or space and are usually formed with a preposition. For all of the examples in this study, the same preposition *zai* 在 was used with two structures to be selected from: SUBJECT + ZAI + LOCATION + VERB and SUBJECT + VERB + ZAI + LOCATION (See example 4). The first structure is reflective of the typical locative word order in Chinese, while the second is reflective of the typical word order in English. As mentioned in the hypothesis, it was predicted that beginner-level L2 learners would not be able to identify the first structure as the correct one and would select the latter because that is more similar to the structure in English.

(4) Placement of locative
我在上海工作。
Wo zai shang hai gong zuo
"I in Shanghai work"

我工作在上海。
Wo gong zuo zai shang hai
"I work in Shanghai"

For the morphosyntax section there were also two types of questions. The first variable was measure words and the second one was aspectual markers. Both types had six questions. This section was created to see what morphosyntactic elements were acquired first by L2 learners. The questions regarding measure words had two sentences one with the correct measure word and another with a randomly assigned measure word. They were structured like NUMBER + MW (CL) + NOUN. It was predicted that even though this linguistic feature has no translatable equivalent in English, it would be acquired relatively well by L2 learners because this is a highly salient and easily identifiable phenomena.

(5) Measure Word
一条裤子
Yi tiao ku zi
One + specialized MW (CL) + pant
"One pair of pants"

一个裤子
Yi ge ku zi
One + Universal MW (CL) + pant
"One pair of pants"

On the other hand, this study also included questions with aspectual markers, which are notorious for being difficult for L2 learners to acquire. This section featured phrases that were identical

other than the aspectual marker (*le/guo*). One example of this structure was:

(6) Le vs. guo
我已经吃了早饭了。
Wo yi jing chi le zao fan le
I already ate breakfast

我已经吃过早饭了。
Wo yi jing chi guo zao fan le
I have already eaten breakfast

The only difference between these structures is the aspectual marker, which is *le* in the first structure and *guo* in the second. There were three types of questions in this section, questions that only *le* was acceptable, questions that only *guo* was acceptable, and questions that both were acceptable but had different meanings. It was predicted that L2 learners in both levels would have difficulty acquiring this concept because it is very abstract and has many subtleties. Furthermore, as Ming (2008) found for *le,* even among advanced speakers, is very difficult to attain native-like usage.

The final section covered specific lexical items, which consisted of two subsections of *ren shi/zhi dao* and *ke yi/hui/neng.* These sections were created in order to test the ability of L2 learners to distinguish between some of the vocabulary specific to Chinese that English does not have. For example, both *ren shi* and *zhi dao* mean in English "to know," but they have some slightly different meanings. *Zhi dao* is usually used to express knowledge someone has, while *ren shi* is used to talk about things a person is familiar with. This linguistic

feature of Chinese is somewhat similar to the lexemes in Spanish *saber* and *conocer.* There were two questions that were designed with *ren shi* and *zhi dao* that were structured in identical ways with the only variation being the lexeme such as:

(7) Lexicon "to know" *ren shi v zhi dao*
她认识我。
Ta ren shi wo
She knows me

她知道我。
Ta zhi dao wo
She knows of me

In addition to the *ren shi/zhi dao* questions, there was also a section that examined *ke yi/hui/neng* which in English all mean "can" or "to be able to." However, there are slight variations between the words, for example *ke yi* is generally used to signify permission while *hui* refers to the learned ability, and *neng* is generally used to mean to have the capability to do. Since often times all three words are grammatically acceptable in sentences, this section was designed a little bit differently to see if L2 learners recognized the differences between the three. This section of the task prompted participants to select the best translation, presenting two phrases with the only difference being the lexeme with the options: the first sentence is better, the second sentence is better, and both sentences are equal. The entire task can be found in Appendix 1.

Analysis:

This section is divided into three main sections with two sub sections each. The first section with the questions related to syntax, and the subcategories will be locative and time. The second section will cover morpho-syntax, and this section will have two subcategories of measure words and aspectual markers *le* and *guo*. And the final section would be on the aforementioned lexemes, with two subcategories of *ren shi/zhi dao* and *ke yi/hui/neng*.

With regards to syntax, the hypothesis predicted that native English speakers at the beginner-level would not be able to distinguish between Chinese word order and English word order with respect to preverbal time expressions and prepositional locative expressions. When examining the results from the syntax section looking at time words, the results presented in Tables 3 and 4 are interesting because for Questions 8 and 11, 94% (31/33) of participants in both questions selected the only acceptable option with "time" at the beginning of the statement. However, for Question 18, shown in Table 5 there was some variation in the beginner level students, only 50% of them selected "time" at the beginning of the sentence. This could be because in the first two questions very common markers of time were used (today/yesterday), but in Question 18 the time marker was "Three days ago," which perhaps many beginner level students do not recognize as a time word that should go at the beginning of the clause. It is especially interesting because native speakers had the same answer to the same question. While there was a little bit of variation in the native speakers in the first two questions, this could possibly be explained by the fact that

colloquially both are acceptable. Since it is clear that there is still a high level of mastery among beginner level students in regards to the syntax structure of recognizing in Chinese time needs to be preverbal, this would suggest it is acquired fairly early. Though it would be important to note that perhaps beginner level students may not recognize all time words, and this could be emphasized when teaching this concept.

Table 3: Distribution of Results Syntax Time Question 8

	Time at the beginning (Standard)	Time at the end (Nonstandard)	Both	Total
Beginner	16	2		18
Intermediate/Advanced	15			15
Native Speakers	8		1	9
Total	39	2	1	42

Table 4: Distribution of Results Syntax Time Question 11

	Time at the beginning	Time at the end (Nonstandard)	Both	Total

	(Standard)			
Beginner	16	1	1	18
Intermediate/Advanced	15			15
Native Speakers	8		2	10
Total	39	1	3	43

Table 5: Distribution of Results Syntax Time Question 18

	Time at the beginning (Standard)	Time at the end (Nonstandard)	Both	Total
Beginner	9	6	2	17
Intermediate/Advanced	13	1	1	15
Native Speakers	10			10
Total	32	7	3	42

The next section analyzed consisted of the questions that were related to locative sentence orders. These results are interesting because, as seen in Tables 6, 7, and 8 there was variation in the participants in all levels, though once again there was the greatest variation amidst the beginner level students. This could possibly be

because the English structure of these phrases is significantly different than the Chinese ones, and native English speakers have more difficulty in distinguishing the acceptable word order in Chinese. This would suggest it is not mastered as early because there was more variation among the beginner group in this section compared to the previous syntax section on time. These findings support the hypothesis since it was predicted that beginner level students would have more difficulty acquiring this syntactic feature since it is more obviously different than its English counterpart.

Table 6: Distribution of Results Syntax Locative Question 1

	Locative preverbal (Standard)	Locative post-verbal (Nonstandard)	Both	Total
Beginner	14	3	1	18
Intermediate/Advanced	11	4		15
Native Speakers	9		1	10
Total	34	7	2	43

Table 7: Distribution of Results Syntax Locative Question 3

	Locative preverbal	Locative post-verbal		

	(Standard)	(Nonstandard)	Both	Total
Beginner	10	5	3	18
Intermediate/Advanced	12	3		15
Native Speakers	10			10
Total	32	8	3	43

Table 8: Distribution of Results Syntax Locative Question 15

	Locative preverbal (Standard)	Locative post-verbal (Nonstandard)	Both	Total
Beginner	8	6	4	18
Intermediate/Advanced	13	1	1	15
Native Speakers	9		1	10
Total	30	7	6	43

Overall, there was mastery of these syntactic variables by both beginner level and intermediate/advanced level students. This was differed from the hypothesis that predicted that only intermediate/advanced students would have good mastery of these syntactic variables because in reality, beginner level students also had good mastery of syntax in the context of time and partial mastery of syntax in the context of locative expressions. From these findings it

would appear that syntax is acquired fairly early since beginner level students have good and partial mastery, though not complete mastery, as seen in Table 5 since there was a great deal of variation among the beginner level students with respect to this time word. Also, there was more variation among the locative expressions as seen in Tables 6, 7, 8.

It would appear that beginner and intermediate/advanced level students have good to partial mastery of measure words.

Table 9: Distribution of Results Morphosyntax Measure Words Question 2

	Specialized Measure Word (Standard)	Other Measure Word (Nonstandard)	Both	Total
Beginner	14	3	1	18
Intermediate/Advanced	11	2	2	15
Native Speakers	10			10
Total	35	5	3	43

Table 10: Distribution of Results Morphosyntax Measure Words Question 4

	Specialized Measure Word (Standard)	Other Measure Word (Nonstandard)	Both	Total
Beginner	15		2	17
Intermediate/Advanced	14	1		15
Native Speakers	10			10
Total	39	1	2	42

Table 11: Distribution of Results Morphosyntax Measure Words Question 5

	Specialized Measure Word (Standard)	Other Measure Word (Nonstandard)	Both	Total
Beginner	12	2	4	18
Intermediate/Advanced	13		2	15
Native Speakers	10			10
Total	35	2	6	43

Table 12: Distribution of Results Morphosyntax Measure Words Question 16

	Specialized Measure Word (Standard)	Other Measure Word (Nonstandard)	Both	Total
Beginner	15	1	2	18
Intermediate/Advanced	15			15
Native Speakers	10			10
Total	40	1	2	43

It is interesting to note that there was a fair amount of variation in Question 10 and 20 (Table 13 and 14). This can probably be explained from the fact that in Question 10 (Table 13) both measure words are used for animals, and are reflective of size, so if statement was referring to a particularly small cow it would be reasonable to use the other measure word. However, this is more than likely caused by a lack of recognition of the standard measure word since the majority of L2 learners selected that option. Though native speakers did not select that option. Also, in Question 20 even though the noun used is a very common word colloquially, most textbooks do not teach the term, so it is possible that many students did not recognize it and consequently were unable to select the proper measure word.

These findings disagree with the hypothesis since it was thought that beginner level students would have mastery of measure

words, but in reality, they only have partial mastery. However, this is probably due to the fact that they might not have complete recognition of all nouns in Chinese and therefore do not recognize how to properly categorize them. One area of future research could be examining the mastery of beginner level students using terms they have been explicitly taught and investigating whether their mastery is more complete with concepts they have learned.

Table 13: Distribution of Results Morphosyntax Measure Words Question 10

	Specialized Measure Word (Standard)	Other Measure Word (Nonstandard)	Both	Total
Beginner	4	12	1	17
Intermediate/Advanced	2	11	2	15
Native Speakers	8	1	1	10
Total	14	24	4	42

Table 14: Distribution of Results Morphosyntax Measure Words Question 20

	Specialized Measure Word (Standard)	Other Measure Word (Nonstandard)	Both	Total
Beginner	6	8	3	17
Intermediate/Advanced	9	5	1	15
Native Speakers	10			10
Total	25	13	4	42

However, measure words were not the only morphosyntactic variables of Chinese examined, the aspectual markers *le* and *guo* were also tested. As shown in Tables 15, 16, 17, 18, 19 and 20, it can be seen that there was quite a bit of variation among the groups, even the native speakers, although the latter group showed less variation. It is interesting to note that there were times when the L2 groups selected the option that none of the native speakers selected. This would indicate that there is not complete mastery or understanding of these concepts. It would also appear that these findings contradict Ming's (2008) findings.

Table 15: Distribution of Results Morphosyntax Aspectual Markers Question 6

	Le (Standard)	Guo (Nonstandard)	Both (Nonstandard)	Total
Beginner	10	4	4	18
Intermediate/Advanced	9	3	3	15
Native Speakers	10			10
Total	29	7	7	43

Table 16: Distribution of Results Morphosyntax Aspectual Markers Question 12

	Le (Standard)	Guo (Nonstandard)	Both (Nonstandard)	Total
Beginner	11	4	3	18
Intermediate/Advanced	9	1	5	15
Native Speakers	8		2	10
Total	28	5	10	43

The discrepancy is seen in Ming's (2008) results, which showed that intermediate/advanced learners have better mastery of *guo* compared to beginner learners. However, in this study we can see that in Table 17 more beginner level students correctly selected *guo* than intermediate/advanced level students.

Table 17: Distribution of Results Morphosyntax Aspectual Markers Question 17

	Le (Nonstandard)	*Guo* (Standard)	Both (Nonstandard)	Total
Beginner	11	5	2	18
Intermediate/Advanced	10		5	15
Native Speakers		9	1	10
Total	21	8	8	43

Table 18: Distribution of Results Morphosyntax Aspectual Markers Question 19

	Le (Nonstandard)	*Guo* (Standard)	Both (Nonstandard)	Total
Beginner	4	13	1	18
Intermediate/Advanced	3	8	4	15
Native Speakers		8	1	9
Total	7	29	6	42

Additionally, Ming's (2008) study also found that beginner learners were more likely to underuse *le* while intermediate/advanced students were more likely to overuse it. However, both groups had similar levels of *le* usage and actually in Question 14 (Table 20)

beginner level students were more likely to overuse it compared to intermediate/advanced students. For this reason, further studies should seek to shed light on the variable acquisition of these aspectual markers. These findings disprove the hypothesis since both beginner level and intermediate/advanced levels had no mastery of these concepts.

Table 19: Distribution of Results Morphosyntax Aspectual Markers Question 7

	Le (Nonstandard)	*Guo* (Nonstandard)	Both (Standard)	Total
Beginner	7	8	3	18
Intermediate/Advanced	6	6	3	15
Native Speakers		3	7	10
Total	13	17	13	43

Table 20: Distribution of Results Morphosyntax Aspectual Markers Question 14

	Le (Nonstandard)	*Guo* (Nonstandard)	Both (Standard)	Total

Beginner	8	8	2	18
Intermediate/Advanced	3	4	8	15
Native Speakers		2	8	10
Total	11	14	18	43

One point of interest in the analysis of the section on semantics is there is little consistency among all of the participant groups. This is especially true in the questions that covered *ke yi/hui/neng.* There was some discrepancy in the *zhi dao* and *ren shi* questions which can be seen in Tables 21 and 22. In Question 9 (Table 21), there was variation in all groups, though it is interesting to note that even though no native speakers selected only *zhi dao* as the correct answer some beginner level and intermediate/advanced students did. It is extremely interesting that in this question more beginner level students selected the standard answer than the intermediate/advanced. This could possibly be due to the fact that they do not understand the differences between the two lexemes and assumed both functioned. However it is more likely that even though intermediate/advanced students recognize *ren shi* as "knowing" with regards to familiarity, they did not realize that *zhi dao* is also grammatically acceptable, albeit less common, just with a different meaning ("I know her" vs "I know of her"). Although in Question 13 (Table 22) there was a lot less variation which indicates that both beginner and intermediate/advanced students recognize the lexemes and are aware that they are different. These lexemes should be

investigated more in depth to truly understand the L2 acquisition of these variables.

Table 21: Distribution of Results Semantics *Ren shi* vs *Zhi dao* Question 9

	Ren shi (Nonstandard)	*Zhi dao* (Nonstandard)	Both (Standard)	Total
Beginner	4	4	9	17
Intermediate/Advanced	8	1	6	15
Native Speakers	3		7	10
Total	15	5	22	42

Table 22: Distribution of Results Semantics *Ren shi* vs *Zhi dao* Question 13

	Ren shi (Nonstandard)	*Zhi dao* (Standard)	Both (Nonstandard)	Total
Beginner	1	13	4	18
Intermediate/Advanced		13	2	15
Native Speakers		10		10
Total	1	36	6	43

While the lexemes *ren shi* and *zhi dao* bore some interesting results, the lexemes *ke yi, hui,* and *neng* were even more interesting because in these questions, there was the greatest amount of variation within all groups as seen in Tables 23, 24, 25, and 26. It is quite interesting to note that in all of the questions there were times that the L2 learners selected the answer that none of the native speakers selected. It is also interesting to note that there was more variation among the intermediate/advanced group than the beginner group. These results could possibly indicate that since the intermediate/advanced students were more likely to select similar answers to the native speaker group they are more likely to have similar methods of thinking in regards to Chinese and are closer to acquiring lexemes than the beginner group. It is also possible that the Chinese native speakers did not have a full understanding of the English language and misinterpreted which option was the best translation since their levels of English were not tested.

Table 23: Distribution of Results Semantics *Ke yi* vs *Hui* vs *Neng* Question 21

	Ke yi (Standard)	*Hui* (Nonstandard)	Both (Nonstandard)	Total
Beginner	10	8		18
Intermediate/Advanced	10	3	2	15
Native Speakers	8		2	10

Total	28	11	4	43

Table 24: Distribution of Results Semantics *Ke yi* vs *Hui* vs *Neng* Question 22

	Hui (Standard)	*Ke yi* (Nonstandard)	Both (Nonstandard)	Total
Beginner	10	8		18
Intermediate/Advanced	7	6	2	15
Native Speakers	6		4	10
Total	23	14	6	43

Table 25: Distribution of Results Semantics *Ke yi* vs *Hui* vs *Neng* Question 23

	Neng (Standard)	*Hui* (Nonstandard)	Both (Nonstandard)	Total
Beginner	13	4	1	18
Intermediate/Advanced	8	4	3	15
Native Speakers	7		3	10
Total	28	8	7	43

Table 26: Distribution of Results Semantics *Ke yi* vs *Hui* vs *Neng* Question 24

	Ke yi (Standard)	*Neng* (Nonstandard)	Both (Nonstandard)	Total
Beginner	9	6	3	18
Intermediate/Advanced	4	8	3	15
Native Speakers	4		6	10
Total	17	14	12	43

These findings disprove the hypothesis since it was concluded that there was only partial mastery of these lexemes among beginner level students. Despite the fact that the results for the lexical variables are interesting to examine, there is not enough consistency to make any definitive claims, so the results of this section are tentative at best.

Additionally, with a cursory look at the demographic information, there did not appear to be any correlation between students that studied abroad or their grades in their Chinese courses and their mastery of the linguistic features.

Limitations:

Some of the limitations of this study were time and participants. Since this research was conducted during a one semester capstone experience, the research period was limited to four weeks. Additionally, this study only had 43 participants, only 10 of which

were native speakers. Ideally, it would have been preferred to have equal numbers of participants in the Beginner, Intermediate, and Advanced levels. However, the participant pool was limited to students at a small liberal arts college for accessibility reasons, and the total student body population is only about 2,600 students from which only a small percentage have any experience in Chinese as a second language. Because of the dearth in Intermediate and Advanced level students, it was methodologically important to collapse the two groups into one group. While it appears that the groups had similar trends, because of the small sample size, it would not have been possible to compare all three of the groups equally. Though fortunately the intermediate and advanced groups seemed to follow similar trends, 66this would be interesting to investigate further if appropriate participant pools could be used.

Conclusion:

This research study looked at three different linguistic features of Chinese: syntax, morphosyntax, and semantics. As can be seen in Table 27 it was originally hypothesized that beginner level students would have good mastery of measure words and lexicon, partial mastery of syntax and no mastery in aspectual markers. However, in reality beginner level students only have mastery of syntax relating to time with partial mastery of syntax relating to locatives, and lexemes and no mastery of aspectual markers. It was also originally hypothesized that advanced level students would have good mastery of measure words, lexicon, and syntax, with partial

mastery of aspectual markers. In the findings of this study intermediate/advanced students had good mastery of syntax, measure words, and lexemes with no mastery of aspectual markers.

As Chinese language is learned by more second language speakers, this study contributes to the conversation of linguistics by providing a new way to approach the study of second language acquisition of Chinese by native English speakers. This study does so by testing different linguistic areas and attempting to reveal when different linguistic categories are acquired by comparing them to different categories, which has not been done before. Unfortunately, from these findings it is not possible to conclusively say at what points L2 learners learn exactly which linguistic features and further research is needed to properly investigate each of these specific linguistic phenomena before they can be accurately compared.

Table 27: Findings of Study, H-Hypothesized F-Findings

	Syntax Time		Syntax Locative		Measure Words		Aspectual Marker Le		Aspectual Marker Guo		Lexemes	
	H	F	H	F	H	F	H	F	H	F	H	F
Beginner	?	✓	?	?	✓	?	X	X	X	X	✓	?
Intermediate/ Advanced	✓	✓	✓	✓	✓	✓	?	X	?	X	✓	✓
Native Speaker	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

X-No Mastery, ?-Partial Mastery 60-70% Correct Overall, ✓-Mastery <70%

These percentages were obtained by categorizing what the native speakers selected as standard and then categorizing options that were not selected by native speakers as nonstandard and adding up all of the answers for each participant group for each linguistic section and calculating overall percentage correct.

Appendix 1:

Acceptability Test

Instructions: Please read the following sentences and select the answer that you believe to be correct with the mindset of a native Chinese speaker.

*The task given to participants had the questions randomized, the original order is indicated by the numbers on each question.

<u>**Syntax:**</u>
Placement of time

8) Wo3 chi1 mian4 bao1 jin1 tian1 zao3 shang
    我吃面包今天早上。
    Jin1 tian1 zao3 shang wo3 chi1 mian4 bao1
    今天早上我吃面包。
    A) The first sentence is correct
    B) The second sentence is correct
    C) Both sentences are correct

11) Ming2 tian1 wo3 yao4 hao3 hao3 shui4 jiao4
    明天我要好好睡觉。
    Wo3 yao4 hao3 hao3 shui4 jiao4 ming2 tian1
    我要好好睡觉明天。
    A) The first sentence is correct
    B) The second sentence is correct
    C) Both sentences are correct

18) Ta1 qu4 mai3 dong1 xi san1 tian1 qian2
    她去买东西三天前。
    San1 tian1 qian2 ta1 qu4 mai3 dong1 xi
    三天前她去买东西。
    A) The first sentence is correct
    B) The second sentence is correct
    C) Both sentences are correct

Placement of location

116

1) Wo3 zai4 shang4 hai3 gong1 zuo4
我在上海工作。
Wo3 gong1 zuo4 zai4 shang4 hai3
我工作在上海。
   A) The first sentence is correct
   B) The second sentence is correct
   C) Both sentences are correct

3) Ta1 xue2 zhong1 wen2 zai4 da4 xue2
他学中文在大学。
Ta1 zai4 da4 xue2 xue2 zhong1 wen2
他在大学学中文。
   A) The first sentence is correct
   B) The second sentence is correct
   C) Both sentences are correct

15) Ta1 zai4 chu2 fang2 zuo4 fan4
她在厨房做饭。
Ta1 zuo4 fan4 zai4 chu2 fang2
她做饭在厨房。
   A) The first sentence is correct
   B) The second sentence is correct
   C) Both sentences are correct

Morpho-Syntax:
Only *le* is acceptable

6) Ni3 dao4 le su4 she4, qing3 gei3 wo3 da3 dian4 hua4
7) 你到了宿舍，请给我打电话。
Ni3 dao4 guo su4 she4, qing3 gei3 wo3 da3 dian4 hua4
你到过宿舍，请给我打电话。
   A) The first sentence is correct
   B) The second sentence is correct
   C) Both sentences are correct

12) Zuo2 tian1 wan3 shang ta1 zuo4 le ta1 de zuo4 ye4
昨天晚上他做了他的作业。
Zuo2 tian1 wan3 shang ta1 zuo4 guo ta1 de zuo4 ye4
昨天晚上他做过他的作业。

A) The first sentence is correct
B) The second sentence is correct
C) Both sentences are correct

Only *guo* is acceptable

17) Ta1 men liang3 nian4 qian4 zai4 Gettysburg da4 xue2 xue2 xi2 le

他们两年前在 Gettysburg 大学学习了。

Ta1 men liang3 nian4 qian4 zai4 Gettysburg da4 xue2 xue2 xi2 guo

他们两年前在 Gettysburg 大学学习过。

A) The first sentence is correct
B) The second sentence is correct
C) Both sentences are correct

19) Wo3 you3 qu4 le zhong1 guo2

我有去了中国。

Wo3 you3 qu4 guo zhong1 guo2

我有去过中国。

A) The first sentence is correct
B) The second sentence is correct
C) Both sentences are correct

Both are acceptable (different meanings)

7) Wo3 yi3 jing1 chi1 le zao3 fan4 le

8) 我已经吃了早饭了。

Wo3 yi3 jing1 chi1 guo zao3 fan4 le

我已经吃过早饭了。

A) The first sentence is correct
B) The second sentence is correct
C) Both sentences are correct

14) Ni3 chi1 guo dou4 fu ma

你吃过豆腐吗?

Ni3 chi1 le dou4 fu ma

你吃了豆腐吗？
A) The first sentence is correct
B) The second sentence is correct
C) Both sentences are correct

Measure Words

2) Yi1 tiao2 ku4 zi 一条裤子
   Yi1 ge4 ku4 zi 一个裤子
   A) The first sentence is correct
   B) The second sentence is correct
   C) Both sentences are correct

4) Yi1 ben3 mao1 一本猫
   Yi1 zhi1 mao1 一只猫
   A) The first sentence is correct
   B) The second sentence is correct
   C) Both sentences are correct

5) Yi1 ge4 shu1 一个书
   Yi1 ben3 shu1 一本书
   A) The first sentence is correct
   B) The second sentence is correct
   C) Both sentences are correct

16) Yi1 tou2 qian2 一头钱
   Yi1 kuai4 qian2 一块钱
   A) The first sentence is correct
   B) The second sentence is correct
   C) Both sentences are correct

10) Yi1 tou2 niu2 一头牛
   Yi1 zhi1 niu2 一只牛
   A) The first sentence is correct
   B) The second sentence is correct
   C) Both sentences are correct

20) Yi1 shuang1 kuai4 zi 一双筷子
   Yi1 tiao2 kuai4 zi 一条筷子
   A) The first sentence is correct
   B) The second sentence is correct

C) Both sentences are correct

Semantics:
Ren shi vs. zhi dao

9) 她认识我。
    Ta1 ren4 shi wo3
    她知道我。
    Ta1 zhi1 dao wo3
    A) The first sentence is correct
    B) The second sentence is correct
    C) Both sentences are correct

13) Wo3 ren4 shi ming2 tian1 yao4 kao3 shi4
    我认识明天要考试。
    Wo3 zhi1 dao ming2 tian1 yao4 kao3 shi4
    我知道明天要考试。
    A) The first sentence is correct
    B) The second sentence is correct
       Both sentences are correct

Ke yi vs. hui vs. neng
Which of the following sentences is the best translation of the sentence.

21) You cannot use your phone.
    你不可以用你的手机。
    你不会用你的手机。
    A) The first sentence is better
    B) The second sentence is better
    C) Both sentences are equal

22) I know how to make food.
    我可以做饭。
    我会做饭。
    A) The first sentence is better
    B) The second sentence is better
    C) Both sentences are equal

23) Can you help me?

你能帮我吗？

你会帮我吗？

A) The first sentence is better
B) The second sentence is better
C) Both sentences are equal

24) He is not allowed to read.

他不能看书。

他不可以看书。

A) The first sentence is better
B) The second sentence is better
C) Both sentences are equal

References:

Barboza, David. 2010. "China Passes Japan as Second-Largest Economy." *New York Times.* Retrieved 2018 (https://www.nytimes.com/2010/08/16/business/global/16yuan.html).

Carden, Guy. 1990. "Polylectal Grammars, Randomly Distributed Lects, and Introspective Judgments: A Replication of Legum's While-Clause Studies." Pp. 205-226 in *Development and Diversity: Linguistic Variation across Time and Space.* Edited by Jerold Edmondson, Crawford Feagin, and Peter Muhlhausler. Arlington: University of Texas Publications.

Del Gobbo, Francesca. 2014. "Classifiers." Pp. 26-48 in *Handbook of Chinese Linguistics*. Edited by C. T. James Huang. Hoboken: John Wiley & Sons, Inc.

Erbaugh, Mary. 1986. "Taking Stock: The Development of Chinese Noun Classifiers Historically in Young Children." Pp 399-436 in *Noun Classes and Categorization*. Edited by Colette Craig. United Kingdom: Routledge Publication.

Howe, Chad. 2010. *The Spanish Perfects Pathways of Emergent Meaning*. Athens, Georgia: University of Georgia.

Jiang, Wenying. 2009. *Acquisition of word order in Chinese as a foreign language*. Berlin,   Germany: Mouton de Gruyter.

Kong, Stano. 2017. "The Thematic and Non-thematic Verbs Asymmetry in L2 Chinese: An Abstract Features Non-Aroppability Account." *Lingua* 188:1-18.

LaPolla, Randy J. 2009. "Chinese as a Topic-comment (Not Topic-prominent and Not SVO) Language." Pp. 9-22 in *Studies of Chinese Linguistics: Functional Approaches*. Edited by Janet Zhiqun. Hong Kong: Hong Kong University Press.

Li, Charles N., and Sandra A. Thompson. 1981. *Mandarin Chinese: A Functional Reference Grammar*. Berkeley and Los Angeles, California: University of California Press.

Liao, Wei-Wen Rodger. 2014. "Morphology." Pp. 3-25 in *Handbook of Chinese Linguistics*. Edited by C. T. James Huang. Hoboken: John Wiley & Sons, Inc.

Lu, Bingfu, and Xiaozhou Wu. 2009. "The Placement of Chinese Adverbials Revisited: What Differentiates Chinese. Word Order from Other SVO Languages." Pp. 23-43 in *Studies of Chinese Linguistics: Functional Approaches*. Edited by Janet Zhiqun Xing. Hong Kong: Hong Kong University Press.

Liu, Feng-hsi. 2016. "Syntactic Sources of Adjectives in Mandarin Chinese." *Studies in Chinese Linguistics* Volume 37:39-54.

Millward, C. M., and Mary Hayes. 2012. *A Biography of the English Language*, Third Edition. Bostons, Massachusetts: Wadsworth.

Ming, Tao. 2008. *The Acquisition of Temporal Marking: A Bidirectional Study*. Los Angeles, California: University of California.

Modern Languages Association. 2016. Language Enrollment Database, 1958-2016. Retrieved 2018 from (https://apps. mla.org/cgi-shl/docstudio/docs.pl?flsurvey_results).

Simons, Gary F. and Charles D. Fennig. 2018. *Ethnologue: Languages of the World, Twenty-first edition.* Dallas, Texas: SIL International.

Yuan, Boping. 2007. "Behaviours of *wh*-words in English Speakers' L2 Chinese *wh*-questions: Evidence of No Variability, Temporary Variability and Persistent Variability in L2 Grammars." *Bilingualism: Languages and Cognition* 10:277-298.

Zhang, Liulin, and Song Jiang. 2016. "A Cognitive Linguistics Approach to Chinese Classifier Teaching: An Experimental Study." *Journal of Language Teaching and Research* 7:467-475.

Zhang, Qiaochao. 2017. "Investigating the teaching of Chinese aspect markers *zai, zhe, le* and *guo*–Grammar-Translation approach and a communicative approach." *Researching and Teaching Chinese as a Foreign Language* 2:1-41.

Zhao, Yang. 2011. "Review Article: A Tree in the Wood: A Review of Research on L2 Chinese Acquisition." *Second Language Research* 27:559-572.