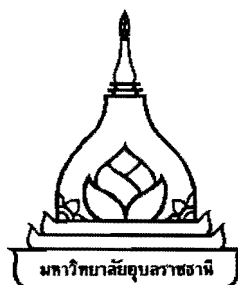




**PRODUCTION AND GRAMMATICALITY JUDGMENT
OF WH- SENTENCES**

RATIROT PHIPHITPHAKDI

**AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILMENT OF
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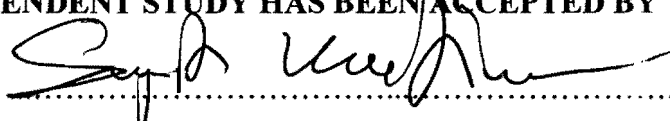


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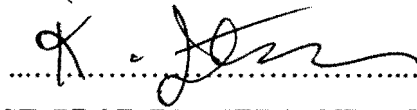
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OF WH- SENTENCES


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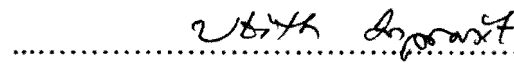

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(Miss Ratirot Phiphitphakdi)

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ชื่อเรื่อง : การตัดสินใจถูกผิดทางไวยากรณ์และการสร้างประโยคคำถามแบบ Wh- Question

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ศัพท์สำคัญ : ประโยคคำถามแบบ Wh- Question การละเมิดข้อจำกัดของประโยคคำถามแบบ Wh- Question หลักไวยากรณ์สากล FUNDAMENTAL DIFFERENCE HYPOTHESIS

การศึกษานี้มีวัตถุประสงค์เพื่อวิเคราะห์การตัดสินใจถูกผิดทางไวยากรณ์และการสร้างประโยคแบบ wh- ทั้งแบบที่มีการละเมิดข้อจำกัดของประโยคและไม่มีการละเมิดข้อจำกัดของประโยค โดยนักศึกษาวิชาเอกภาษาอังกฤษ มหาวิทยาลัยราชภัฏอุบลราชธานี และนักศึกษามหาวิทยาลัยอุบลราชธานี โดยมีผู้วิจัยเป็นผู้วิเคราะห์แบบทดสอบการสร้างประโยคและการตัดสินใจถูกผิดทางไวยากรณ์

ผลการศึกษาพบว่านักศึกษาส่วนใหญ่ไม่สามารถตัดสินใจถูกผิดทางไวยากรณ์และสร้างประโยคคำถามแบบ wh- ได้ถูกต้อง โดยข้อจำกัดของโครงสร้างประโยคแบบนามวลีซับซ้อน (complex noun phrase) เป็นโครงสร้างที่นักศึกษาไม่สามารถตัดสินใจและสร้างประโยคได้ถูกต้องมากที่สุด ผลการศึกษานับสนับสนุน Fundamental Difference Hypothesis ที่ว่า หลักไวยากรณ์สากลไม่สามารถเกิดขึ้นได้ในการเรียนรู้ภาษาที่สองของผู้เรียนที่เป็นผู้ใหญ่

ABSTRACT

TITLE : PRODUCTION AND GRAMMATICALITY JUDGMENT OF
WH- SENTENCES

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DEGREE : MASTER OF ARTS

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UNIVERSAL GRAMMAR / FUNDAMENTAL
DIFFERENCE HYPOTHESIS

This study aimed to investigate the production and grammaticality judgment of wh- sentences with and without an island constraint violation by English major students at Ubonratchathani Rajabhat University and Ubon Ratchthani University. Forty-two student's production and grammaticality judgment tests were analyzed by the researcher.

The result of the study showed that most of the students could not produce and judge the wh- questions correctly. The Complex Noun Phrase (Complex NP) constraints were misjudged and misproduced at the highest percentage. The results support the Fundamental Difference Hypothesis which argues that Universal Grammar is not available in L2 acquisition by adult learners.

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CHAPTER 1

INTRODUCTION

This research study is conducted to explore the nature of Thai students' production and grammaticality judgment of wh- sentences.

1.1 Rationale and Background Study

There has been a lot of research done on the production and grammaticality judgment of wh-sentences, particularly regarding the wh-island violations (Huang, 1981; Creswell, 2002; Cook, 2003; Roland et al, 2005). Most of these studies such as the research by Goodall (2004), Roland et al. (2005), and Lakshmanan et al. (2009) explored constraints both in the grammar of native English speakers and of the second language (L2, henceforth) learners. The objective of the research in wh-constraints revolves around the issue of Universal Grammar as proposed by Chomsky (1975, 1977, 1981 and 1986). Chomsky's works have inspired linguists in doing further research of Universal Grammar with the focus on the study of wh- sentences.

The past three decades have also seen enormous research into wh-constraints in second language acquisition (Krashen, 1982; White, 1990; and Juffs, 2005, among several others). Given the fact that the status of UG theory in first language acquisition has been well established in most versions of generative linguistics (Chomsky, 1965, 1981; and Cook 1985), L2 researchers disagree sharply on whether L2 learners still have access to UG in the course of their second language learning. Three competing hypotheses on the availability of UG in L2 acquisition have been proposed: Differential hypothesis; Full Accessibility; and Partial Accessibility (Cook, 1985; Schwartz & Sprouse, 1996; Hawkins, 2001; Cook & Newson, 2007). One of the linguistic phenomena that has frequently been the testing ground for the three hypotheses is the acquisition of wh-sentences. Despite years of research to prove or disprove the hypotheses, researchers are still at odds with each other. The examination of how L2 Thai learners of English produce and judge the grammaticality of wh-sentences would provide some insight into the nature of second

language acquisition in general and in particular the availability nature of UG in second language acquisition.

1.2 Purposes of the Study

To investigate the wh-island violations in production and grammaticality judgment of English wh- sentences by Thai students.

1.3 Research Question

What is the nature of Thai L2 English learners' production and grammaticality judgment of wh-sentences?

1.4 Scope of the Study

The study would focus on the production and grammaticality judgment of wh-sentences in direct questions only. The wh-sentences in indirect questions are beyond the scope of this study.

1.5 Significance of the Study

The results of this study are expected to shed some light on the issue of UG availability in L2 acquisition of English Wh-sentences and to provide some pedagogical implication to L2 instruction on English wh- sentences.

CHAPTER 2

LITERATURE REVIEW

This chapter discusses the concept of UG in L1 and L2 acquisition, Wh-island constraints, hypotheses on the issues of UG availability in L2 acquisition, in particular, of wh- sentences, and related research works.

2.1 Universal Grammar in first and second language acquisition

According to Chomsky (1975), Universal grammar refers to human linguistic faculty which is assumed to be innate and which helps guide the child to acquire language. It is the part of the mind which is specifically designed for language acquisition and constitute UG principles and parameters. The principles are the universal rules or grammars and parameters are the range of possible grammars within which languages can vary. Similarly, White (2003) proposes that Universal Grammar is part of innate language faculty which constrains language acquisition in the sense that what types of grammar are possible. The role of Universal Grammar is, therefore, very important in the course of first language acquisition.

First language acquisition is used to explain how children can achieve their knowledge of grammar even though the input is not fully available or imperfect. This state of affairs has come to be called “the poverty of the stimulus” and is used to support the existence of Universal Grammar without which it would be impossible for children to acquire language. One piece of evidence often used to support the poverty-of-stimulus argument, that in turn, support the UG claim is the fact that children acquire grammatical constraints despite little or no evidence.

For example, children rarely or never produce some certain ungrammatical sentences which, from the analogy point of view which proposes that children acquire first language by imitation. According to the basis of the language input alone, children do not know the complex grammars and they never learn complex structure. However, they know how to produce complex sentences correctly and avoid certain grammatical errors.

Bley-Vroman (1990) and Foster (1990) argue that an innate Universal Grammar helps link the gap between available experience and attained competence. Some researchers in second language acquisition believe that there is no difference between L1 and L2 learners in accessing Universal Grammar. However, Birdsong (1999 cited in Stewart, 2003) proposes that adults cannot acquire a language like children because of the age-related decline in language learning ability. That is to say, there is a critical period for which UG would be available for language learners and after which language acquisition would never reach the state of native grammar. The question of accessibility of Universal Grammar in second language acquisition has generated a large amount of research to be discussed later in this chapter. Second language acquisition is the process which the learners learn another language apart from their native language and L2 learning may or may not take place in classroom setting.

2.2 The Three Hypotheses Concerning Second Language Acquisition

There are three competing hypotheses concerning the availability of Universal Grammar in second language acquisition.

2.2.1 Fundamental Difference Hypothesis This hypothesis assumes that there are significant differences between children learning their first language and adults learning their second language. That is, children can easily reach the state of complete knowledge of grammar while L2 adult learners never reach that stage. The explanation proposed by this hypothesis is that adults, unlike children, do not have access to UG (Bley-Vroman, 1989 cited in Belikova and White, 2009). The difference between children and adults in language acquisition is children acquire a language by the guidance of the principles and parameters of UG. To explain why L2 adult learners can still learn a new language, though not a complete grammar, this hypothesis argues that they use their experience in L1 and general problem-solving skills in coping with a new language. They can apply the parameter settings of the L1 onto their L2 interlanguage. However, they are incapable of setting parameters to other grammar rules which are different from those embodied in their L1. Moreover, individuals vary in their ability to use these skills, this hypothesis explains why the

outcome of adult language acquisition is less nativelike than that of child language acquisition (Stewart, 2003).

2.2.2 Partial Accessibility Hypothesis This hypothesis assumes that L2 learners have partial access to principles and parameters of UG (White, 2003). However, the access can be via L1 input. The grammar and parameter would be reset for L2 input. Universal Grammar is partially accessible to L2 learners. The rest must be learned. According to Cook (2007), the elements of Universal Grammar are not available in their entirety. He states, “the initial state has a defective clone of Universal Grammar present. The various alternatives can collectively be called the Partial Access Hypothesis” (2007: 236).

2.2.3 Full Accessibility Hypothesis This hypothesis believes that UG is fully available in the course of second language acquisition (Cook, 1996). According to this hypothesis, L1 grammar including L1 parameter settings constitute the initial state of L2 acquisition (full transfer) but L2 learners have full access to UG at all time during the acquisition process and thus that parameter resetting is usually possible. Schwartz and Sprouse (1996) state that second language learners have fully access to L2 in learning all L2 lexical and functional categories relevant to the construction of L2 grammar. The only limitation of the learners is the experience in L2. That is, the learners do not have enough time to experience samples of L2 data to establish the relevant categories. Thus, they applied the L1 grammar properties to construct sentences resulting in nonnative L2 grammar.

The three hypotheses presented above relate to many factors such as an individual’s ability to acquire a second language, the set of rules for grammar and syntax of each language, and one’s cognitive development. They are still widely discussed among the linguists and researchers.

2.3 Wh- Questions

There are mainly two types of structure of wh- question in language; wh-movement and wh-in-situ. Wh- movement means wh- phrase moves from its original position to another position. English is one example of a language which has a wh-movement structure called overt wh- movement. Some languages such as Chinese, Japanese, and Thai do not have this movement. The question phrase occurs in its

original position in a sentence. Languages with no overt wh-movement are referred to as wh-in-situ languages.

Example:

Wh- movement in English

(1) He ate bananas.

(2) What did he eat ____?

Wh- in-situ in Thai

(3) เขากินกล้วย

khao kin kluay

he eat banana

He ate bananas.

(4) เขากินอะไร

Khao kin arai

he eat what

He ate what

As mentioned above, ‘what’ moves from its original position at the end of the sentence to the beginning of the sentence to form a question in (2) while in (4) ‘what’ stays at the original position in the sentence.

2.4 Wh- movement in English

Wh – movement is a type of movement which is a syntactic phenomenon in many languages. It is the phenomenon in which the wh- word or phrase moves from its original position in both a direct and indirect question. For example, in a declarative English sentence, a normal word order is subject-verb-object, as shown in (1) below:

(5) He ate breakfast.

The direct object, “breakfast”, follows the verb, “ate”. However, when a direct object is replaced with a wh- word in a question, the wh- word generally appears at the beginning of the sentence:

(6) What did he eat ____?



It has been analyzed that the wh-word in questions such as (2) and (6) above moves from inside the clause.

Wh- movement can occur across several clauses as long as it does not violate the constraints. For example:

(7) Whom does Mary like ____?

(8) Whom does Bob know that Mary like ____?

(9) Whom does Carl believe that Bob knows that Mary like ____?

There are three circumstances when wh- movement does not occur in English: echo questions, quiz questions, and when there is already one wh- word at the front. These are respectively illustrated below:

(10) You bought what?

(11) George Orwell was born in what country?

(12) Who bought what?

As the examples in (6) – (9) show, wh- phrases seem to move freely from its original position. However, certain structures prohibit the movement. These structures from which wh- phrases cannot move out freely are called islands.

2.5 Island constraints

An island constraint is a construction from which constituents cannot grammatically move out. According to Ross, (1978), there are 5 major wh- island constraints.

2.5.1 The Coordinate Structure Constraint

The coordinate structure is made up of two or more noun phrases joined by conjunctions such as and, or, but. The movement of the conjoined element out of the conjunction is not possible as exemplified by (14) below:

(13) John eats [apples and oranges].

(14) *What does John eat apples and ____?

One of the conjoined elements, that is *what* is extracted here. The blank in (14) indicates the original position where the wh- phrase moves from.

2.5.2 The Complex NP Constraint

Complex noun phrases contain two components: head noun and an adjective clause or noun complement clause. According to Ross (1967), nothing can be extracted from a complex NP.

Complex NP with noun complement clause is shown in (15) and (16) illustrated the illicit movement out of the complex NP.

(15) John believes [the rumor that Mary hit Jane].

(16) *Who did John believe [the rumor that Mary hit ____]?

This interrogative sentence is ungrammatical because the noun phrase “who” cannot move out from the NP “rumor” which is a complex NP with the complement clause.

Complex NP with an adjective clause is illustrated in (17) and (18) shows the ungrammatical movement.

(17) John reads [the book that Mary borrowed from Tom].

(18) * From whom did John read the book that Mary borrowed ____?

This sentence is grammatically incorrect because the noun phrase ‘the book that Mary borrowed from Tom’ forms an island out of which the movement is impossible.

2.5.3 The Sentential Subject Constraint

Nothing can be extracted from a clause that functions as a subject.

Example:

(19) [That John help Mary] pleased us.

(20) *Who did [that John help ____] pleased us?

‘That John help Mary’ is the sentential subject and it is ungrammatical to move anything out of it to form a question.

2.5.4 Adverbial Island Constraint

Moving out of an adverbial clause is not permitted as shown in (22) below.

(21) John is unhappy [because Mary went out with Tom].

(22) *Who is John unhappy because Mary went out with ____?

In (22), the wh- phrase 'who' moves from the adverbial clause resulting in the ungrammaticality of the sentence.

2.5.5 Wh-island Constraint

Movement of a wh- phrase over another wh- phrase is prohibited.

Examples:

(23) John wondered [who help Mary fix the car].

(24) *What did John wonder who helped Mary fix ____?

(25) John wondered [when Mary fixed the car very well].

(26) *How did John wondered when Mary fixed the car ____?

The question (24) is ungrammatical because 'what' moves over the wh- phrase 'who'. And in (26), the wh- phrase 'how' moves over the wh- phrase 'when'. All the movements are illicit.

The existence of such constraints constitute evidence that wh- phrases in English indeed get moved from its original position, without the movement analysis, it would be impossible to explain the contrast in grammaticality between these ungrammatical sentences in which the wh- phrases illicitly move out of the island constraints and their counterparts where wh- phrases remain in-situ (in echo questions). The following pair illustrates this.

(27) John is unhappy because Mary went out with whom?

(28) *Whom is John unhappy because Mary went out with ____?

2.6 Related Research Study

Several research studies have been conducted to investigate wh- movement in both wh- movement and wh- in-situ languages.

Johnson and Newport (1989) tested L2 English speakers to try to explain the role of UG accessibility in adult L2 learners. Korean and Chinese L1 speakers were tested on English articles, wh- questions, particle movement, past tense, plural, and third-person singular. Moreover, they were asked to judge the grammaticality of many sentences. The subjects were students at the college level and all had lived in the United States for at least three years although these L2 learners differed in age of arrival in the United States and length of residence. The result showed that the group

with the late arrival failed to recognize ungrammatical wh- questions. This led to the study's conclusion that Universal Grammar was not accessible during second language acquisition.

Lakshmanan et al (2009) conducted a study on L2 English learners' subjacency violations or wh- constraint violation that focus on online processing. The researchers claimed that L2 English learners' speaking patterns were similar to L1 in grammaticality judgment of subjacency violations in an offline task. The study aimed to investigate the performance of Korean and Chinese L2 English speakers, whose L1s lacked overt wh- movement. The instruments used in this study were an offline grammaticality judgment task and a word-by-word, self-paced online moving window reading task controlled by software. They were given offline task to judge grammaticality of wh- movement in three different structures: grammatical wh- movement out of an embedded clause, ungrammatical wh- movement out of a noun complement clause and ungrammatical wh- movement out of a relative clause. Also, online task including similar three structures was assigned to the subjects. The result indicates that L2 English speakers accepted grammatical wh- extraction sentences and rejected some subjacency violations. However, they failed to reject the weak wh- violation items. In online task, the result between L1 and L2 English speakers were different. The researcher concluded that according to the findings, adult L2 acquisition is UG-constrained and native speakers and L2 learners may use different learning strategies to reach the same end.

It can be concluded that the results of the two previous studies claim that Universal Grammar is not accessible for L2 learners. They could perform well in some tasks, however, their performances were still different from the native speakers.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter explains the components of research method of the present study including subjects, data collection and data analysis.

3.1 Subjects

The subjects of this study were 42 English students at Ubon Ratchathani Rajabhat University and Ubon Ratchathani University. Twenty-five students were from Ubon Ratchathani Rajabhat University and seventeen students were from Ubon Ratchathani University. The study focuses on the overall grammaticality production and judgment of the subjects.

3.2 Instruments

The instruments for collecting data in this study are 21 items of grammaticality judgment test and 21 items of production test. Each test was designed to test 5 island constraints on Wh-movement in terms of both production and judgment. The 21 items of the judgment test consisted of both grammatical and ungrammatical wh- question sentences. Those ungrammatical sentences were instances of island constraint violations. The students were asked to judge whether the sentences were grammatical. The 21 items of production task are declarative sentences where the target of wh- movement is underlined. The subjects were asked to form wh- question sentences by moving the underlined part targeted as “wh-phrase”.

In Test 1, the test for grammaticality judgment, the subjects were asked to judge the grammaticality of question b. of each item whether it was correct or incorrect. Question b. generated from the declarative sentence in “a”. The bolded print in question b. was the wh- phrase that was moved from the position indicted by the blank in “b” and corresponds to the bolded phrase in “a”.

In Test 2, the test for production of wh- sentences, the subjects were asked to create question according to the given declarative sentences. The purpose of this test was to analyze the wh- questions that the subjects created from the bolded phrases.

Test 1 was the test for grammaticality judgment. The test consisted of 21 items. Test 2 was the production test and also consisted of 21 items. The details of the two tests were shown below:

Test 1 Grammaticality Judgment

Directions: Study the sentences in a. Check (✓) if the sentences in b. is correct and (✗) if the sentences is incorrect.

- (1) a. John loved *Mary*.
b. *Who* did John love ____?
- (2) a. John ate apples and *oranges*.
b. *What* did John eat apples and ____?
- (3) a. John wanted to see *a movie*.
b. *What* did John want to see?
- (4) a. John wanted to see that movie that lasted for 4 hours *last night*.
b. *When* did John want to see that movie lasted for 4 hours ____?
- (5) a. John watched a TV sitcom that lasted *for 4 hours* last night.
b. *How many hours* did John watch a TV sitcom that lasted ____ last night?
- (6) a. John wanted to persuade Mary to see a movie *last night*.
b. *When* did John want to persuade Mary to see a movie ____?
- (7) a. John wanted to know whether Mary wanted to see a movie *last night*.
b. *When* did John want to know whether Mary wanted to see a movie ____?
- (8) a. John wanted to know whether *Mary* wanted to see a movie last night.
b. *Who* did John want to know whether ____ wanted to see a movie last night?
- (9) a. John talked to the man who could speak *three languages*.
b. *How many languages* did John talk to the man who could speak ____?
- (10) a. John made a claim that Mary killed *a taxi driver*.

- b. **Who** did John make a claim that Mary killed ____?
- (11) a. John said that Mary could speak **three languages**.
b. **How many languages** that John say that Mary could speak ____?
- (12) a. John wondered whether Mary danced with **Tom**.
b. **Who** did John wonder whether Mary danced with ____?
- (13) a. That John killed **a dog** was not true.
b. **What** did that John killed ____ was not true?
- (14) a. John hated Mary because she hit **his dog**.
b. **What** did John hate Mary because she hit ____?
- (15) a. John said Mary liked **Avatar**.
b. **Which** movie did John say Mary liked ____?
- (16) a. John said Mary danced with **Tom**.
b. **Who** did John say Mary danced with ____?
- (17) a. John wondered who wanted to see **Avatar**.
b. **Which** movie did John wonder who wanted to see ____?
- (18) a. John bought a bike and **a TV**.
b. **What** did John buy a bike and ____?
- (19) a. John will read **a book** and watch TV.
b. **What** will John read ____ and watch TV?
- (20) a. John baked **a pie** and Mary ate **it**.
b. **What** did John bake ____ and Mary eat ____?
- (21) a. John thought that Mary said Tom loved **Jane**.
b. **Who** did John think that Mary said that Tom loved ____?

Test 2 Production Test

Directions: Write questions starting with wh- (e.g. what, when, why, who, etc.).

The answer of each question is in the bold print.

- (1) John loved **Mary**.
- (2) John ate apples and **oranges**.
- (3) John wanted to see **a movie**.
- (4) John wanted to see that movie that lasted for 4 hours **last night**.
- (5) John watched a TV sitcom that lasted **for 4 hours** last night.
- (6) John wanted to persuade Mary to see a movie **last night**.

- (7) John wanted to know whether Mary wanted to see a movie *last night*.
- (8) John wanted to know whether *Mary* wanted to see a movie last night.
- (9) John talked to the man who could speak *three languages*.
- (10) John made a claim that Mary killed *a taxi driver*.
- (11) John said that Mary could speak *three languages*.
- (12) John wondered whether Mary danced with *Tom*.
- (13) That John killed *a dog* was not true.
- (14) John hated Mary because she hit *his dog*.
- (15) John said Mary liked *Avatar*.
- (16) John said Mary danced with *Tom*.
- (17) John wondered who wanted to see *Avatar*.
- (18) John bought a bike and *a TV*.
- (19) John will read *a book* and watch TV.
- (20) John baked *a pie* and Mary ate *it*.
- (21) John thought that Mary said Tom loved *Jane*.

3.3 Data Collection

The study was designed for both qualitative and quantitative research. The data collected for this study were the tests taken by forty-two English major students. The data collection was divided into two periods. In the first period, the 21 items of grammatical judgment test were given to 42 subjects in class. One week after the first period, the production test was given to the same subject group.

3.4 Data Analysis

One point was given to the correct answer, totaling 21 for each of the test. From the results, the data were analyzed to identify the ability of the subjects in grammatically judgment and production of wh- question constructions.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter presents the results of the analysis based on an investigation of wh-island violations in production and grammaticality judgment of English wh-sentences by Thai students. The results of the data analysis are divided into three parts:

4.1 The results of the grammaticality judgment test

4.2 The results of the production test

4.3 A comparison of the performance of Ubon Ratchathani Rajabhat University students and Ubon Ratchathani University students on the two tasks

4.1 The results of the grammaticality judgment test

Two groups of subjects were assembled for this study: 25 English major students at Ubon Ratchathani Rajabhat University, and 17 English major students at Ubon Ratchathani University. Subjects were asked to take the grammaticality judgment test of 21 questions to investigate their ability to identify the island constraints within a variety of wh- sentences. Eight of these sentences were grammatically correct (items 1, 3, 6, 11, 15, 16, 20, and 21) and thirteen were sentences that violated island constraints. Items 2, 18, and 19 had a coordinate structure constraint; items 4 and 14 had an adverbial island constraint; items 5, 9, and 10 had a complex NP constraint; items 7, 8, 12, and 17 had a wh- island constraint; and item 13 had a sentential subject constraint. (See Section 2.5 for a review of these different island constraints). The results are shown in Table 1 and Table 2 below:

Table 1 Ubonratchathani Rajabhat University (UBRU) students’ grammaticality judgment of wh- sentences

Type of Sentences	Percentage of students’ misjudgment
Ungrammatical sentences with the complex NP constraint	66.7%
Ungrammatical sentences with the wh-island constraint	62%
Ungrammatical sentences with the adverbial island constraint	46%
Ungrammatical sentences with the sentential subject constraint	36%
Ungrammatical sentences with the coordinate structure constraint	32%
Grammatical sentences	20%

Table 1 shows the results of the UBRU students’ grammaticality judgment of wh- sentences; Twenty percent (5 out of 25 students) could not recognize the grammatical sentences and they wrongly judged these sentences as being ungrammatical. Thirty-two percent (8 out of 25 students) could not identify the ungrammatical sentences with a coordinate structure while 36% (9 out of 25 students) could not identify ungrammatical sentences with the sentential subject constraint. Although these percentages are higher than expected, they are considerably better than the 66.7% (17 out of 25 students) who could not identify the complex NP constraint and ungrammatical sentences with the sentential subject constraint 36%. In addition, 62% (9 out of 25 students) could not identify the wh- island constraint and almost half of the students could not identify ungrammatical sentences violating the adverbial island constraint. The students performed very well in judging ungrammatical sentences violating the coordinate structure constraint while they performed quite poorly in judging ungrammatical sentences with the complex NP constraint.

In the second group, seventeen English major students studying at Ubon Ratchathani University were asked to take the same grammaticality judgment test. Their results are shown in Table 2 below.

Table 2 Ubonratchathani University (UBU) students’ grammaticality judgment of wh- sentences and island constraints.

Type of Sentences	Percentage of students’ misjudgment
Ungrammatical sentences with the wh-island constraint	63.2%
Ungrammatical sentences with the complex NP constraint	56.9%
Ungrammatical sentences with the sentential subject constraint	35.3%
Ungrammatical sentences with the adverbial island constraint	35.3%
Ungrammatical sentences with the coordinate structure constraint	21.6%
Grammatical sentences	11.8%

The data in the table above indicates that 11.8% (2 out of 17 students) could not identify the grammatical wh- sentences, an 8.2% improvement over the other group of subjects. The lowest percentages in misjudging ungrammatical sentences were those with the coordinate structure constraint. This was 21.6% (3 out of 17 students). Ungrammatical sentences with the complex NP constraint and ungrammatical sentences with the wh-island constraint had a 56.9% misjudgment (9 out of 17 students) and 63.2% misjudgment (10 out of 17 students), respectively. The students performed the same in misjudging two types of sentences; ungrammatical sentences with the sentential subject constraint and ungrammatical sentences with the adverbial island constraint, both at 35.3% (6 out of 17 students).

4.2 The results of the production test

Twenty-five English major students studying at Ubon Ratchathani Rajabhat University were asked to take a production test of the 21 items on the test. Eight wh- questions could be produced based on items no. 1, 3, 6, 11, 15, 16, 20, and 21, thirteen items could not be turned into wh- question forms because of island constraints. Items 2, 18, and 19 had a coordinate structure constraint. Items 4 and 14 had an adverbial

island constraint. Items 5, 9, and 10 had a complex NP constraint. Items 7, 8, 12, and 17 had a wh- island constraint and item 13 had a sentential subject constraint.

Table 3 Ubonratchathani Rajabhat University students’ production of wh- questions

Type of Sentences	Percentage of students’ misproduction
Ungrammatical sentences with the complex NP constraint	56%
Ungrammatical sentences with the coordinate structure constraint	52%
Ungrammatical sentences with the adverbial island constraint	48%
Ungrammatical sentences with the wh-island constraint	47%
Ungrammatical sentences with the sentential subject constraint	36%
Grammatical sentences	50%

Table 3 shows that 52% (13 out of 25 students) and 56% (14 out of 25 students) generated grammatically incorrect questions from the ungrammatical sentences with the coordinate structure constraint and ungrammatical sentences with the complex NP constraint, respectively. The percentage of ungrammatical sentences with the adverbial island constraint and ungrammatical sentences with the wh-island constraint were nearly the same with the former at 48% (12 out of 25 students) and the latter at 47% (11 out of 25 students). Types of sentences that students violated the least were the ungrammatical sentences with the sentential subject constraint with a 36% failure. For the grammatical sentences, half of the students produced the wh-question forms wrongly.

The results of the second group’s performance on the same production test are shown in Table 4 below. The subjects were seventeen English major students studying at Ubon Ratchathani University.

Table 4 Ubonratchathani University students’ production of wh- questions

Type of Sentences	Percentage of student’ misproduction
Ungrammatical sentences with the complex NP constraint	68.6%
Ungrammatical sentences with the adverbial island constraint	67.6%
Ungrammatical sentences with the coordinate structure constraint	55%
Ungrammatical sentences with the wh-island constraint	39.7%
Ungrammatical sentences with the sentential subject constraint	35.3%
Grammatical sentences	30.9%

Table 4 shows that the percentages of students who violated rules regarding complex NP constraints and the adverbial island constraints were quite high at 68.6% (11 out of 17 students) and 67.6% (10 out of 17 students), respectively. On the other hand, in the sentential subject constraint and the wh- island constraint, the percentages of violation were lower, 35.3% (6 out of 17 students) and 39.7% (7 out of 17 students) respectively. About half of the students (9 out of 17 students) violated the coordinate structure constraint, with 30.9% producing the wh- questions incorrectly.

4.3 A comparison of the performance of Ubon Ratchathani Rajabhat University students and Ubon Ratchathani University students

The percentages of sentence violation of the two groups of subjects – 25 students of Ubon Ratchathani Rajabhat University and 17 students of Ubon Ratchathani University – are compared in this section. Table 5 displays a statistical comparison of the two groups’ judgment and production failure rates for each type of island constraint.

Table 5 Percentage of incorrect judgment of island constraints

Types of constraint	UBRU		Types of constraint	UBU	
	Judgment	Production		Judgment	Production
complex NP constraint	66.7%	56%	wh-island constraint	63.2%	39.7%
wh-island constraint	62%	47%	complex NP constraint	56.9%	68.6%
adverbial island constraint	46%	48%	sentential subject constraint	35.3%	35.3%
sentential subject constraint	36%	36%	adverbial island constraint	35.3%	67.6%
coordinate structure constraint	32%	52%	coordinate structure constraint	21.6%	55%

In the judgment test, complex NP constraint and wh- island constraint were the two major types of island constraints at which students performed most poorly. 66.7% UBRU students and 56.9% UBU students failed with respect to complex NP constraint, while 63.2% UBU students and 62% UBRU students failed on the wh-island constraint. The island constraint that students could most correctly identify on the grammaticality judgment test was the coordinate structure.

In the production test, UBU students and UBRU students produced the highest percentage of violation on complex NP constraint. The UBU students had a 68.6% failure rate and UBRU students had a 56% failure rate. The percentages of coordinate structure violation between UBRU students and UBU students were nearly the same. However, they performed differently in sentential subject constraint. UBU students had a violation percentage that was quite high (67.65%), in contrast with the percentage of UBRU students (36%).

For a clearer comparison of two groups of subjects, *t*-test was used to analyze the data to see the difference between two groups. The statistical hypothesis of this data is null hypothesis which states that there is no difference between two parameters (UBRU students and UBU students).

Table 6 The performance of two groups of subjects in the judgment test

Type	UBRU students	UBU students
Mean	60.38095238	67.22689076
Hypothesized Mean Difference	0	
t Stat	-0.878349025	
t Critical one-tail	1.683851014	

The table presented the mean score, hypothesized mean difference, *t* Stat, and *t* Critical one-tail. The mean scores of variable 1 (UBRU students) and variable 2 (UBU students) are 60.38 and 67.23 respectively. From the mean scores alone, it seemed that the proficiency of UBU students was higher than that of UBRU students. However, the *t*-Stat of this test was -0.88 and *t* Critical one-tail of this test was 1.68. It can be concluded from the data that there were no significant differences between two groups of students.

Table 7 The performance of two groups of subjects in the production test

Type	UBRU students	UBU students
Mean	49.71428571	54.90196078
Hypothesized Mean Difference	0	
t Stat	-0.709020257	
t Critical one-tail	1.687093597	

The table above also presented the mean score, hypothesized mean difference, *t* Stat, and *t* Critical one-tail of the production test. The mean scores of variable 1 (UBRU students) is 49.71 and variable 2 (UBU students) is 54.90. Similar to the data in Table 6, the mean scores of two groups were slightly different. The *t*-

Stat of the test was -0.71 and t Critical one-tail of the test was 1.69. The data showed a clear and strong result that there were no significant differences between two groups of students.

In sum, the results show that the subjects had problems in identifying and producing ungrammatical sentences that violate island constraints. They reflect that the subject did not have access to UG either directly or indirectly even they were English major students who had studied English for 8-10 years. If UG had been available to them, the results would have been different. The subjects had a problem with more complex sentences but not with simple sentences. To give an example, every subject was able to judge item 1 in the judgment test correctly. The subjects knew that the question “Who did John love?” can be derived from the sentence “John loved Mary” and this is grammatically correct. In addition, in the production test, the subjects could produce a wh-question from “John loved Mary” correctly. The results support the Fundamental Difference Hypothesis that children and adults were different in learning languages. L2 learners have no UG to help acquire a language. They use their experience in L1 and general problem-solving skill in learning language. They can apply the parameters to the new grammar rules but they failed to set the parameters which are different from their L1.

The study also found that subjects faced difficulty in judging and producing some wh- sentences. For example, many violated sentences having a complex NP constraint with adjective clause as in “John talked to [the man who could speak three languages].” Some of the subjects produced the questions such as “How many languages John did talk to the man who could speak?” and “How many languages that the man who John talked to can speak?” From these two examples, it can be seen that the subjects were not aware that they had violated the complex NP constraint. They moved “languages” out of the clause “the man who could speak three languages” which was against the complex NP constraint. As mentioned earlier, English is a language which has an overt wh- movement while Thai is a wh-in-situ language. Most L2 learners in this study know the rule to form a question in English, they must relocate the wh- phrase to the beginning of the sentence. But based on the study, the subjects focused on the movement of wh- phrase rather than the noun phrase. They

moved the *wh*- phrase to the beginning of the sentences but they failed to recognize the constraint which prohibits the movement.

However, it is not impossible to claim the subjects had access to UG indirectly. That is the results here could be interpreted as supporting the *Partial Accessibility Hypothesis* which, based on the inconsistencies shown across the five types of islands and across the subject groups, may put forth two lines of response to the results. One is the argument that the degree of inaccuracy the subjects demonstrated is because the L2 learners, unlike L1 learners, can only have partial access to UG. The other is the different degrees of inaccuracy the subjects performed in recognizing the violations of the five constraints, which could only be accounted for by the assumption that some constraints are better accessible than the others. A case in point is the superior performance across the two subject groups on judging the violation of the coordinate constraint. Leaving aside the fact that they were best at rejecting the movement out of the coordinate structure as compared to the movements out of other four structures, such performance is still not nearly as good as native speakers. Furthermore, there are other more reasonable explanations rather than resorting to the highly questionable account of the partial access. The coordinate structure constraint is actually operative in Thai. For example, Thais prefer to ask a question like “John kin arai” (What did John eat?) from the sentence “John ate apples and oranges” and Thai also simply ask a question “John kin apple lae arai” (John ate apples and what?). Since Thai is a *wh*-in-situ language; as mentioned earlier, it is acceptable and grammatical correct to ask a question like “John kin apple lae arai” as long as a question word is still in the old position. This explains why the subjects were most accurate at rejecting the violation, as compared to other constraints. It is a well-known fact that L1 transfer, be it positive or negative, plays an important role in second language acquisition. So it is quite reasonable that this superior performance is due to the positive L1 transfer, as observed by Bley-Vroman (1990) that L1 knowledge constitutes a basis on which second language is acquired. In addition to this positive L1 transfer, it is also highly possible that the frequency of positive input can lead and reinforce L2 learners to form a hypothesis banning the movement out of the coordinate structure.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

In this chapter, the purposes and the findings are reviewed.
Recommendations for further research are also suggested.

5.1 Conclusion

This study concerned the ability of Thai university students to produce and judge the grammaticality of wh- sentences. It also looked at the types and degree of wh-island violations generated by these same students. This study ultimately wanted to determine the Universal Grammar and its accessibility of L2 learners.

After the results were analyzed, it was found that the subjects in this study violated every major wh- sentence in both production and grammaticality judgment. The greatest number of violations in grammaticality judgment occurred with complex NP constraints and wh- island constraints followed by adverbial island constraints, sentential subject constraints, and coordinate structure constraints. In the production test, the subjects committed violations in a variety of different ways. To illustrate, both UBRU and UBU students violated the complex NP constraints the most. UBU students then violated the sentential subject constraints with the second most frequency while UBRU students violated it the least. For other types of sentences; wh- island constraint, adverbial island constraint, and coordinate structure constraint in particular, the percentages shown in the previous chapter indicate that the subjects' performance is not dramatically different.

The results of the study support the Fundamental Difference Hypothesis which has been often challenged by the Full Accessibility Hypothesis and Partial Accessibility Hypothesis. The Full Accessibility Hypothesis concerns the poverty-of-stimulus argument which believes that children acquire many linguistic features even they have insufficient input because they are born with some universal principles to acquire languages. The Partial Accessibility Hypothesis claims that L2 learners have partial access to UG with the resetting of principles and parameters of L2 input. However, this hypothesis is still questionable because it is difficult to determine

whether adults acquire L2 language grammar by transferring their knowledge in L1 or resetting L2 input or using other general learning mechanisms, not related to UG at all. Based on the results from the present study, if UG is available in L2 acquisition, the subject should have unconsciously recognized the constraints in the tests; they should not have made errors involving island constraints when they form questions and judge the grammaticality of wh- island constraints. So it can be concluded that UG is not accessible in L2 learners.

5.2 Recommendations for Further Study

Additional study might be conducted using other types of island constraints apart from these five constraints. For example, it is challenging to study the violation of the negative island constraint. The negative island constraint is another adverbial island constraint which prohibits the extraction of adverbial clause out of negative questions. From the results of the present study, the students' performance to judge and produce the adverbial island constraint is similar because the percentages of incorrect production are as same as the incorrect judgment. However, the test contained only the declarative sentences. It would be interesting to see how Thai students perform on producing and judging the negative island constraint.

In addition, a further study might be conducted in a larger group of students since this study was limited in the number of subjects. A larger number of subjects might present different or similar results to this study. Moreover, it is advisable to include the students of different proficiency levels to see if the results can be used to support or reflect any of the three hypotheses of SLA.

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APPENDIX

Grammaticality Judgment Test

Directions: Study the sentences in a. Check (✓) if the sentences in b. is correct and (✗) if the sentences is incorrect.

1. a. John loved *Mary*.
b. *Who* did John love ____?
2. a. John ate apples and *oranges*.
b. *What* did John eat apples and ____?
3. a. John wanted to see *a movie*.
b. *What* did John want to see?
4. a. John wanted to see that movie that lasted for 4 hours *last night*.
b. *When* did John want to see that movie lasted for 4 hours ____?
5. a. John watched a TV sitcom that lasted *for 4 hours* last night.
b. *How many hours* did John watch a TV sitcom that lasted ____ last night?
6. a. John wanted to persuade Mary to see a movie *last night*.
b. *When* did John want to persuade Mary to see a movie ____?
7. a. John wanted to know whether Mary wanted to see a movie *last night*.
b. *When* did John want to know whether Mary wanted to see a movie ____?
8. a. John wanted to know whether *Mary* wanted to see a movie last night.
b. *Who* did John want to know whether ____ wanted to see a movie last night?
9. a. John talked to the man who could speak *three languages*.

- b. *How many languages* did John talk to the man who could speak ____?
10. a. John made a claim that Mary killed *a taxi driver*.
- b. *Who* did John make a claim that Mary killed ____?
11. a. John said that Mary could speak *three languages*.
- b. *How many languages* that John say that Mary could speak ____?
12. a. John wondered whether Mary danced with *Tom*.
- b. *Who* did John wonder whether Mary danced with ____?
13. a. That John killed *a dog* was not true.
- b. *What* did that John killed ____ was not true?
14. a. John hated Mary because she hit *his dog*.
- b. *What* did John hate Mary because she hit ____?
15. a. John said Mary liked *Avatar*.
- b. *Which* movie did John say Mary liked ____?
16. a. John said Mary danced with *Tom*.
- b. *Who* did John say Mary danced with ____?
17. a. John wondered who wanted to see *Avatar*.
- b. *Which* movie did John wonder who wanted to see ____?
18. a. John bought a bike and *a TV*.
- b. *What* did John buy a bike and ____?

19. a. John will read *a book* and watch TV.

b. *What* will John read ____ and watch TV?

20. a. John baked *a pie* and Mary ate *it*.

b. *What* did John bake ____ and Mary eat ____?

21. a. John thought that Mary said Tom loved *Jane*.

b. *Who* did John think that Mary said that Tom loved ____?

Production Test

Directions: Write questions starting with wh- (e.g. what, when, why, who, etc.).

The answer of each question is in the bold print.

1. John loved *Mary*.
2. John ate apples and *oranges*.
3. John wanted to see *a movie*.
4. John wanted to see that movie that lasted for 4 hours *last night*.
5. John watched a TV sitcom that lasted *for 4 hours* last night.
6. John wanted to persuade Mary to see a movie *last night*.
7. John wanted to know whether Mary wanted to see a movie *last night*.
8. John wanted to know whether *Mary* wanted to see a movie last night.
9. John talked to the man who could speak *three languages*.
10. John made a claim that Mary killed *a taxi driver*.
11. John said that Mary could speak *three languages*.
12. John wondered whether Mary danced with *Tom*.
13. That John killed *a dog* was not true.
14. John hated Mary because she hit *his dog*.
15. John said Mary liked *Avatar*.
16. John said Mary danced with *Tom*.
17. John wondered who wanted to see *Avatar*.

18. John bought a bike and *a TV*.

19. John will read *a book* and watch TV.

20. John baked *a pie* and Mary ate *it*.

21. John thought that Mary said Tom loved *Jane*.

The performance of two groups of subjects in the judgment test

Type	UBRU students	UBU students
Mean	60.38095238	67.22689076
Variance	567.847619	707.8596144
Observations	21	21
Hypothesized Mean Difference	0	
df	40	
t Stat	-0.878349025	
P(T<=t) one-tail	0.192500067	
t Critical one-tail	1.683851014	
P(T<=t) two-tail	0.385000134	
t Critical two-tail	2.02107537	

The performance of two groups of subjects in the production test

Type	UBRU students	UBU students
Mean	49.71428571	54.90196078
Variance	413.7142857	710.4959631
Observations	21	21
Hypothesized Mean Difference	0	
df	37	
t Stat	-0.709020257	
P(T<=t) one-tail	0.241377921	
t Critical one-tail	1.687093597	
P(T<=t) two-tail	0.482755841	
t Critical two-tail	2.026192447	

VITAE

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