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## Acquisition Of Chinese Wh-Questions By English L2 Learners

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ACQUISITION OF CHINESE WH-QUESTIONS BY ENGLISH L2 LEARNERS

A Thesis

Presented for the

Master of Arts

Degree

The University of Mississippi

LINFEI YI

May 2018

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## ABSTRACT

The current thesis investigates the acquisition of Chinese *wh*-questions by English L2 learners based on the syntactic differences between the two languages. I seek to find out how well do the L2 learners acquire the *wh*-questions, as measured by a Grammaticality Judgment Task; what *wh*-words tend to pose difficulties for the acceptability of L2 learners; if L2 learners able to acquire the native-like word order of *wh*-questions in Chinese; if the results of the initial L2 learners in line with any hypotheses of the initial state. Through the analysis of the results, I will conclude that L1 English learners of L2 Chinese at the initial state fully transfer the features of *wh*-questions, while non-initial students are able to acquire *wh-in situ* feature with some types of *wh*-questions, in line with Schwartz & Sprouse's (1994, 1996) Full Transfer Full Access hypothesis.

## DEDICATION

This thesis is dedicated to everyone who helped me and guided me through those hard times.

## ACKNOWLEDGMENTS

I would like to thank my advisor Dr. Christopher Sapp and my committee members, Drs Vance Schaefer and Zhini Zeng. I would also like to thank the students and instructors from the Flagship Chinese Program at the University of Mississippi for the research support.

## LIST OF ABBREVIATIONS

L1	First language
L2	Second language
CLI	Cross-linguistic influence
SLA	Second language acquisition
SVO	Subject verb object
NP	Noun phrase
PP	Prepositional phrase
CP	Complementizer phrase
C	Complementizer
TP	Tense phrase
VP	Verb phrase
PLD	Primary linguistic data
ILG	Inter Language Grammar
Ss	steady state
FTFA	Full Transfer and Full Access hypothesis)
UG	Universal grammar
MT	The Minimal Trees hypothesis)
VF	The Valueless Features hypothesis
DMTH	the Developmentally Moderated Transfer Hypothesis
GJT	Grammaticality Judgment Task

IRB	Institutional Review Board
SPSS	Statistical Package for Social Science
MS	Mean Score

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## CHAPTER 1

### INTRODUCTION

Language transfer, under the subcategory of cross-linguistic influence (CLI) (Sharwood Smith, 1983), is used to describe how old language habits from a learner affect his/her new languages. In the course of processing the new language, positive effects as well as negative effects of the old language come into being. Positive effects refer to the similarities between the old and new languages, which have proved to facilitate the acquisition of the new language. An L1 German learner is expected to acquire English faster than an L1 Mandarin Chinese (henceforth Chinese in this thesis), as German and English belong to the Germanic language family whereas Chinese belongs to the Sino-Tibetan family (cf., Contrastive Analysis, Lado, 1957). To an L1 German learner, the positive transfer effects between the two languages outweigh their negative transfer effects. To an L1 Chinese learner, the situation is the opposite as the negative effects outweigh the positive effects. Negative transfer occurs when L2 acquisition is hindered by L1 knowledge and results in errors. The negative transfer from L1 knowledge may refer to the word choice, word order, pronunciation, and any other aspects. Taking the difference of word order between English and Chinese as an example, the structure of declarative sentences in Chinese shares similarities with English: the SVO structure. However, in *wh*-questions, the *wh*-words in

English have to move to the initial position of the sentence while Chinese *wh*-words stay in the position where they are generated (*wh-in-situ*).

When checking the features of Chinese declarative sentences and *wh*-questions, the word orders of these two types both follow the SVO pattern. The *wh*-words are in their functional position without any movements, such as (1) and (2).

(1) A.	小王	是	学生。
	xiǎo wáng	shì	xuésheng.
	name	be	student

‘Xiaowang is a student.’

B.	小王	是	什么
	xiǎo wáng	shì	shénme?
	name	be	what

‘What is Xiaowang?’

C.	谁	是	学生
	shuí	shì	xuésheng?
	Who	be	student

‘Who is a student?’

(2) A.	小王	吃	苹果
	xiǎo wáng	chī	píng guǒ.
	name	eat	apple

‘Xiaowang eats an apple.’

B.	小王	吃	什么
	xiǎo wáng	chī	shénme?
	name	eat	what

‘What does he eat?’

C.	谁	吃	苹果
	shuí	chī	píng guǒ?
	Who	eat	apple

‘Who eats an apple?’

It can be seen that *wh*-words in the questions remain in the position where their part of speeches are, whereas the *wh*-words in English move to the front of the sentence. When L1 English speakers learn the Chinese *wh*-questions, they may make errors due to the difference of the word order. In other words, negative transfer may cause the unsuccessful acquisition of

*wh*-questions in L2 Chinese, particularly at the initial state (Gao, 2009). On the contrary, some studies show successful cases (Yuan, 2006; Zhang, 2013). To conclude, the results of the research pertaining to the L2 acquisition of *wh*-questions in Chinese has been controversial.

The current thesis will investigate the acquisition of Chinese *wh*-questions by English speakers. I seek to answer the following research questions:

1. How well do the L2 learners acquire the *wh*-questions, as measured by a Grammaticality Judgment Task? Are L2 learners able to acquire the native-like word order of *wh*-questions in Chinese?
2. What *wh*-words tend to pose difficulties for the acceptability of L2 learners?
3. Are the results of the initial L2 learners in line with any hypotheses of the initial state?

I will conclude that L1 English learners of L2 Chinese at the initial state fully transfer the features of *wh*-questions, while non-initial students are able to acquire *wh-in situ* feature with some types of *wh*-questions, in line with Schwartz & Sprouse's (1994, 1996) Full Transfer Full Access hypothesis.

This thesis is organized as follows: Chapter Two is the literature review; Chapter Three is the methodology; Chapter Four discusses the results and the analyses of the Grammaticality Judgment Task; Chapter Five is the discussion of the study; Chapter Six is the conclusion of the thesis.

## CHAPTER 2

### LITERATURE REVIEW

In this chapter, the features of Mandarin Chinese and English *wh*-questions in syntax will be firstly discussed. Studies of *wh*-questions in SLA Chinese follow. Third, the definition and the hypotheses of the initial state in the Second Language Acquisition will be discussed, which lead to the detailed research questions of this study.

#### 2.1 The Word Order and *Wh*-questions of Chinese and English in Syntax

The basic structure of declarative sentence of the two languages is similar, that is Subject + Predicate. Like English, the objects (direct or indirect) in Chinese follow the verb. However, where the two languages differ is the position of *wh*-questions. In Chinese, *wh*-words remain in place which is referred to as *wh-in-situ*. In contrast, *wh*-words in English have to move to the front of the question which is termed *wh*-movement.

##### 2.1.1 The Word Order and *Wh*-questions of Chinese

Ross and Sheng Ma (2006) stated that the sentence in Chinese consists of the topic, the subject, and the predicate. The part of “topic” is not obligatory and the “subject” could be omitted if it is mentioned in the previous context. The “predicate” forms the major body of the sentence including a verb with or without negation, objects, adverbial modifiers, and prepositional phrases.

In a sentence with nothing is emphasized, the objects (direct or indirect) follow the verb in the verb phrase (VP).

Take (1) as an example,

(1) a. tā shì xué sheng.

他 是 学生

He is student

‘He is a student’.

b. xiǎo wáng kàn shū.

小 王 看 书

Name read book

‘Xiaowang reads a book.’

The main noun in the noun phrase (NP), the head noun, occurs as the last word in the phrase. All phrases that describe or modify the head noun occur before the head noun. Take (1) b as an example, if we would like to modify the book forming a NP, the modifiers must be placed before the head noun shū. For example (2a):

(2) a. xiǎo wáng kàn gù shì shū.

小 王 看 故事 书

Name read story book

‘Xiaowang reads a story book.’

Chinese does not have possessive pronoun. The possessive pronouns is conveyed by a personal pronoun + de(的, of or 's). For example, ‘my book’ is composed of three words in Chinese: wǒ de shū. Wǒ is the pronoun meaning *I* or *me*. When the particle of possession *de* is added after the wǒ, the possessive pronoun *my* is formed. If we add a pronoun in (2a) identifying the story book is possessed by me, the sentence can be expanded to (3a):

(3) a. xiǎo wáng kàn wǒ de gù shì shū.

小 王 看 我 的 故事 书

Name    read    me    poss- particle story    book

‘Xiaowang reads my story book.’

The order of prepositional phrase (PP) precedes the verb in Chinese, such as the location and time. The Prepositional Phrases occur immediately before the verb. A time phrase usually occurs initially of the “predicate” in the sentence (Ross & Sheng Ma, 2006). The time phrase usually precedes a location phrase if both appear in one sentence.

See the examples in (4)

(4) a. tā    hé    péng you    chī    wǎn fàn.

他 和 朋 友 吃 晚 饭。

he with friend eat dinner

‘He had dinner with friends.’

b. tā    zài    jiā    chī    wǎn fàn

他 在 家 吃 晚 饭。

he at home eat dinner

‘He had dinner at home.’

c. tā    zuótān    hé péng you    zài jiā    chī wǎn fàn

他 昨 天 和 朋 友 在 家 吃 晚 饭。

he yesterday with friends at home eat dinner

‘He had dinner with friends at home yesterday.’

There are four types of questions which are commonly used in Chinese: yes-no questions, *wh*-questions, alternative questions, and A-not-A questions. Examples of these four types of questions are listed as follows (5):

(5) a. xiǎo wáng    kàn    shū                  ma

小 王 看 书 吗?

name read book Particle for Yes-no question

‘Does he read books?’

b. shéi    kàn                  shū

谁 看 书?

who read book

‘Who reads books?’

c. xiǎo wáng kàn shū hái shì chī fàn  
小 王 看 书， 还 是 吃 饭?  
name read book or eat dinner

‘Does he read books or have dinner?’

d. xiǎo wáng kàn bù kàn shū  
小 王 看 不 看 书?  
name read not read book

‘Does he read books or not?’

If we compare (5a) to (1b), we will find that this yes-no question (5a) is formed by (1b) (a declarative sentence) and *ma*. The yes-no question in Chinese is typically composed of a declarative sentence with *ma* at the end. (5c) is an alternative question. The answer is selected from one of the options offered in the question. The word order of this type of question is also a declarative sentence. In (5d), the negation of the verb has been inserted immediately after the verb itself forming the pattern of A-not-A, meaning the action is taken or not taken by the subject.

As for (5b), the question starts with a *wh*-word *who* as the subject. In a simple *wh*-question in Chinese, the position of the *wh*-word will be whatever part of the speech it functions. Take (1b) as an example, if we want to know *what* Xiaowang reads, the question is as (6a):

(6) a. xiǎo wáng kàn shén me

小 王 看 什 么?  
name read what-

‘What does Xiaowang read?’

As shown in (6a), the *wh*-word “*what*” functions as the object in the sentence, therefore, the *wh*-word “*shénme*” stays in its corresponding position. Again, In syntax this is termed *wh-in-situ*. In the current study, phenomena of *wh-in-situ* are discussed within simple

questions, disregarding the embedded ones. The following *wh*-words will be tested in the current study: 什么(sh éi me/what as object or modifier), 谁(she tǐ who as objects), 谁的 (she de/whose) 怎么样(zěnme yang/how), 为什么(wéi sh éi me/why), 几(jǐ/what number), 哪儿(nǎr/where), and 几点(jǐ diǎn/ what time).

Compared to the *wh*-questions in Chinese, English *wh*-questions need movement. The *wh*-word is not allowed to remain in the same position. It has to be assigned to the position of Specifier of CP. Take the English translation of (6a) as an example as shown in (7).

(7) What does John read?

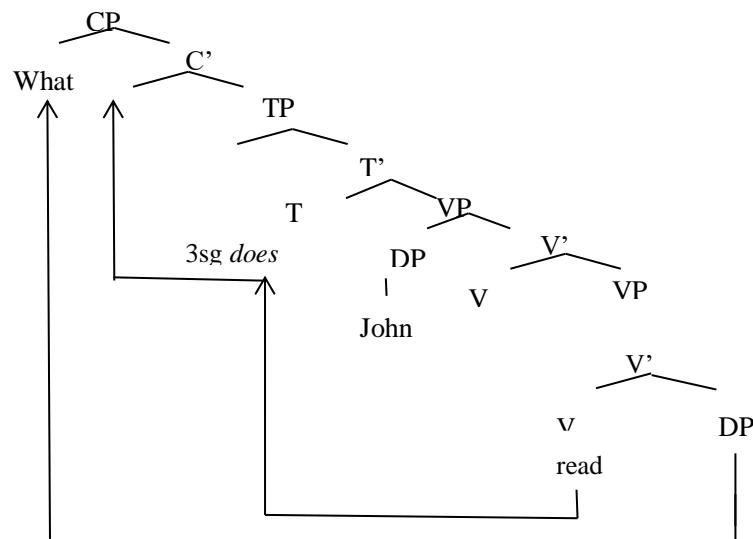


Figure 1 The hierarchical structure of ‘What does John read?’

Rizzi (1990) identified the [wh] features in the CP system either weak [-wh] or strong [+wh]. In English, the motivation of the *wh*-movement is to check the strong *wh*-question feature of C (Chomsky, 1993; 1995) because CP as one of the functional projections has abstract features. In contrast, Chinese has weak [-wh] feature, which does not need to be

checked. Therefore, Chinese syntactically does not require *wh*-movement.

- (8) a. xiǎo wáng kàn shū  
小 王 看 书  
name read book  
'Xiaowang reads books'.  
[TP[NP[N小 王]][VP[V看]][NP [N书]]]]
- b. John reads books.  
[TP[NP[N John]][VP[V reads]][NP [Nbooks]]]]
- c. xiǎo wáng kàn shén me  
小 王 看 什 么?  
name read what  
[TP[NP[N小 王]][VP[V看]][NP [N什 么]]]]
- d. What does John read?  
[CP [+wh, NOM] what [C does]IP NP[N John] VP[V read]]]

The syntactic structure, both Chinese and English declarations, are within TP. However, unlike Chinese question as (8c), the structure of English questions as (8d) projects to CP, the *wh*-word "what" has moved to the position of Specifier of CP.

As for the Prepositional Phrase (PP), it is usually formed by a preposition and a Noun Phrase (NP). The NP is an obligatory complement of PP (Carnie, 2013). The PPs in English, and Chinese sentences are usually in the NP or the VP (verb phrase) to modify the head noun or verb. The position of PPs is normally after its modified noun or verb.

In conclusion, the *wh*-questions of Mandarin Chinese have weak feature, hence *wh-in-situ*, while the English has strong *wh* features and thus *wh*-movement. In addition, the positions of PP differ. With the different linguistic features between English and Chinese, it could be predicted that the difficulty may be caused by the differences by L2 Chinese learners of English, particularly at the initial state of language study.

## 2.2 The Initial State and Its Hypotheses in Second Language Acquisition

The initial state is a significant period in second language learning (L2). It marks the beginning of how the learners acquire a second language after their first language or mother tongue. In this early development, the original setting of the parameters in the learners' L1 might gradually change to accommodate to the new language. As far as the process of acquisition is concerned, different researchers hold different opinions. In this section, the definitions and the hypotheses pertaining to the initial state will be discussed.

### 2.2.1. The Definition of Initial State

The term *initial state* refers to the “unconscious linguistic knowledge” (White, 2003: 58) that exists in the L2 learners who begin to be exposed to their L2. Hawkins (2001) termed it as the point where learners start to build L2 grammars. In White (2003), she stated that the best definition of the initial state is from Bley-Vroman (1990:18-19). Bley-Vroman (1990) assumed that the initial state (shown as S0 in Figure 2.2) of a learner's second language primary linguistic data (PLD) starts from their first language grammar. As the learner acquires the L2, their Inter Language Grammar (ILG) is attained from state one (ILG1) to a certain state (ILGn) finally reaching the steady state (Ss), as forming the ‘particular program’ in a learner's L2.

White (2003:59) schematized the course of L2 acquisition described in Bley-Vroman (1990) as:

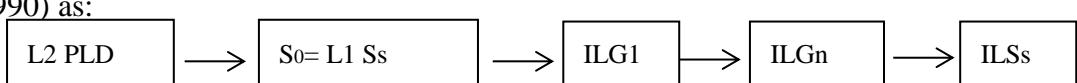


Figure 2 L2 acquisition without UG

## 2.2.2 The Initial State Hypotheses in White (2003) and the Processability Theory

(Pienemann, 1998, 2005a)

It is widely accepted that the focus of initial state of second language acquisition is on how much L1 grammar is taken during the L2 initial state, such as The Full Transfer Full Access Hypothesis of Schwartz and Sprouse (1994, 1996), the Minimal Trees Hypothesis of Vainikka and Young-Scholten (1994, 1996a, 1996b), the Valueless Features Hypothesis of Eubank (1993/1994, 1994, 1996).

### 2.2.2.1 Full Transfer and Full Access Hypothesis (FTFA)

Schwartz and Sprouse (1994, 1996) discussed a case of a Turkish boy Cevdet, learning L2 German. Schwartz and Sprouse (1994, 1996) claimed that the initial state includes the ‘entire L1 grammar’, hence the term *full transfer*. L2 learners will take the parameter value of their L1 into L2 grammar and later shift to the L2 value: “The initial state of L2 acquisition is the final state of L1 acquisition” (Schwartz & Sprouse 1996, pp. 40-41). With the result of UG constraining the interlanguage grammar, it is *full access* in the process of restructuring subsequent grammar. FTFA makes claims that the L1 steady state grammar is the initial state in L2 acquisition and the L2 learners will restructure the grammar once the L1-based representation grammar fails. The L2 acquisition is UG-constrained.

Haznedar (1997) provided evidence for FTFA by conducting a case study. He implemented a study of a Turkish child who was learning English with a result of the full transfer from the word order from Turkish and the full access to the word order of English. White (1985b, 1986) conducted a grammaticality-acceptance task on English null subjects for

L1 French learners and L1 Spanish learners of English. She concluded that Spanish-speaking learners of English are more likely to accept English null subjects than French speakers as Spanish was a null subject language. And this supports FTFA. Yuan (1998) implemented English-speaking and Japanese-speaking learners of Chinese acquiring the long-distance reflexive *ziji* (*zìjǐ* 自己/oneself). The Japanese-speaking learners in the study behaved similarly to native speakers of Chinese as long-distance reflexive is existent in Japanese whereas the beginning English-speaking learners of Mandarin did not, initially show the *full transfer*. The English-speaking group of advanced proficiency group, however, showed evidence of the successful acquisition of the long-distance properties of *ziji*, indicating that L2 learners are not confined to L1 properties, supporting *full access*. However, this model has been criticized on both its theoretical and empirical grounds. Jordens (2003) stated the FTFA is not able to explain why some structures have a specific sequence in the L2 learner's interlanguage. Meisel (2000) pointed out that the empirical study on the main subject in the study from Schwartz and Sprouse (1994, 1996) was insufficient as it provided only one oral production data from the subject. Furthermore, the data had been collected after the subject, Cevdet, was in Germany for one year with 10-hours exposure of German every week. Meisel concluded that the data does not reflect the learner's L2 initial state and the findings are not in line with FTFA.

#### 2.2.2.2 The Minimal Trees Hypothesis (MT)

MT proposes that only part of the L1 grammar is considered in the initial state. Vainikka and Young-Scholten (1994, 1996a, 1996b) claim that the initial grammar lacks functional

categories. It is hypothesized that grammars in the earliest stage are not the same as those in the later state. According to this hypothesis, the full complement of functional categories is not seen in the initial state even though the functional categories are available in UG. It indicates that as the input increases, it will trigger the Determiner, Inflection, and Complimentizer and associated projections (Determiner Phrase, Inflection Phrase, Complimentizer Phrase). Vainikka and Young-Scholten also claim that the value of the headedness of lexical categories will be reset before the appearance of the functional categories. On the other hand, the L2 functional categories and its properties will be acquired by the learners without any transfer.

There are many proponents of the Minimal Tree Hypothesis research which do not align with the argument that the functional categories emerge in the initial state. Haznedar (1997) had NegP in the data from the subject's early productions which is inconsistent with the Minimal Tree. Grondin and White (1996) presented determiners from the earliest recordings of the two English-speaking children learning French. Furthermore, they reported the presence of reflexives of IP. In Lakshmanan (1993/1994), a 4-year-old Spanish child had IP when learning English, which supported the use of the copula *be* in VP.

In summary, the MT claimed that the initial state of the interlanguage excludes the functional categories but lexical categories are included. The functional categories which are available from UG emerge from the bottom, up in the process of language acquisition.

#### 2.2.2.3 The Valueless Features Hypothesis

Eubank (1993/94, 1994a, 1996) claims that there is 'weak' transfer in L2 acquisition as

the L1 grammar largely is maintained. Both L1 lexical and functional categories are not absent in the earliest grammar. She also claims that the feature strength of L1 functional categories is not able to be transferred, hence the term *valueless*.

White (2003) stated that lexical and functional categories are included in the initial state as well as features. But the L2 feature and morphological paradigms (such as root or stem) will not be acquired in the process. White (2003) listed several studies against this hypothesis. Yuan (2001) examines the L2 acquisition of Chinese by adult native speakers of French and English learning Chinese. L1 English shares the property of weak feature strength with the L2 Chinese while L1 French has strong feature. The results that both learners showed high rates of oral production of the verb position and the high acceptability of the grammatical verbs are inconsistent with the Valueless Features Hypothesis since they provide no evidence for optional verb raising.

#### 2.2.2.4 The Developmental Moderated Transfer Hypothesis and Processability Theory

Pienemann (1998, 2005a) discussed in the Developmentally Moderated Transfer Hypothesis (DMTH) that L1 transfer features are restricted to the processability of the L2. It is “sensitive to the developmental state of the learner’s language” (Pienemann et al., 2005, p.111). Pienemann considered that this Processability Theory was validated to predict “staged development for any second language” even though it is primarily designed for ESL learners (Pienemann, 2011, p.129). He provided the processability hierarchy as shown in Table 1: 1. No procedure; 2. Category procedure; 3. Noun phrase procedure; 4. Verb phrase procedure; 5. Sentence procedure; 6. Subordinate clause procedure. In the category procedure, he

introduced six stages:

Table 1 Category procedure of Processability Theory (Pienemann, 1998, p.132):

Stage	Phenomena/Criteria	Examples
1	Formulae	How are you?
	Words	Hello, Five Dock. Central
2	Poss-s(Noun)	Pat's cat is fat.
	Plural-s (Noun)	I like cats.
2	-ing	Jane going.
	-ed	John played.
2	SVO-Question	You live here?
	SVO	Me live here.
2	S neg V(O)	Me no live here. / I don't live here.
	Adverb-First	Today he stay here.
3	Wh-SV(O)-?	Where she went? What you want?
	Aux SV(O)-?	Can I go home?
3	Do-SV(O)-?	Do he live here?
	V-Particle	Turn it off.
4	Wh-copula S(x)	Where is she?
	Copula S (x)	Is she at home?
5	3sg-s-	Peter likes bananas.
	Aux-2 <sup>nd</sup> -?	Why did she eat that?
5	Neg/Aux-2 <sup>nd</sup> -?	Why didn't you tell me?
	Cancel Aux-2 <sup>nd</sup>	I wonder what he wants

In contrast to FTFA, the Developmentally Moderated Transfer Hypothesis (DMTH) proposed that transfer is constrained by processability, particularly by the capacity of the L2 learner's language processor in the course of acquisition (Pienemann 1998, Pienemann et al., 2005a). This means "the L2 learners can only transfer features from the L1 when they are developmentally ready to acquire them" (Pienemann et al., 2005a, p.85). It is assumed that L1 structures are accessible once they are processed by the developing L2 formulator. Moreover, this assumption does not exclude the effects of typological proximity and distance

on L2 acquisition at the initial state. The DMTH (Pienemann, 2011) makes three specific predictions.

1. *If the L1 and the L2 contain the same structure and if it is acquired late, it will not be transferred at the initial state.*
2. *Nevertheless, this constellation does imply an advantage of learners with L1-L2 similarities over learners whose L1 does not contain the structure in question: The given structure will be acquired more effectively by learners with L1-L2 similarities than by other learners once it is processable.*
3. *If the L1 and the L2 contain different structures which appear early, the L1structure will not be transferred at the initial state. Instead, the L2 structure will be produced very early because it is readily processable ( p.77).*

Evidence for this hypothesis has come from many studies. Håkansson, Pienemann and Sayehli (2002) conducted an oral speech production of 20 Swedish learners in a school context. The results showed the learners did not transfer the V2-structure at the initial state even though both German and Swedish are V2 languages. Kawaguchi (1999, 2002, 2005) conducted a longitudinal study on the acquisition of L2 Japanese by two beginning learners with English as L1. It turned out the learners may employ English SVO word order even though Japanese has a preferred SOV pattern. Lenzing (2013) conducted a combined cross-sectional and longitudinal study on German L2 English learners in an elementary school. The results strongly support the claims of the DMTH and served as counterevidence to the FTFA that transfer is not the driving force in SLA, as the data show minimal L1 *transfer*.

### 2.3 Research on Chinese Wh-questions

Due to its *wh-in-situ*, Chinese *wh*-questions have been a hot research topic in syntax and Second Language Acquisition. Huang (1982) claimed that *wh*-words are quantificational operators and English has strong [wh] feature while Chinese has weak [wh] feature on the

basis of Chomsky's Principle and Parameter framework (Gao, 2009). With the different degrees of [wh] features between English and Chinese, English L2 learners are required to reset the parameter of [wh] feature from strong to weak, from *wh*-movement to *wh-in-situ* to acquire the Chinese *wh*-questions successfully.

Yuan (2007) examined the behaviors of Chinese *wh*-words by implementing a study in English L2 learners' acquiring the simple and embedded Chinese *wh*-questions. An acceptability judgment test was adopted, containing 18 types of sentences in which 15 types are related to *wh*-questions and 3 are yes-no questions. The subjects were asked to judge the questions from "completely unacceptable (-2)" to "completely acceptable (+2)". The target *wh*-words in the study includes nominal *wh*-words (such as *shéi/who* and *shénme/what*) and adverbial *wh*-words (such as *shénme shíhou/when*, *nǎr/where*, *zěnme yàng/how*, and *wèi shénme/why*). Even though Yuan concluded that no L1 transfer was not found in L2 learners, he described that the beginner group (4 months of Chinese studying on average) showed significant differences in accepting *wh*-questions *in situ* or rejecting *wh*-movements compared to other groups, which indicates that the beginners had difficulty in resetting the weak [wh] feature in Chinese *wh*-questions and the beginner group had L1 *wh*-movements in the study which was in line with FTFA.

Gao (2009) implemented an one-year longitudinal study on first-year English L2 learners. Two tasks were conducted four times respectively to examine the participants' L2 Chinese simple and embedded *wh*-questions including the Grammaticality Judgment Task and Oral Production Task. The *wh*-words were categorized into three groups: the object *wh*-

words (such as *shéne/what*, *shu (the same as shā)/who*), the attributed *wh*-words (such as *shéne/what*, *nǎ/which*, *jǐ/how many*), and adverbial *wh*-words (such as *nǎr/where*, *zěnme yàng/how*, *gēn shuí(shéi)/with whom*, *duō jiǔ/how long*). As the results shown in her dissertation, Gao summarized that to the simple *wh*-questions, the acquisition of these three categories was: the adverbial *wh*-words are the most difficult, the attributive *wh*-words rank the middle, and the object *wh*-words were the easiest. In addition, the results did not confirm that the initial learners had acquired which supported the FTFA. However, the stimuli for each test were varied making the results for each test (independent variable) not reliable. For example, she adopted four object *wh*-words, four attributed *wh*-words and two adverbial *wh*-words in the first test, while she used two object *wh*-words, five attributed *wh*-words and three adverbial *wh*-words in the second test. With the different stimuli in each test, it was not accurate to get an objective conclusion.

Zhang (2013) implemented a longitudinal study on the acquisition of Chinese *wh*-questions by three L2 Chinese learners in Australia. Her study built on the Processability Theory (Pienemann 1998, 2005a). Zhang hypothesized that the Chinese *wh*-questions would be acquired when the canonical structure was acquired by L2 learners as Chinese *wh*-questions own the feature of *in-situ* which is similar to canonical structure. Zhang collected 26 sets of oral data from the three L2 learners from 5th week of their first semester to the 36<sup>th</sup> week (9 times interviews with the learners) and analyzed the production of *wh*-question by the learners. She confirmed that the L2 learners acquired the *wh*-questions successfully without any fronting of the *wh*-words which contradicted to FTFA. However, so much

critical information in the process of collecting the data had not been described in her study, such as what exact *wh*-questions had been targeted, how she conducted the interviews with the participants, what *wh*-questions had been valid for analysis leaving us no convincing evidence of L2 learners' Chinese *wh*-questions.

In conclusion, with the limited research and the limitations of the studies mentioned above, the current study tries to provide more accurate data on the acquisition of Chinese *wh*-questions by English L2 learners through a timed Grammaticality Judgment Task. The *wh*-words included up to ten with different function in the *wh*-questions, such as object, modifier, and the adverb. From this study, the author would analyze the results through SPSS and elaborate how the results would be in line with any hypotheses in the previous sections.

## CHAPTER 3

### METHODOLOGY

Based on the research discussed in chapter 2, this chapter introduces the methodology and procedures employed for this present study. A detailed description of the Grammaticality Judgment Task (GJT), the participants, the stimuli, and the procedures of the study follow.

#### 3.1 The Grammaticality Judgment Task

Grammaticality Judgment Task (GJT) is one of the dominant data-collection tools applied in the early studies on UG and L2 acquisition dating back to late 70s and early 80s (Bialystok, 1979; Gass, 1983). It is used to measure the L2 learners' language knowledge and competence. Linguistic competence (Chomsky, 1965) is considered hard to measure directly as it refers to the internalized knowledge of a language. However, the performance, which reflects how learners use the language, can demonstrate a speaker's competence. Therefore, competence can be inferred from performance and that grammaticality judgments provide data of the L2 learners' performance (e.g. White, 1989; Cook, 1990) for researchers who work on Universal Grammar (UG) and L2 acquisition.

GJT allows researchers to assess what is not possible in the interlanguage grammar. Researchers can employ the sentence structures in grammatical and ungrammatical items in accordance with their research objectives for the subjects to make judgments. Therefore,

researchers are able to get the data from the subjects which might not be provided by the subjects from a production experiment. In addition, researchers could also violate the sentence structure (White, 1989) in a GJT.

Alanazi (2015) indicated that an immediate judgment refers to a judgment without giving participants plenty of time to make decisions. A timed GJT requests the subjects to determine the grammaticality of a sentence within a limited time in order to better test their implicit awareness, because they might not have enough time to complete the task with their explicit awareness (DeKeyser, 2003).

The timed GJT was adopted in the current research, to examine if the L2 Chinese learners implicitly aware that the Chinese *wh*-questions are *in-situ*. The participants were asked to make judgments grammatical and ungrammatical by checking the boxes of “correct” and “incorrect” on the right side of the thirty-four questions. The participants were expected to finish the GJT and the six questions pertaining to the language background survey within ten minutes.

### 3.2 Participants

The participants include Chinese native speakers (n=10) and L2 Chinese learners (n=37) who are all students of a large public university in the southern U.S. The L2 learners are composed of three different classes taught by three different instructors: CHIN 111 (n=16), CHIN 201(n=10), and CHIN 211 (n=11). The course CHIN 111 is opened for the first-semester learners to take class with the instructor Monday through Friday for 50 minutes during the semester with 30 minutes tutoring after class per week (4.6 hours/ week). The

course CHIN 201 is for the third-semester learners to take class Monday, Wednesday, and Friday for 50 minutes per week (2.5 hours/ week). CHIN 211 is the course for third-semester learners to take class with the instructor Monday through Friday for 50 minutes during the semester with 30 minutes tutoring after class per week (4.6 hours /week). CHIN 211 pre-requires L2 learners to attend the Summer Intensive Program which covers the regular courses of the first two semesters. The learners who passed Intermediate Low of the oral proficiency interview (OPI) of after attending the program are qualified to take course CHIN 211. CHIN 111 and 201 are regular courses for any students who are enrolled in the Chinese learning without a proficiency test. The textbook of CHIN 111 is *Integrated Chinese Level I* (3<sup>rd</sup> Edition) (Liu et al., 2010) and CHIN 211 and 201 is *Integrated Chinese Level II* (3<sup>rd</sup> Edition) (Liu et al., 2010). Participants did not finish learning the whole textbook when the GJT was implemented. The information on the composition of the participants is listed as follows:

Table 2 Participants of the GJT

Groups	Number	Male/ Female	Age (Mean)	heritage	Length of Chinese study (Mean year)
Native Speakers	10	4/6	25	10/10	N/A
CHIN 111	16	7/9	19.5	1/16	2.375
CHIN 201	10	0/10	20	2/10	2.4
CHIN 211	11	5/6	18.09	0/11	2.59

Out of the three courses that took part in the GJT, 16 students in CHIN 111 were tested, accounting for 34.04% of the total participants. Ten students from CHIN 201 that were tested accounted for 21.28% of the participants, while eleven students from CHIN 211 accounted for 23.4% of the participants. Ten native speakers, who also took part in the test accounted

for 21.28% of the participants.

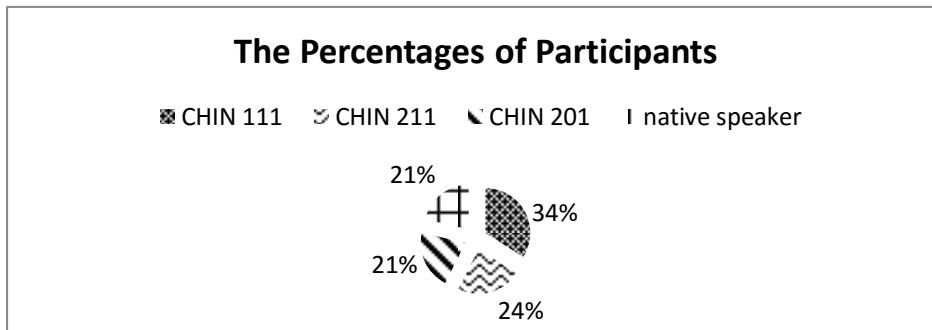


Figure 3 Percentages of Participants of the GJT

### 3.3 Stimuli

In the current study, the stimuli are based on the first five lessons of the Chinese textbook *Integrated Chinese Level I Part I (3<sup>rd</sup> Edition)* (Liu et al., 2010), which includes the topics of greetings, family, dates and time, and hobbies. The purpose of doing so was to make sure that the employed words were familiar to the students without having comprehension difficulties. *Wh*-questions introduced in these five lessons are simply structured in SVO pattern. In addition, to counteract the difficulties of reading Chinese characters, students heard a recording of each sentence on the GJT.

The GJT focuses on ten *wh*-words employed from the lessons. They are listed as follows (also see English version of the GJT in Appendix II). The number also reflects the sequence of the *wh*-words appearing in the textbook.

Table 3 Different types of *wh*-words and their grammatical functions

Wh-word	grammatical function	Position (fronted/not fronted)
1 什么(shén me /what)	modifier	not fronted
2 什么(shén me /what)	object	not fronted
3 谁 (shéi /who)	object	not fronted
4 几 (jǐ/ how many)	adverb	not fronted
5 几岁(jǐ suì /how old)	adverb	not fronted
6 怎么样(zěn me yàng / how)	adverb	not fronted

7 几点(jǐ diǎn /what time)	adverb	not fronted
8 为什么(wèi shéi me/ why)	adverb	fronted/not fronted*
9 谁的(shéi de /whose)	adjective	not fronted
10 在哪儿(zài nǎr /where)	adverb	fronted

\*In the textbook, the *wh*-word “why” fronted and not fronted are both introduced as the grammatical function of adverb. The “not-fronted why” appears in Lesson 3 and “fronted-why” appears in Lesson 4. They are both considered grammatically correct in the GJT.

The GJT consists of 34 questions: 10 questions with fronted *wh*-words (29.41%), ten questions with not-front *wh*-words (29.41%) and 14 fillers (41.18%). Nine of the fronted *wh*-word questions are ungrammatical because the “front why” *wh*-word is grammatical. Hence 11 *wh*-questions are grammatical. The Chinese *wh*-words stay *in-situ*. The grammatical questions were designed to test whether *wh-in-situ* parameters were set in the participants’ minds. The ungrammatical questions were employed to test whether the participants were able to detect the violations of *wh-in-situ*. The ungrammatical sentences were all otherwise grammatical including the correct word order, tense and gender, only fronting the *wh*-words.

For each item to be judged, two responses: “correct” or “incorrect” were provided. “Correct” refers to considering the question grammatical while “incorrect” means ungrammatical.

Fillers are made up of yes-no questions to distract the learners from tested *wh*-questions. Grammatical and ungrammatical items are also included in the filler items. The grammatical and ungrammatical sentences were presented to the participants in random order. Examples of a grammatical *wh*-question (No.1 from Table 4), an ungrammatical *wh*-question (No.7 from Table 4), a grammatical filler question (No.17 from Table 4), and an ungrammatical filler question (No. 2 from Table 4) are listed in Table 4:

Table 4 Samples of GJT (\*means ungrammatical)

1. zhè shì shù í de zhào piàn  
这 是 谁 的 照 片?  
'Whose picture is this?' correct incorrect
2. \*kě yǐ wǒ yào yī bēi chá ma  
可 以 我 要 一 杯 茶 吗?  
'May I have a cup of tea?' correct incorrect
17. wǒ yào yī bēi kā fēi kě yǐ ma  
我 要 一 杯 咖 啡 可 以 吗?  
'May I have a cup of coffee?' correct incorrect
7. \*shu íde bàba zhèshì  
谁 的 爸 爸 这 是?  
'Whose dad is this?' correct incorrect
- 

The *wh*-word *why* can be placed in the front of the sentence (9a) with the emphasis being more on the reason for the whole sentence. If it follows the subject in the *wh*-questions (9b), the subject receives the greater emphasis. Essentially, the grammatical function is no different as the deep structure of the sentence is syntactically the same.

- (9) a. wéi shén me xiǎo wáng kàn shū  
为 什 么 小 王 看 书?  
why Name read book  
'Why does Xiaowang read books?'
- b. xiǎo wáng wéi shén me kàn shū  
小 王 为 什 么 看 书?  
Name why read book  
'Why does Xiaowang read books?'

Since a timed GJT was employed in the current study, the participants were expected to make judgments within the limited time. When the recording was made, an interval of 5 seconds was designed between the items in the GJT. The author had recorded the sound recording of all the stimuli in the GJT through the application of Voice Memos on iPhone.

Each item was read at a speed of 120 words per minute, which was aligned to the requirement of speech rate for Level 1 test takers of HSK (*Hànyǔ Shuǐpíng Kǎoshì* / Chinese Proficiency

Test) (Hankao, 2012) . The whole recording is 5 minutes and 32 seconds.

A short survey on participant background was given following the task. The survey included questions related to the gender, age, the length of Chinese study, the number of Chinese classes they had taken, whether they have been to China, and whether Chinese is their heritage language (See Appendix I).

### 3.4 Procedure

Preparations were made before implementing the GJT. Students had been notified by their instructors that they would be invited to take part in this experiment either in the first or the last ten minutes of their Chinese classes. Moreover, the order of the 34 items (grammatical, ungrammatical, and filler questions) had been randomized manually to distract the students from the purpose of the GJT. The written IRB-approved consent form and the paper based sheet of GJT were distributed to each of the participants (the consent form, the complete GJT, and the survey on participant background are found in Appendix I).

The L2 participants were given instructions on how to complete the task in class. They were encouraged to make judgments on the written sheet after listening to the recording and continue to finish the survey in the classroom as soon as possible. This was to ensure that the learners made quick judgments according to their first intuitions instead of retrieving explicit grammar knowledge or considering the pattern of the test items before they made a decision. The recording was played without any pauses. It took 7 to 8 minutes for each class to finish the whole process. The native speakers did not listen to the recording but had finished the judgements where they met with the author, such as in the library or on the bus due to the

limitation of the availability. The participants' GJT sheets were collected, coded and analyzed by using the statistical package software SPSS 16.0.

## CHAPTER 4

### RESULTS AND DATA ANALYSIS

In this chapter, the results of this study will be analyzed in accordance with the methodology mentioned in Chapter Three. The results of the GJT will be discussed in the following sections. First, the differences between the native speakers and L2 Chinese learners will be presented. Significantly different judgments of grammatical and ungrammatical questions have been further analyzed. Second, the results between Chinese Level 1 and Level 2 have been analyzed. The significantly different grammatical and ungrammatical questions have also been further analyzed. Since the lengths of study are varied even within Level 1, the L2 learners have been re-grouped into students of initial state and non-initial state in accordance with their length of Chinese study. The results of these two groups have also shown to be significantly different. Lastly, the two classes of Level 2 have been examined as the class CHIN 211 had been trained intensively before the semester started while CHIN 201 had never taken any proficiency tests.

#### 4.1 Results and Analysis of the GJT between Native Speakers and L2 Chinese Learners

##### 4.1.1 The Performance of Native Speakers and L2 Learners on all *wh*-questions

There were ten fronted *wh*-questions and ten unfronted *wh*-questions designed as the target stimuli in the GJT. Each correct judgment of the *wh*-question counts one point. The total

score is 20 points, 11 points for grammatical items (fronted *why* should be judged as grammatical) and 9 points for ungrammatical items. The following figure shows how native speakers and L2 learners performed.

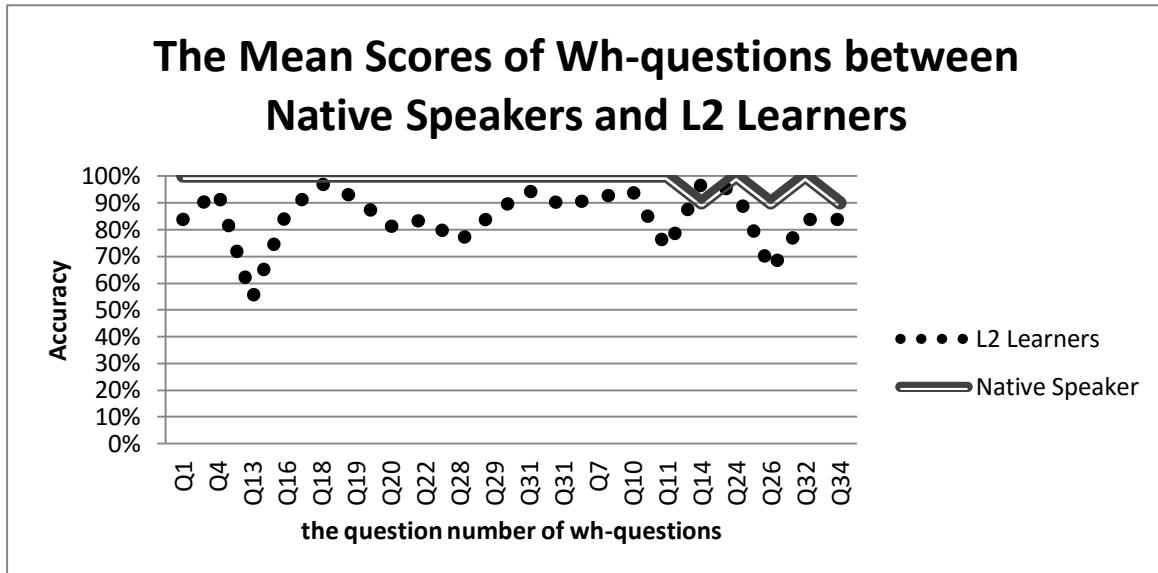


Figure 4 The Mean Scores of *Wh*-questions between Native Speakers and L2 Learners

As shown in Figure 4, it can be seen that native speakers scored 100% correctly for 17 questions. They scored 90% on question 14 (“what time”), 26 (“how old”) and 34 (“what modifier”). The native speakers had an accuracy of 98.34% on all *wh*-questions, while the L2 learners had an accuracy of 85.20%.

The mean scores and the percentages of correct grammatical and ungrammatical items by the native speakers and L2 Chinese learners were listed as follows:

Table 5 The Mean Scores (MS) and Percentages (%) of accuracy on grammatical and ungrammatical items between Native Speakers and L2 Chinese learners

	Grammatical MS (11 in total)	Ungrammatical MS (9 in total)	All <i>wh</i> -questions	
			Average %	%
1. Native Speakers	11	100%	8.7	96.67%
2. L2 Chinese Learners	9.2973	84.52%	7.7297	85.89%

From Table 5, native speakers performed 100% correctly on grammatical items (MS=11)

and 96.67% on ungrammatical ones (MS=8.7) with an average of 98.34% on all the *wh*-questions (MS=19.7). The non-native speakers had the correctness percentages of 84.52%, and 85.89% on grammatical items (MS=9.2973) and ungrammatical items (MS=7.7297) respectively with 85.20% on the whole (MS=17.027).

#### 4.1.2 The Significantly Different Grammatical Items between the Native Speakers and L2 Learners

The t-test in SPSS was run to see if there are significantly differences between the native speakers and L2 learners. On the whole, the native speakers performed significantly better than non-natives on both grammatical items ( $t=3.310$ ,  $df=45$ ,  $p=0.002$ ) and ungrammatical items ( $t=2.294$ ,  $df=45$ ,  $p=0.012$ ). The results showed that eight of the eleven *wh*-questions in the grammatical judgment were significantly different. Five of nine *wh*-questions in the ungrammatical judgment were significantly different.

The grammatical items with significant differences between native speakers and L2 learners were Question 1, 13, 16, 19, 22, 28 and 29. The Mean Scores (MS),  $t$ ,  $df$ ,  $p$ -values of the *wh*-words of each item are listed below.

Table 6 The Significantly Different Grammatical Items between Native speakers and L2 Learners

No.	<i>wh</i> -word	MS (native/L2)	<i>t</i>	<i>df</i>	<i>p-value</i>
1	whose	1/0.8378	1.361	45	0.002
13	what time	1/0.5405	2.583	45	<0.001
16	what (object)	1/0.8649	1.223	45	0.006
19	how	1/0.9189	0.919	45	0.05
20	not fronted-why	1/0.8108	1.495	45	<0.001
22	where	1/0.8378	1.361	45	0.002
28	fronted –why	1/0.7568	1.754	45	<0.001

29 what (modifier)	1/0.8649	1.223	45	0.006
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As shown in Table 6, it can be found that the *wh*-words “what time”, “fronted-why”, and “not fronted-why” are found significantly different ( $p<0.001$ ) between the native speakers and the L2 learners lay in. The *wh*-words “whose”, “what (object)”, “where”, and “what (modifier)” are found statistically different ( $p<0.05$ ). The *wh*-word “how” is marginally different ( $p=0.05$ ).

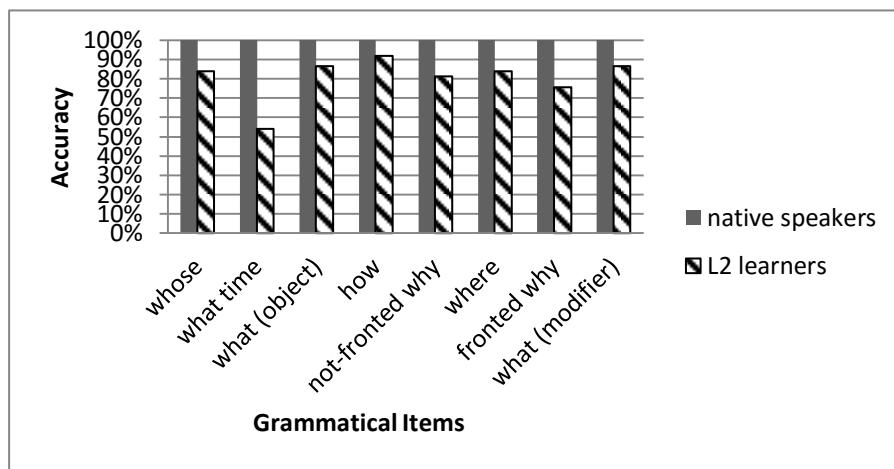


Figure 5 The Accuracies of the Grammatical Items between Native Speakers and L2 Learners

Figure 5 shows that L2 learners performed the poorest on “what time” with an accuracy of 54%. The fronted “why” has an accuracy of 76%. The non-fronted “why”, has an accuracy of 81%. The *wh*-words “whose” and 22 “where” had accuracies of 84%. Question 16 “what (object)” and 29 “what (modifier)” had accuracies of 86%. Question 19 “how” had the highest accuracy of 92%.

#### 4.1.3 The Performance of Ungrammatical Items between Native Speakers and L2 Learners

Among the nine ungrammatical items, five of them (Question 3, 7, 11, 26, and 32) were

significantly different between native speakers and L2 learners. They were listed as follows:

Table 7 The Significantly Different Ungrammatical Items between Native Speakers and L2 Learners

No.	wh-word	MS (native/L2)	t	df	p-value
3	how	1/0.8919	1.077	45	0.018
7	whose	1/0.9189	0.919	45	0.050
11	who (object)	1/0.7297	1.883	45	<0.001
26	what time	0.9/0.6486	1.549	45	<0.001
32	where	1/0.8378	1.361	45	0.002

From Table 7, it can be found that the *wh*-words “who (object)” and “what time” are significantly different ( $p<0.001$ ) between the native speakers and the L2 learners. The *wh*-words “how” and “where” are statistically different ( $p<0.05$ ). And the *wh*-word “whose” is marginally different ( $p=0.05$ ).

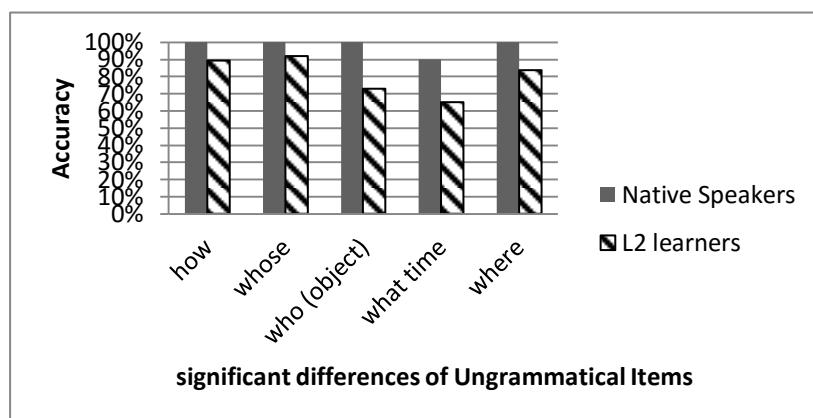


Figure 6 The Accuracies of the Significant Differences of Ungrammatical Items

Figure 6 shows that the *wh*-word “what time” had the poorest performance in L2 learners with an accuracy of 65%. The *wh*-word “who” has an accuracy of 73%. The *wh*-word “where”, ranked the third with an accuracy of 84%. The *wh*-words “how” and “whose” has accuracies of 89% and 92% respectively.

In the 37 L2 learners, 12 of them acquired “what time” on both grammatical and

ungrammatical items while the rest of the learners failed on either the grammatical or the ungrammatical item. The acquisition is 32%.

In conclusion, the L2 learners performed well on the whole with an accuracy percentage of 85%. Three grammatical items did not show statistically significant differences between L2 learners and native speakers: “how many”, “how old”, and “who (object)”. The *wh*-words “what time”, “where”, “whose”, and “how” show significant differences in both grammatical and ungrammatical items.

#### 4.2 The High and Low Frequencies of the *Wh*-words in GJT among L2 Learners

The frequency in SPSS was used to measure the 37 L2 learners’ performance. The higher the frequency of the item was, the more points the L2 learners scored the item correctly.

Table 8 The Frequencies of *Wh*-words in the 37 L2 Learners

<i>Wh</i> -word	Frequency of not-fronted	%	Frequency of fronted	%
who (object)	35	94.59%	27	72.97%
how many	35	94.59%	35	94.59%
what (modifier)	32	86.49%	31	83.78%
how old	36	97.3%	36	97.3%
how	34	91.89%	33	89.19%
what time	20	54.05%	24	64.86%
why	30	81.08%	28	75.68%
whose	31	83.78%	34	91.89%
what (object)	32	86.49%	35	94.59%
where	31	83.78%	31	83.78%

Table 8 shows that the *wh*-words “how old” and “how many” had frequencies above 35 (accuracies above 90%) on both fronted and non-fronted items. Except for “what time”, the other not-fronted *wh*-words have frequencies above 30 indicating that 80% of the learners

accepted the wh-words *in-situ*. On the fronted items, eight *wh*-words have frequencies above 30, indicating that above 80% of the learners refused the fronted positions of the *wh*-words. Three items have frequencies below 30: “what time”, “why” and “who” indicating learners judged the fronted *wh*-words grammatically correct which demonstrated their L1 transfer.

The findings tended to suggest that a high frequency of a *wh*-word with *wh-in-situ* leads to a high frequency of the correct judgment of a fronted *wh*-question. In other words, if the L2 learners accepted the position of a *wh*-word *in-situ*, they were likely to reject its fronted position. However, this finding might be varied in different levels. It is necessary to examine how significantly different levels of L2 learners performed on the *wh*-words.

#### 4.3 The Acquisition of *Wh*-questions of Level 1 and Level 2

##### 4.3.1 Level 1 and Level 2 learners

Students from CHIN 111 were first-semester learners. The textbook they had been using was *Integrated Chinese Level I (3<sup>rd</sup> Edition)* (Liu et al, 2010). Classes of CHIN 201 and CHIN 211 were third-semester learners. These two classes used the textbook of *Integrated Chinese Level II (3<sup>rd</sup> Edition)* (Liu et al, 2010). Based on the level of the textbook the L2 learners used, CHIN 111 was grouped as Level 1(n=16); CHIN211 and CHIN 201 were grouped as Level 2 (n=21). The mean scores and the percentages of correctness on grammatical and ungrammatical items between the two levels are listed as follows:

Table 9 The Mean Scores (MS) and Percentages (%) of accuracy on Grammatical and Ungrammatical Items between the Two Levels:

Level Number	Grammatical item MS	%	Ungrammatical Item	%
			MS	
Level 1 16	8.8750	80.68%	7.5000	83.33%

Level 2	21	9.6190	87.45%	7.9048	87.83%
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As shown in Table 9, it can be seen that Learners of Level 2 performed better on both items than Level 1 did. Learners of level 2 performed 7% higher on grammatical items than Level 1 did and 4% higher on ungrammatical items. Learners of Level 1 performed better on judging ungrammatical items (83.33%) than grammatical items (80.68%) while Level 2 learners performed similarly on both items (about 87.5%).

#### 4.3.2 The Accuracies of Grammatical and Ungrammatical Items between Two Levels

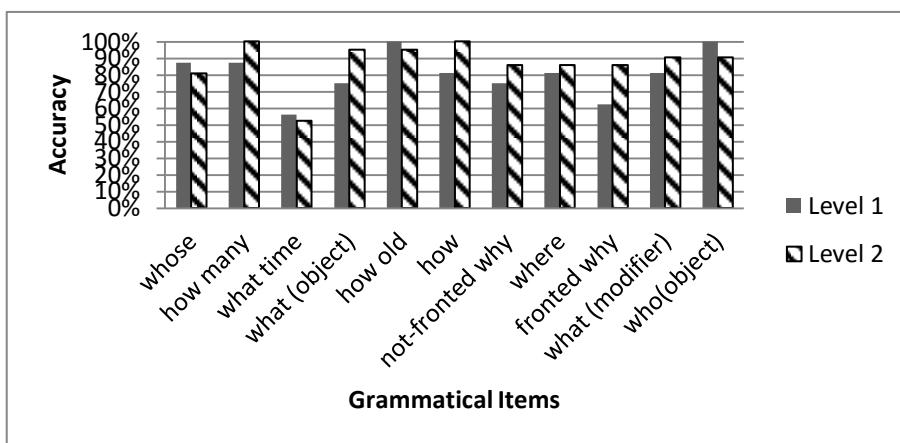


Figure 7 The Accuracies of Grammatical Items between the Two Levels

Figure 7 demonstrates four *wh*-words had been scored 100% correctly on grammatical items in two levels. Learners of Level 1 have accuracies of 100% on “how old” and “who (object)” while Level 2 has accuracies of 100% on “how many” and “how”. Five items have accuracies of over 80% in learners of Level 1 while eight items in Level 2. Four items have accuracies below 80% in learners of Level 1, they are “what time” (56%), “what (object)” (75%), “not fronted why” (75%) and “fronted why” (63%). One item has accuracy below 80% in Level 2: “what time” (52%).

The accuracies of ungrammatical items will be examined to see how these two levels of

students performed on each item shown in the Figure 4.8.

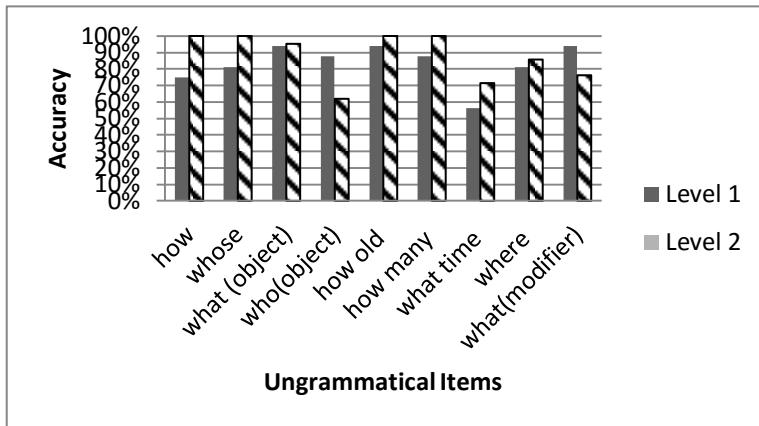


Figure 8 The Accuracies of Ungrammatical Items between the Two Levels

Figure 8 demonstrates that there are four *wh*-words have been scored 100% correctly on ungrammatical items by learners of Level 2: “how”, “whose”, “how old”, and “how many”. Seven items have accuracies of between 80% and 100% in learners of Level 1 while two items in Level 2. One items has accuracy below 80% in learners of Level 1, it is “what time” (56%). Three item have accuracies below 80% in Level 2: “who (object)” (62%), “what time” (71%) and “what (modifier)” (76%).

To sum up, learners of both levels have their own strengths and weaknesses in the judgments of grammatical and ungrammatical items. Level 1 performed well on “how old” and “who (object)” while Level 2 performed well on “how many” and “how”. Learners of Level 2 performed better on the ungrammatical items than Level 1. However, both of them performed poorly on “what time”. Significant differences on grammatical and ungrammatical items between the two levels will be further examined in the next section.

#### 4.3.3 The Significantly Different Grammatical and Ungrammatical Items between the Two Levels

The Independent t-test in SPSS was run and found that students of the two levels did not perform significantly differently on grammatical items ( $t = -1.408$ ,  $df = 35$ ,  $p = 0.767$ ), but did perform significantly different on ungrammatical items ( $t = -0.933$ ,  $df = 35$ ,  $p = 0.003$ ). However, when t-test was run through all items, five grammatical items and six ungrammatical items were found different between Level 1 and Level 2.

Table 10 The Significantly Different *Wh*-words between Level1 and Level 2

No.	<i>wh</i> -word	<i>t</i>	<i>df</i>	<i>p-value</i>	category
4	how many	-1.685	35	<0.001	grammatical
16	what (object)	-1.815	35	<0.001	grammatical
19	how	-2.141	35	<0.001	grammatical
28	fronted why	-1.646	35	0.003	grammatical
31	who (object)	-1.262	35	0.008	grammatical
3	how	-2.573	35	<0.001	ungrammatical
7	whose	-2.141	35	<0.001	ungrammatical
11	who (object)	1.763	35	<0.001	ungrammatical
14	how old	-1.151	35	0.019	ungrammatical
24	how many	-1.685	35	<0.001	ungrammatical
34	what (modifier)	1.473	35	0.002	ungrammatical

As shown in Table 10, it can be found that on grammatical items, the *wh*-words “how many”, “what (object)”, and “how” are significantly different ( $p < 0.001$ ) on grammatical items; the *wh*-words “fronted why” and “who (object)” are statistically different ( $p < 0.05$ ).

On the ungrammatical items, the *wh*-words “how”, “whose”, “who (object)”, and “how many” are significantly different ( $p < 0.001$ ); the *wh*-words “how old” and “what (modifier)” are statistically different.

To sum up, learners of different levels had significant differences on grammatical items and ungrammatical items. From the table, it can be generalized that students of a higher level

did not always perform better than the lower level did. In the current study, students of Level 1 performed significantly better on the grammatical item of “who (object)”, ungrammatical item of “who”, and ungrammatical item of “what (modifier)” than the Level 2 did. However, students of Level 2 performed significantly better on the rest of seven items.

#### 4.3.4 The Acquisition of *Wh*-questions by Learners of Level 1 and Level 2

From the previous section, we can conclude that learners of Level 2 performed better than those of Level 1 did. Compared to the native speakers, these two levels had significant differences. This implies that although Level 2 performed significantly better, there were grammatical and ungrammatical judgments remaining that not were acquirable. In the following table, the symbol “+” suggests there were no significant differences between Level 1 and native speakers or between Level 2 and the native speakers, furthering providing the evidence of the acquisitions of *wh*-questions by the learners. The symbol “-” indicates that learners failed to acquire the *wh*-question. The number on the left of each column refers to the *wh*-word with not-fronted position while the numbers on the right refers to its corresponding fronted position.

Table 11 The Acquisitions of *Wh*-questions by Students of Level 1 and Level 2

Level	whose		how		how many		what (object)		Who (object)		what time		how old		why		where		What (modifier)	
	1	7	19	3	4	24	16	10	31	11	13	26	18	14	20	28	22	32	29	34
1	-	-	-	-	+	+	-	+	+	-	-	-	+	+	-	-	-	-	-	+
2	-	+	+	+	+	+	-	+	-	-	-	-	-	-	-	-	-	-	-	+

As shown in Table 11, it can be seen that learners of Level 1 were able to acquire “how

many” and “how old”. They identified that the *wh*-word “what (modifier)” and “what (object) are not fronted but they judged the counterpart of grammatical items incorrectly. They accepted “who (object)” not fronted but they were not able to distinguish when it was fronted. On the other hand, learners of Level 2 were able to acquire “how” and “how many”. They did not accept *wh*-words “whose”, “what (object)”, and “what (modifier)” to be fronted. However, they had difficulties judging the *in-situ* positions of these three *wh*-words correctly. The remaining items, grammatical and ungrammatical, showed significant differences in the T-test compared to the native speakers.

#### 4.4 The Significance of Grammatical and Ungrammatical Items between the students of

##### Initial and Non-initial State

###### 4.4.1 Definition of Initial State in the Current Study

In response to the language background survey questions, some learners from Level 1 reported that they had been studying Chinese for more than one year. Linguistically speaking, students who studied the language for more than one year were not truly the “first-semester” students. On the other hand, some learners from Level 1 were exposed to Chinese for only 3 months. They were considered at the initial state in their study. The different length of the language study may have also affected the learners’ judgments. The results would be varied if the L2 learners were grouped by their lengths of the language study.

The author grouped the L2 participants into two groups with the cut-off point of 3 months.

Group one was defined as the initial learners (n=6) who had been studying for 3 months and group two is non-initial learners (n=31) who had been studying Chinese for more than 3

months. The information of the newly formed groups shows as in Table 4.8 and it can be seen that ten of non-initial students had been to China and the length of Chinese study was 1.3 years longer than that of the initial students.

Table 12. Participants divided by Length of Study

Groups	Initial Students	Non-initial Students
Number	6	31
Male/ Female	3/3	9/22
Mean Age	19.7	19.1
Heritage speaker	0/6	3/31
Visit to China	0/6	10/31
Mean length of study (year)	0.25	2.8

As shown in Table 12, it can be seen that non-initial learners performed better than the initials did on both items. Non-initial learners performed 14% higher than the initials did on grammatical items and 15% higher on ungrammatical items. The initial learners performed similarly on both grammatical and ungrammatical items with accuracies of approximately 73%. The non-initial learners, on the other hand, performed similarly on both items with higher accuracies of approximately 88%.

Table 13 The Mean Scores and percentages of correctness of GJT, Grammatical, and Ungrammatical Items between Two States

Group	GJT (20)	%	Grammatical Items (11)	%	Ungrammatical Items (9)	%
Initial	14.7123	73.56%	8.1429	74.02%	6.5714	73.02%
Non-initial	17.5667	87.83%	9.5667	86.97%	8.0000	88.89%

#### 4.4.2 The Mean Scores of Grammatical and Ungrammatical Items between the Two States

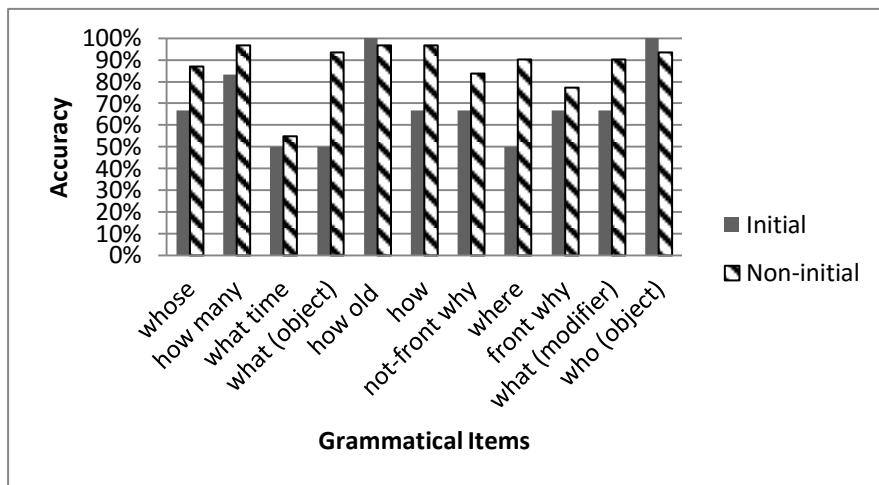


Figure 9 The Accuracies of Grammatical Items between Initial and Non-Initial Students

Figure 9 demonstrates two *wh*-words had been scored 100% correctly on grammatical items by learners of initial state: “how old” and “who (object)”. One item has accuracy between 80%-100% in learners of initial state: “how many” while nine items in learners of non-initial state. Eight items have accuracies below 80% in learners of initial state, they are “what time” (50%), “what (object)” (50%), “where” (50%), “not fronted why” (67%), “fronted why” (67%), “how” (67%), and “what (modifier)” (67%). Two items have accuracies below 80% in non-initial state: “what time” (55%) and “fronted why” (77%).

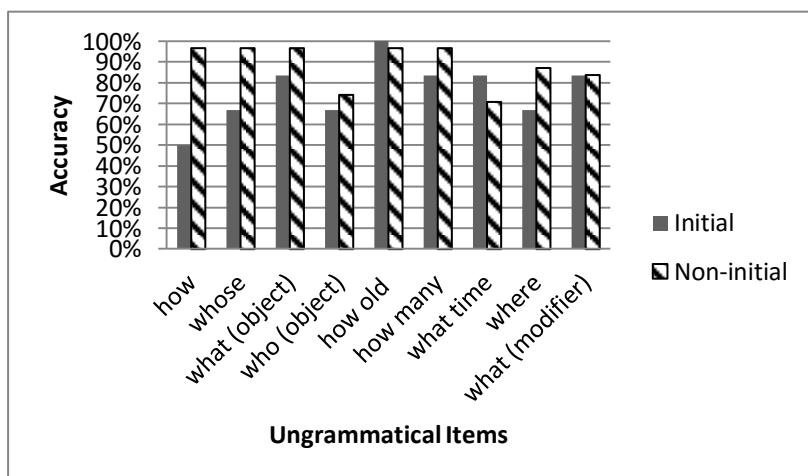


Figure 10 The Accuracies of Ungrammatical Items between Initial and Non-Initial Students

Figure 10 showed that one ungrammatical item of *wh*-word “how old” had been scored 100% correctly by the learners of initial state. Four items have accuracies of above 80% in learners of initial state: “what (object)” (83%), “how many” (83%), “what time” (83%), and “what (modifier)” (83%) while five items in non-initial state: “how” (97%), “whose” (97%), “what (object)” (97%), “how old” (97%), and “how many” (97%). Four items have accuracies of below 80% in learners of initial state: “whose” (67%), “who (object)” (67%), “where” (67%), and “how”(50%). Two items have accuracies of below 80% in learners of non-initial state: “what time” (71%) and “who (object)” (74%).

In conclusion, with a length of study over 2 years, learners of non-initial state performed better than initial state did. They judged 100% correctly on grammatical items of “how old” and “who (object)” and ungrammatical item “how old”.

#### 4.4.3 The Significant Differences on Grammatical and Ungrammatical Items between Initial State and Non-initial State

The Independent t-test in SPSS was run and found that students of the two states perform significantly differently on grammatical items ( $t=-2.987, df=35, p=0.005$ ), and ungrammatical items ( $t= -3.213, df=35, p=0.003$ ). eleven items were found significant between students of initial and non-initial state: six grammatical items and five ungrammatical items. The details are listed in Table 4.10.

Table 14 The Significantly Different *Wh*-words between initial and non-initial state

No.	<i>wh</i> -word	<i>t</i>	<i>df</i>	<i>p-value</i>	category
1	whose	-1.235	35	0.050	grammatical

4	how many	-1.328	35	0.014	grammatical
16	what (object)	-3.146	35	<0.001	grammatical
19	how	-2.633	35	<0.001	grammatical
22	where	-2.607	35	0.002	grammatical
29	what (modifier)	-1.561	35	0.029	grammatical
3	how	-3.950	35	<0.001	ungrammatical
7	whose	-2.633	35	<0.001	ungrammatical
10	what (object)	-1.328	35	0.014	ungrammatical
24	how many	-1.328	35	0.014	ungrammatical
32	where	-1.235	35	0.050	ungrammatical

---

As shown in Table 14, it can be found that on grammatical items, the *wh*-words “how” and “what (object)” are significantly different ( $p<0.001$ ); three items are found statistically different on grammatical *wh*-words “how many”, “where”, and “what (modifier)” ( $p<0.05$ ); the *wh*-word “whose” is marginally different ( $p=0.05$ ).

On the ungrammatical items, the *wh*-words “how” and “whose” are significantly different ( $p<0.001$ ); the *wh*-words “what (object)” and “how many” are statistically different; the *wh*-word “where” is marginally different ( $p=0.05$ ).

It can be generalized that the learners of non-initial state performed significantly better on the *wh*-words of “whose”, “how many”, “what (object)”, “how”, and “where” than the students of initial state shown from the results of the grammatical and ungrammatical items. Besides, learners of the non-initial state had performed significantly better on “what (modifier)” than those of the initial state did. The findings between the students of initial state and non-initial state had strongly supported that the different states in the language study had shown significant differences in language performance.

#### 4.4.4 The Acquisitions of *wh*-questions by students of initial and non-initial state

From the previous section, we suggested that the learners of non-initial state

performed significantly better than the initial did. Compared to the native speakers, these two different states had significant differences. This implies that even though non-initial learners had a better performance than those of initial state, they did not seem to have a full command of the grammatical and ungrammatical items of the *wh*-words.

Table 15 The Acquisitions of *wh*-questions by students of initial and non-initial state

	whose		how		how many		what (object)		Who (object)		what time		how old		why		where		What (modifier)	
	1	7	19	3	4	24	16	10	31	11	13	26	18	14	20	28	22	32	29	34
initial	-	-	-	-	-	-	-	-	+	-	-	-	+	+	-	-	-	-	-	+
Non-initial	-	+	+	+	+	+	+	+	+	-	-	-	+	+	-	-	-	-	-	+

In Table 15, it can be seen that learners of non-initial state were able to acquire “how”, “how many”, “what (object)”, and “how old”. They identified that the *wh*-words “what (modifier)” and “whose” are not to be fronted. But they had difficulty in identifying their *in-situ* position. On the other hand, learners of initial state acquired “how old” only. The *wh*-word “what (object)” was accepted to be *in-situ* by the students of initial state. However, they also accepted it to be fronted. The remaining items, grammatical and ungrammatical, showed great differences in comparison to native speakers.

#### 4.5 Analysis of the Results of students of CHIN 201 and CHIN 211

As mentioned earlier in the introduction of participants, CHIN 201 and CHIN 211 shared the same textbook of *Integrated Chinese Level 2*. Learners of 211 had learned the textbook *Integrated Chinese Level 1* completely in the Summer Intensive Program before starting the textbook of *Level 2*. In addition, learners of 211 studied two more hours each week than learners of 201 in the third semester.

#### 4.5.1 The Mean Scores of CHIN 201 and CHIN 211

Through the comparisons of the mean scores that the two classes performed as a whole, it can be seen that learners of 211 performed better (89.5%) than 201 did (85.5%). Learners of CHIN 211 scored 90.9% on the grammatical items while CHIN 201 scored 83.64%. Both classes performed similarly on ungrammatical items approximately 87%.

Table 16 The Mean Scores and Percentages of accuracy on GJT, Grammatical and Ungrammatical Items

Class	GJT (20)	% Grammatical Items (11)	%	Ungrammatical Items (9)		%
				MS	MS	
CHIN 201	17.1	85.5%	9.2	83.64%	7.9000	87.78%
CHIN 211	17.9	89.5%	10	90.90%	7.9091	87.88%

Learners of CHIN 201 scored 100% correctly on “how many” and “how”. CHIN 211 scored 100% correctly on six grammatical items: “how many”, “what object”, “how old”, “how”, “what (modifier)”, and “who (object)”.

CHIN 201 had five items with accuracies above 90%: “whose”, “what (object)”, “how old”, “where”, and “front why”. CHIN 211 had one item 90%: “not-front why”. CHIN 201 had three items scored 80%: “not-front why”, “what (interrogative)”, and “who (object)”.

CHIN 201 performed poorly on “what time” with a score of 30%. CHIN 211 performed poorly on “whose” and “what time” with scores of 72%.

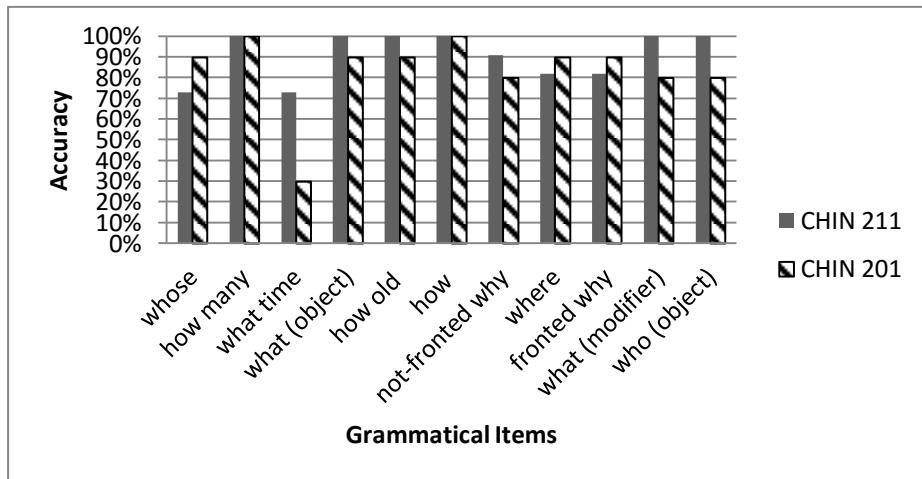


Figure 11 The Accuracies of Grammatical Items between the Two Classes

In the judgments of ungrammatical items, the two classes performed very similarly. Specifically, they scored 100% on the same four items: “how”, “whose”, “how old”, and “how many”. However, they both performed poorly on “who (object)”, with an accuracy of 60%. There were three items in which they had slight differences. In “what time” and “where”, learners of CHIN 201 scored 60% and 80% while CHIN 211 scored 82% and 90% respectively. Learners of CHIN 201 judged 100% correctly on “what (object)” while CHIN 211 scored 90%. Students of CHIN 201 scored 90% on “what (modifier)” while 211 scored 64%.

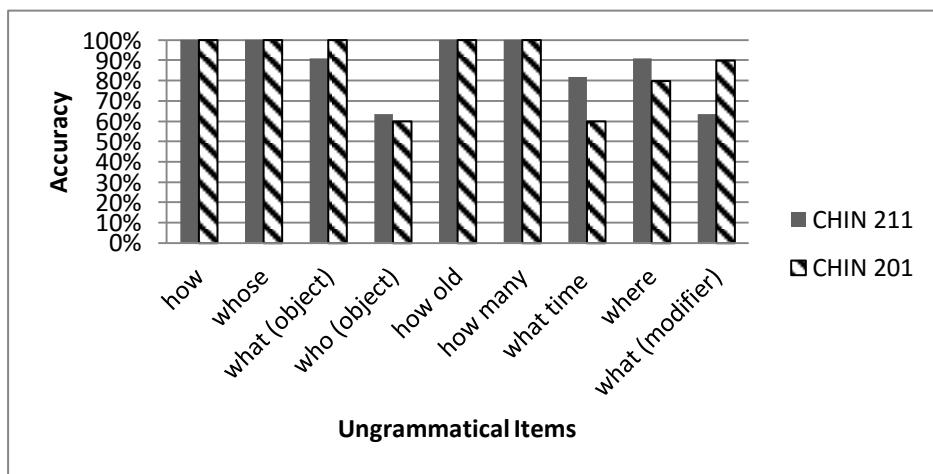


Figure 12 The Accuracies of Ungrammatical Items between the Two Classes

To sum up, in the judgments of the grammatical items, learners of CHIN 211 performed better on: grammatical items of “what time”, “what (object)”, “how old”, “not-front why”, “what (modifier)”, and “who (object)”; and ungrammatical items of “what time”, and “where” than CHIN 201 students. Six items were tied between the two classes: grammatical items of “how many” and “how”, ungrammatical items of “how”, “whose”, “how old”, and “how many”. Learners of CHIN 201 performed better on: grammatical items of “whose”, “where” and “front-why” and; the ungrammatical items of “what (object)” and “what (modifier)” than 211 students did.

#### 4.5.2 The Significantly Different Grammatical and Ungrammatical Items between Classes

##### CHIN 211 and CHIN 201

The Independent t-test in SPSS was run and found that students of the two classes did not perform significantly differently on both items: grammatical items ( $t= 1.338, df=19, p=0.076$ ) and ungrammatical items ( $t= 0.021, df=19, p=0.126$ ). However, when t-test was run through all items, five grammatical items and three ungrammatical items were found different between CHIN 201 and CHIN211. The details are listed in Table 17.

Table 17 The Significantly Different *Wh*-words between CHIN 201 and CHIN 211

No.	<i>wh</i> -word	<i>t</i>	<i>df</i>	<i>p-value</i>	category
1	whose	-0.982	19	0.046	grammatical
16	what (object)	1.052	19	0.029	grammatical
18	how old	1.052	19	0.029	grammatical
29	what (modifier)	1.577	19	<0.001	grammatical
31	who (object)	1.577	19	<0.001	grammatical
10	what (object)	-0.951	19	0.048	ungrammatical
26	what time	1.083	19	0.050	ungrammatical
34	what (modifier)	-1.417	19	0.004	ungrammatical

As shown in Table 17, it can be found that on grammatical items, the *wh*-words “what (modifier)” and “who (object)” are significantly different ( $p<0.001$ ); three items are found statistically different on grammatical *wh*-words “whose”, “what (object)”, and “how old” ( $p<0.05$ ). On the ungrammatical items, the *wh*-words “what (object)” and “what (modifier)” are statistically different ( $p<0.05$ ); and “what time” is marginally different.

In conclusion, learners of both classes tended to be similarly skilled in the judgments. 11 items had been scored 100%. The poor performance of both classes appeared to be “what time” on both grammatical and ungrammatical items. Learners of CHIN 211 performed slightly better on the majority of the *wh*-words than 201 did.

#### 4.5.3 The Acquisition of *wh*-questions by students of CHIN 201 and CHIN 211

From the previous section, we can suggest that both 201 and 211 learners performed well on 11 items. Compared to the native speakers, significant differences had been found out in the two classes. Their performances on both grammatical and ungrammatical items had shown their weaknesses in commanding the *wh*-words from the following table.

Table 18 The Acquisitions of *wh*-questions by students of 201 and 211

	whose		how		how many		what (object)		Who (object)		what time		how old		why		where		What (modifier)	
	1	7	19	3	4	24	16	10	31	11	13	26	18	14	20	28	22	32	29	34
201	+	+	+	+	+	+	-	+	-	-	-	-	-	-	-	-	-	-	-	+
211	+	+	+	+	+	+	+	-	+	-	-	+	+	-	-	-	-	-	+	-

From Table 1, it can be seen that learners of 201 were able to acquire “whose” “how”, and “how many”. They identified that the *wh*-words “what (modifier)” and “what (object)” should not to be fronted. But they had difficulties in identifying their *in-situ* positions. On the

other hand, learners of 211 acquired “whose” “how”, and “how many”. In a striking contrast, 211 accepted the fronted “what (object)”, “who (object)”, “how old”, and “what (modifier)”. The *wh*-word “what time” was accepted not to be fronted by 211 but learners had difficulty in identifying the *in-situ* position of “what time”. The remaining items, grammatical and ungrammatical, showed significant differences in the t-test compared to native speakers.

#### 4.6 Summary

The results and the analyses of the GJT showed that the L2 acquisition of English speakers varies by the different levels, states and classes. The *wh*-words “how” and “how many” had been acquired by most of learners. The learners of initial state had the most issues in the acquisition of *wh*-questions while the non-initial state had the least. This indicated that the length of the L2 study had direct effects on the learners’ language acquisition.

To conclude this study, the acquisition differences between the students of different levels and states will first be discussed in accordance with the analysis in the previous chapter. Second, the reasons for the acquisition of the *wh*-words “what time” and “why” will be discussed. Thirdly, the implications will be reflected for the hypotheses of the initial state.

## CHAPTER 5

### DISCUSSION

To conclude this study, the acquisition differences between the students of different levels and states will first be discussed in accordance with the analysis in the previous chapter. Second, the reasons for the problems with the *wh*-words “what time” and “why” will be discussed. Thirdly, the implications will be reflected for the hypotheses of the initial state.

#### 5.1 Implications to Hypotheses of Initial State in Second Language Acquisition

##### 5.1.1 The Minimal Trees Hypothesis

The Minimal Tree hypothesis (Vainikka & Young-Scholten, 1994, 1996a, b) proposes that the full complement of functional categories is not seen in the initial state even though the functional categories are available in UG. It indicates that as the input increases, it will trigger the Det, Infl and Comp and associated projections (IP, CP and DP). According to the hypothesis, it would predict the presence of VP but the absence of CP in Chinese. The results have shown that L2 learners definitely have the presence of CP in Chinese to form the *wh*-questions. Moreover, they rejected grammatically correct *wh-in-situ* when the *wh*-word was within VP, such as “what (object)” and “who (object)”. The acquisition of the *wh*-word “how old” by the initial state students confirms the presence of CP. Therefore, the data from the current study is not in line with the Minimal Tree hypothesis.

### 5.1.2 The Valueless Features Hypothesis

The Valueless Features (VF) hypothesis (Eubank, 1993/94, 1994a, 1996) claims that the features of L1 functional categories are valueless. These features are not able to be transferred in the earliest grammar, even though the L1 lexical and functional categories are present in the earliest stage. According to this theory, it would predict that the L1 English CP is present but the [+wh] feature does not transfer, either in its strong or weak forms. The results of the initial state students suggest that the Valueless Features hypothesis is not supported because the correctness of percentage of the ungrammatical items was just 73% indicating some fronted *wh*-words were accepted and hence the presence of [+wh] feature.

### 5.1.3 The Developmental Moderated Transfer Hypothesis and Processability Theory

The Developmentally Moderated Transfer Hypothesis (DMTH) and the Processability Theory (Pienemann, 1998), proposed that transfer is constrained by processability, particularly by the capacity of the L2 learner's language processor in the course of acquisition (Pienemann 1998; Pienemann et al. 2005a). In this hypothesis, there are three assumptions proposed in terms of the feature differences of L1 and L2. The first prediction is that if the L1 and L2 contain the same structure, it will not be transferred at the initial state. The English SVO ranks the second stage while *Wh*-SVO structure ranks the third. The *wh*-questions in Chinese remain *in-situ* as the *wh*-words are never raised to the Complementizer Phrase (CP). It is assumed that the Chinese *wh*-questions can be considered part of in the second category, according to the Processability Theory. Based on this theory and DMTH (Pienemann 1998), it could be predicted that once L2 Chinese learners acquire the SVO structure in Chinese in

their initial state, they will be able to acquire the simple *wh*-questions in Chinese as well.

From the acquisition of the *wh*-questions among the initial state students, the L1 transfer was reflected saliently from the judgments on the ungrammatical items. Even though the simple questions in Chinese shares the same structure of SVO, unlike Zhang (2013), the data of the current study does not provide convincing evidence that the initial learners had acquired the *wh*-questions in Chinese.

#### 5.1.4 The Full Transfer and Full Access Hypothesis

As discussed in Chapter two, Full Transfer Full Access (Schwartz & Sprouse, 1994, 1996) claimed that at the initial state, L2 learners will take the parameter value of their ‘entire L1 grammar’ into L2 grammar and later shift to the L2 value restructuring the grammar once the L1-based grammar fails. Consequently, the hypothesis predicts that English-speaking learners of Chinese at the initial state would interpret *wh*-questions with a strong [+wh] feature. Therefore, the learners would not consider the *wh-in-situ* correct when judging the grammatical items, or they would consider the ungrammatical items to be correct. As shown in Table 4.10, the initial students first acquire the *wh*-words “how old”. Individually speaking, no initial student received perfect performance in judging all the items. As far as the non-initial state students are concerned, they acquired the correct order of four items. Besides the *wh*-word “how old”, they acquired the correct placement of “how”, “how many”, and “what (object)”. For the *wh*-words “whose”, “who”, and “what (modifier)”, the non-initial students’ performance, compared to native speakers performance was insignificant in regards to the ungrammatical items, which indicates that they rejected the [+wh] features in the L1 grammar

when learning L2 Chinese. Furthermore, there are four students who performed perfectly on all items.

To sum up, the acquisition of the initial state learners confirmed the “full transfer” while the non-initial state learners proved that they have reset the parameters of L1grammar to those of the L2 grammar demonstrating that they have “full access” to Universal Grammar. Therefore, like Yuan (2007) and Gao (2009), this study strongly supports the Full Transfer Full Access hypothesis.

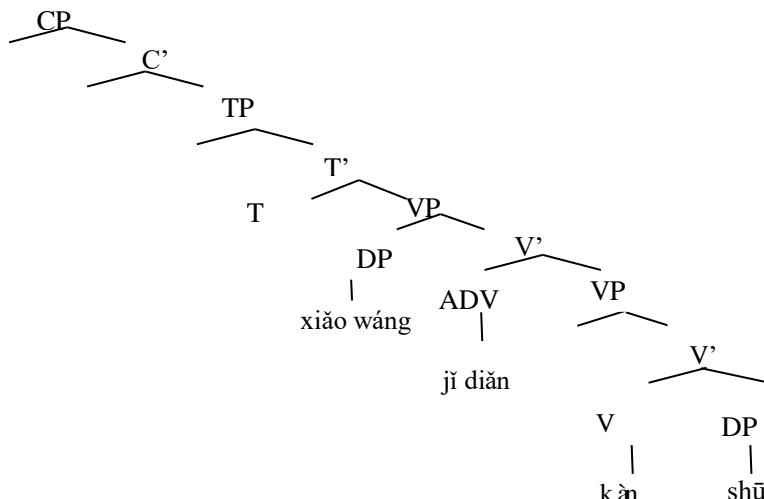
## 5.2 The Insufficient Acquisition of the *Wh*-words

The *wh*-words tested in the current study were selected from the textbook *Integrated Chinese Level I (3<sup>rd</sup> Edition)* (Liu et al, 2010). There were more than ten *wh*-words introduced in the first five lessons. From the results of the GJT, the difficulty of these ten *wh*-words can be placed from the easiest to the hardest according to their mean accuracies: “how old”, “how many”, “how”, “who (object)”, “what (object)”, “whose”, “what (modifier)”, “where”, “why”, and “what time”. Recalled the conclusion from Gao (2009) that the hierarchy of the acquisition of Chinese *wh*-words were object *wh*-words were easier than attributed *wh*-words than adverbial *wh*-words, it can be seen from the current study that this hierarchy is not applicable as the top three easiest *wh*-words to L2 learners are adverbials, object *wh*-words are in the middle, and the hardest *wh*-words fall in the category of adverbial again. Without sufficient evidence, this hierarchy might not be universal in the second language acquisition of Chinese *wh*-questions.

The results show that the learners' three biggest issues are the *wh*-words “what time” with an accuracy of 32%, “why” with an accuracy of 65%, and “where” with an accuracy of 84%. The *wh*-words are the adverbials.

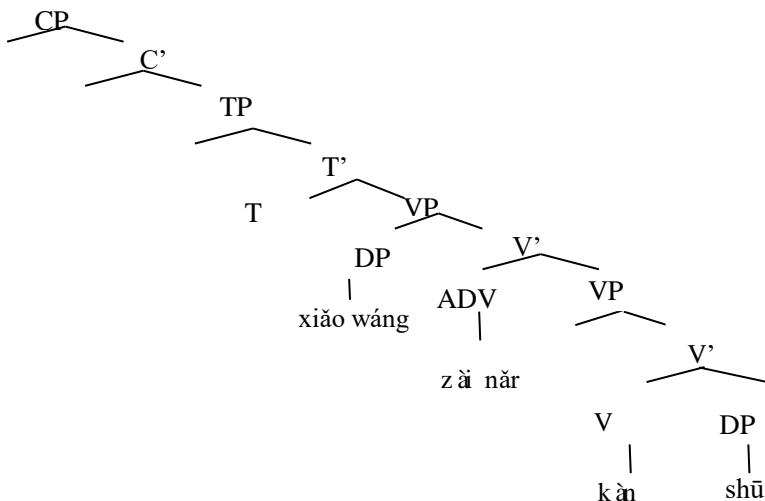
Since Chinese is *wh-in-situ*, with the weak [-wh] feature, the adverb “what time” and “where” do not move to CP. The structure of ‘What time does Xiaowang read books?’ in syntax is as follows (1):

- (1) xiǎo wáng jǐ                diǎn        kàn        shū.  
 小王 (几                点)        看        书  
 Name (how many/much        hour)        read book  
 (What time-adverb)  
 ‘What time does Xiaowang read books?’



The *wh*-word “where” shares the similarity with “what time”. The structure of ‘Where does Xiaowang read books?’ in syntax is as follows (2):

- (2) xiǎo wáng zài nǎr        kàn        shū.  
 小王 (在哪儿)        看        书  
 name        where        read                              book  
 ‘Where does Xiaowang read books?’



The reason may be attributed to the learner's L1 grammar with the [+wh] feature when judging the grammatical and ungrammatical "what time". Another reason might be due to the word order of declarative sentences in English. The Adverb Phrase (AdvP) of time or location in English typically appears either the beginning or the end of the sentence (Carnie, 2013). If learners were aware that the word orders of *wh*-questions in Chinese were like that in English declarative sentence, they might consider the grammatical question of "what time" "where" were incorrect. In other words, the L2 learners, except the twelve of them, were not able to correctly judge the word order of the *wh*-question "what time" and "where".

The not-fronted and fronted "why" appear in Lesson 3 and 4, functioning as an adverb. The answer to "why" is expected to be a sentence starting with "because". The syntactic distribution of the *wh*-word "why" is located either the beginning of the sentence or the AdvP after the subject DP. The reason why L2 learners had difficulty in judging "why" might be due to the fact that since two different positions appear so close to each other, the learners did not have sufficient input.

### 5.3 The Length of Exposure in the Acquisition of *Wh*-questions

The findings suggested that the longer L2 exposure, the more accurate results that the L2 learners produce (Blom & Paradis, 2013). Length of Exposure and Age on Set are two critical factors in learners' language acquisition. In the current study, the acquisitions of *wh*-questions by the non-initial learners and the learners of CHIN 211 turn out better than the initial learners and learners of CHIN201 respectively. When the different states were grouped, it was on the basis of the length of the learners' Chinese study. Students with less than 3 months (=45 hours) of Chinese were categorized as initial state. The average length of the non-initial learners' is 2.8 years. The results of the states show more significant differences than those of the levels. CHIN 201 studied 2.5 hours per week while CHIN 211 studied 4.6 hours per week. In addition, learners of CHIN 211 had attended the intensive training in the previous summer for two months (at least 3 hours a day, five days a week). The length of exposure of CHIN 211 is much longer than CHIN 201 and the results support that CHIN 211 did perform better than CHIN 201.

#### 5.4 Summary

In conclusion, L2 learners of English have acquired some of the *wh*-questions in Chinese on the whole. The non-initial learners have acquired much more than the initials as they have longer exposure to L2 Chinese. The top three difficult *wh*-words for the L2 learners are "what time", "why", and "where". Students are encouraged to take more time to reset the L2 grammars in order to acquire the correct word order of the *wh*-words. The results of the study have confirmed the Full Transfer Full Access hypothesis (Schwartz & Sprouse, 1994,

1996).

## CHAPTER 6

## CONCLUSION

### 6.1 Conclusion of the Research

The acquisition of Chinese *wh*-questions has always been a largely debated research topic. Recall the research questions mentioned in the first chapter, the answers to the questions can be answered.

(1). How well do the L2 learners acquire the *wh*-questions, as measured by a Grammaticality Judgment Task? Are L2 learners able to acquire the native-like word order of *wh*-questions in Chinese?

The L2 Chinese learners of English speakers are able to acquire native-like word order with a limited amount of *wh*-words, such as “how many” and “how old.” The learners who have longer exposure to Chinese have higher accuracies in the Grammaticality Judgment Task.

(2). What *wh*-words tend to pose difficulties for the acceptability of L2 learners?

Most of the learners (nearly 90%) have some difficulties in judging the grammatical or ungrammatical items. The students’ biggest issues are the *wh*-words “what time” with an accuracy of 32%, “why” with an accuracy of 65%, and “who (object)” with an accuracy of 70%.

(3). Are the results of the initial L2 learners in line with any hypotheses of the initial state?

The results of the current study strongly support the Full Transfer Full Access hypothesis (Schwartz & Sprouse, 1994, 1996) but argue against the Minimal Tress hypothesis

(Vainikka & Young-Scholten, 1994, 1996a, 1996b), the Valueless hypothesis (Eubank, 1993/94, 1994a, 1996), and the Developmental Moderated Transfer hypothesis (Pienemann, 1998, 2005a).

## 6.2 Limitation of the Research

There are two limitations in the current study.

(1) There are limitations to the application of Grammaticality Judgment Task.

Admittedly, the Grammaticality Judgment Task is able to indicate the linguistic competence of the learners' in their L2. However, the result of the task might not truly mirror the learners' L2 acquisition if correct judgments are made (Birdsong, 1989). Similarly, an incorrect judgment in the task does not necessarily mean the learners have not accessed the L2 grammar. An oral production might more accurately examine learners' access to L2 grammar. Researchers are beginning to implement more comprehensive methods to obtain more objective results.

(2) Limitations also occurred with regards to sample sizes of students. The first is the small size of the initial students. Before the experiment, the researcher had expected to have all Level 1 students as the initial state. However, only six of the sixteen students are truly initial learners after checking the length of the language study in the survey. The results of the initial group would be varied if a bigger size of initial students had joined the study. The second limitation is that there was variation in the judgments of the ungrammatical items by the native speakers. In some contexts, the interlocutors may topicalize the *wh*-words to emphasize the topic they are curious about, such as the time, the age or the book their

listeners are reading. Such pragmatic effects were not counted for in the questionnaire.

### 6.3 Suggestions for Further Research

The current study provides additional insight into the topic of second language acquisition of Chinese syntax. Further research is needed on the basis of this study. First, an oral production task can be implemented with the GJT and administered to the initial students in their first semester of study. Second, a longitudinal study can be taken to track the initial students' study, with hopes of determining what parameters will have been reset as the learners advance to the next state once their initial state is complete. Third, a study can be focused on how the L2 learners acquire the embedded *wh*-questions after their acquisition of simple content *wh*-questions.

In further research, more preparations should be made before conducting the experiment. Special attention should be paid to selecting the subjects and the size of the sample, which will make the statistics more reliable and convincing. Moreover, the instrument should be more comprehensive.

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## **LIST OF APPENDICES**

## APPENDIX A

## A Grammaticality Judgment Task in Chinese

### Instructions

Please listen to the recording and indicate whether you believe each Chinese question is grammatically correct or incorrect. Don't take too much time thinking about it: we are interested in your spontaneous reaction.

1. zhè shì shéi de zhào piàn  
这 是 谁 的 照 片?       correct       incorrect
2. kě yǐ wǒ yào yī bēi chá ma  
可 以 我 要 一 杯 茶 吗?       correct       incorrect
3. zěn me yàng nà gè diàn yǐng  
怎 么 样 那 个 电 影?       correct       incorrect
4. nǐ jiā yǒu jǐ kǒu rén  
你 家 有 几 口 人?       correct       incorrect
5. tā men shì xué shēng hái shì lǎo shī ma  
他 们 是 学 生 还 是 老 师 吗?       correct       incorrect
6. máng bu máng nǐ míng tiān  
忙 不 忙 你 明 天?       correct       incorrect
7. shéi de bàba zhè shì  
谁 的 爸 爸 这 是?       correct       incorrect
8. wǒ men qù kàn diàn yǐng zài sān diǎn ma  
我 们 去 看 电 影 在 三 点 吗?       correct       incorrect
9. nǐ xǐ huān chī yīng guó cài hái shì zhōng guó cài  
你 喜 欢 吃 英 国 菜 还 是 中 国 菜?       correct       incorrect
10. shén me nǐ xiǎng hē  
什 么 你 想 喝?       correct       incorrect

什么你想 喝?

correct     incorrect

11. shu ísh ìn àg èn áñ h ái zi

谁 是 那个男 孩子?

correct     incorrect

12. xiǎo gāo dǎ qiú zhè gè zhōu mò ma

小 高 打 球 这 个 周 末 吗?

correct     incorrect

13. nǐ hé wáng lù shī jǐ diǎn jiàn

你 和 王 律师 几 点 见?

correct     incorrect

14. duō dà nǐ jīn nián

多 大 你 今 年?

correct     incorrect

15. nǐ cháng cháng tīng yīn yuè zài jiā ma

你 常 常 听 音 乐 在 家 吗?

correct     incorrect

16. nǐ xiǎng chī diǎn ér sh én me

你 想 吃 点 儿 什 么?

correct     incorrect

17. wǒ yào yī bēi kā fēi kě yǐ ma

我 要 一 杯 咖 啡 可 以 吗?

correct     incorrect

18. lǐ yǒu jīn nián duō dà

李 友 今 年 多 大?

correct     incorrect

19. wǒ de xué xiào zěn me yang

我 的 学 校 怎 么 样?

correct     incorrect

20. nǐ wéi shén me qǐng wǒ chī fàn

你 为 什 么 请 我 吃 饭?

correct     incorrect

21. nǐ míng tiān qù bù qù kàn diàn yǐng

你 明 天 去 不 去 看 电 影?

correct     incorrect

22. xiǎo gāo zài nǎ ér gōng zuò

小 高 在 哪 儿 工 作?

correct     incorrect

23. nǐ de tóng xué qù dǎ bù dǎ qiú

你 的 同 学 去 打 不 打 球?

correct     incorrect

24. jǐ gè mèi mei wáng péng yǒu  
几个妹 妹 王 朋 有?  
 correct     incorrect
25. wáng péng chī bù chī fàn  
王 朋 吃 不 吃 饭?  
 correct     incorrect
26. jǐ diǎn wǒ men kàn diàn yǐng  
几 点 我 们 看 电 影?  
 correct     incorrect
27. wǒ men sān diǎn qù kàn diàn yǐng hǎo ma  
我 们 三 点 去 看 电 影 好 吗?  
 correct     incorrect
28. wéi shén me gāo wén zhōng qǐng nǐ chī měi guó cài  
为 什 么 高 文 中 请 你 吃 美 国 菜?  
 correct     incorrect
29. nǐ jiě jie zuò shén me gōng zuò  
你 姐 姐 做 什 么 工 作?  
 correct     incorrect
30. nǐ mā mā zài dà xué gōng zuò ma  
你 妈 妈 在 大 学 工 作 吗?  
 correct     incorrect
31. zhè gè nǚ hái zì shì shuí  
这 个 女 孩 子 是 谁?  
 correct     incorrect
32. zài nǎ ér xiǎo wáng kàn shū  
在 哪 儿 小 王 看 书?  
 correct     incorrect
33. lǐ yǒu cháng cháng zài tú shū guǎn kàn shū ma  
李 友 常 常 在 图 书 馆 看 书 吗?  
 correct     incorrec
34. shén me shū nǐ xǐ huān kàn  
什 么 书 你 喜 欢 看?  
 correct     incorrect
- Personal data:**
1. Age: \_\_\_\_\_ years old      2. Gender: male / female
  3. How long have you been learning Chinese? \_\_\_\_\_ years
  4. Is Chinese your heritage language? Yes / No
  5. Have you ever been to China or Taiwan? Yes / No
  6. How many Chinese classes have you been taking (including high school, summer program) : \_\_\_\_\_

## VITA

### Linfei Yi

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#### **Education**

August 2016	M.A. Student	Linguistics	University of Mississippi
September 2006-	September 2008	Master of Education	Guangxi Normal University
September 1999-June 2003		Bachelor of Arts	Guilin University of Technology

#### **Academic Training and Conference**

November 3, 2017	Mississippi Modern Language Association (MFLA)	Presenter	
	<i>Acquisition of Chinese Compounds by English Learners</i>	University of Mississippi	
March 2017	Graduate Student Council of University of Mississippi	Presenter	
	<i>Zhuang: An Indigenous Language Developing in China</i>	University of Mississippi	
June-August 2016	the Summer Institute: The Performed Culture Approach in Chinese Pedagogy		Washington University in St. Louis
November 2013	Confucius Institute Chinese Teacher Conference		University of Memphis
July-August 2012	Chinese Guest Teacher Summer Institute		UCLA
March 2012	Florida Chinese Teacher Conference		University of South Florida
November 2011	ACTFL		Denver
July-August 2011	Chinese Guest Teacher Summer Institute		UCLA
June-July 2011	Chinese Guest Teacher Orientation		Beijing Normal University

#### **Working Experience**

August 2016 to present Holly Springs High School, Holly Springs, MS. U.S.A Chinese

Instructor

administered by the Chinese Flagship Program of the University of Mississippi

June-August 2014 Chinese Summer Institute, Cuenca and Belmonte, Spain

Chinese Instructor

August 2011-June 2014 Braden River High School, Bradenton, FL U.S.A

Chinese Instructor

administered by the College Board and the Confucius Institute Headquarter

August 2004-June 2016 Lijiang College of Guangxi Normal University, Guilin, China

English Lecturer

July 2003-August 2004 Foxconn Technology Group, Shenzhen, China

Assistant to the Manager

**Awards**

November 2017 Fourth Place in Master Category 3Minute Thesis Presentation

University of Mississippi

May 2017 2017 Summer Research Assistantship University of Mississippi

March 2017 Second Place Winner of 7<sup>th</sup> Annual Research Symposium

University of Mississippi

January 2015 Bilingual Lecturer of Lijiang College

Lijiang College of  
Guangxi Normal University

October 2014 Outstanding Chinese Teacher of 2013-2014

Confucius Institute Headquarter

August 2012 Exceptional Leadership as a Mentor and Residential Advisor

College Board, UCLA Confucius Institute and NCSSFL

June 2012 Outstanding Chinese Teacher of 2011-2012

Confucius Institute Headquarter